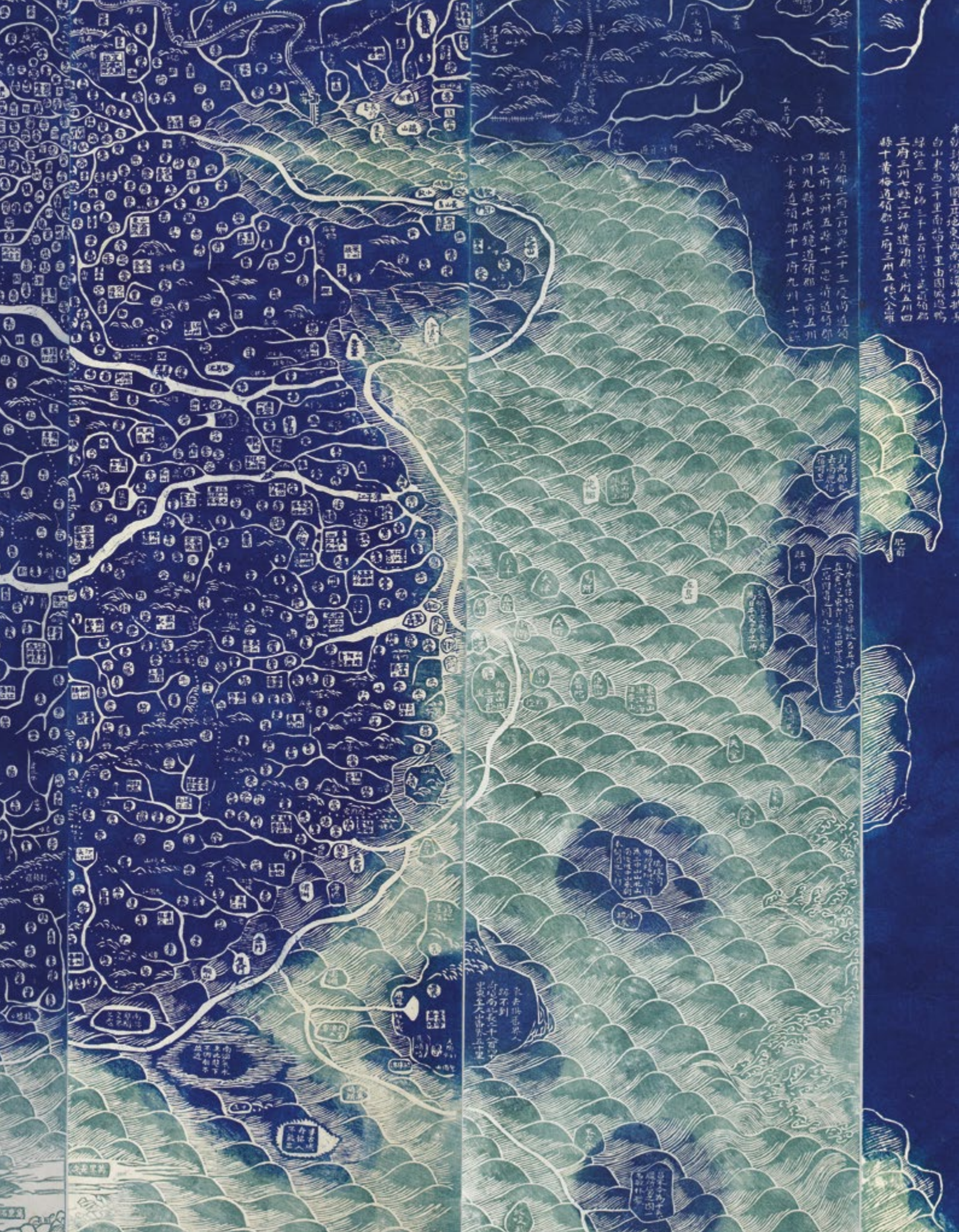

Catalogue VII

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Daniel Crouch Rare Books is a specialist dealer in antique atlases, maps, plans, sea charts, globes, scientific instruments, and voyages dating from the fifteenth to the nineteenth centuries. Our particular passions include rare atlases, wall maps, and separately published maps and charts.

Catalogue VII

1	Reisch	£50,000
2	Ptolemaeus, 1511	£185,000
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8	Bassantin	£120,000
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14	Medina	£8,000
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21	Overton	£4,800
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24	Oliva	£95,000
25	Saxton	£75,000
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31	Wiering	£15,000
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33	Bodenehr	£12,000
34	De Wit	£60,000
35	Ughi	£40,000
36	Gyger	£12,000
37	Breteuil	£135,000
38	Lopez	£40,000
39	The Blue Map	£400,000
40	Cassini France	£50,000
41	Smith	£150,000
42	Cross	£10,000
43	Windsor	£6,000
44	Mccallum	£85,000
45	Hull House	£10,000
46	Blaeu	£1,250,000
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48	Bardin	£130,000
49	Hodges	£7,500
50	Dixey	£9,000

DANIEL CROUCH RARE BOOKS

Daniel Crouch Rare Books LLP
4 Bury Street, St James's
London SW1Y 6AB

+44 (0)20 7042 0240
info@crouchrarebooks.com
crouchrarebooks.com

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Daniel Crouch Rare Books LLP
4 Bury Street
St James's
London
SW1Y 6AB

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info@crouchrarebooks.com
crouchrarebooks.com

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DANIEL CROUCH RARE BOOKS

“As book collectors know all too well:
We only regret our economies, never
our extravagances”.

Michael Dirda

Introduction

Welcome to Catalogue VII, published on our fifth anniversary. To mark this occasion we have selected from our inventory the most spectacular examples in each of the fields in which we specialise – atlases, maps, globes, voyages, and scientific instruments. Each item is distinguished by its historical interest, rarity, or beauty. The most exceptional combine all three, like the pair of Blaeu globes made for Schloss Baldern in Germany (item 46). All represent pinnacles of human achievement, created by the most gifted scholars and craftsmen of their time.

Some are, quite simply, works of art, like the intricate gilded binding on Braun and Hogenberg's 'Civitates Orbis Terrarum' from the library of Philipp Eduard Fugger, which has also retained its original jewel-like hand colouring (item 11). Some are technological innovations: Cassini de Thury's map of France (item 40) was the first national survey to use geodetic triangulation, a process so much more accurate than its predecessors that the results reduced the size of France by 30,000 square kilometres, prompting Louis XIV to exclaim, "You have cost me more territory than all of my enemies!". The manuscripts showing the results of this survey were preserved together with Jean-Dominique Cassini's "astronomical thoughts" on heliocentrism (item 18). The prolific Cassini family was also responsible for the first accurate map of the moon, although Jean-Dominique still included a romantic portrait of his wife on the surface (item 30). Cartography of the heavens is the subject of several other items, including one of the most spectacular books ever published: Apianus' 'Astronomicum Caesarum' (item 6), a book of such rarity that even Henry VIII was unable to obtain an example!

Others stand as testimonies to the eventual triumph of belaboured genius. While publishing his geological map of Great Britain, William Smith faced every hardship imaginable, from debt to plagiarism. As we offer his map and memoir (item 41) on the 200th anniversary of its publication, the importance of Smith and the "map that changed the world" has now been recognized.

We invite you to join us in the appreciation of these outstanding objects, and the people who created them. We also invite you to note the cautionary tale presented by Joseph Cross's map of New South Wales (item 42), which records the expedition of Alexander Hume and William Hovell into the Australian interior. Hume and Hovell quarrelled so badly on the trip that they decided to go their separate ways, but each man was determined to leave with his rightful share of their joint kit. Their parsimony extended even to the division of their single tent. We prefer to be guided by the wisdom of Michael Dirda: "As book collectors know all too well: We only regret our economies, never our extravagances."

Daniel Crouch and Nick Trimming

"... the first hint of Columbus's discoveries on a printed world map."

1 **REISCH, Gregor**

Marguarita philosophica.

Publication
Strasbourg, 1504.

Description
Quarto (230 by 165mm), second edition, title, numerous woodcut illustrations in text, folding woodcut map, two folding woodcut illustrations, one bound upside-down, original blind-stamped pigskin over boards, spine in four compartments separated by raised bands, with two clasps, one skilfully replaced in facsimile, lower board with area of repair at lower left corner.

Collation: 6 a-d6, e-z8, aa-rr8, ss4, H8.

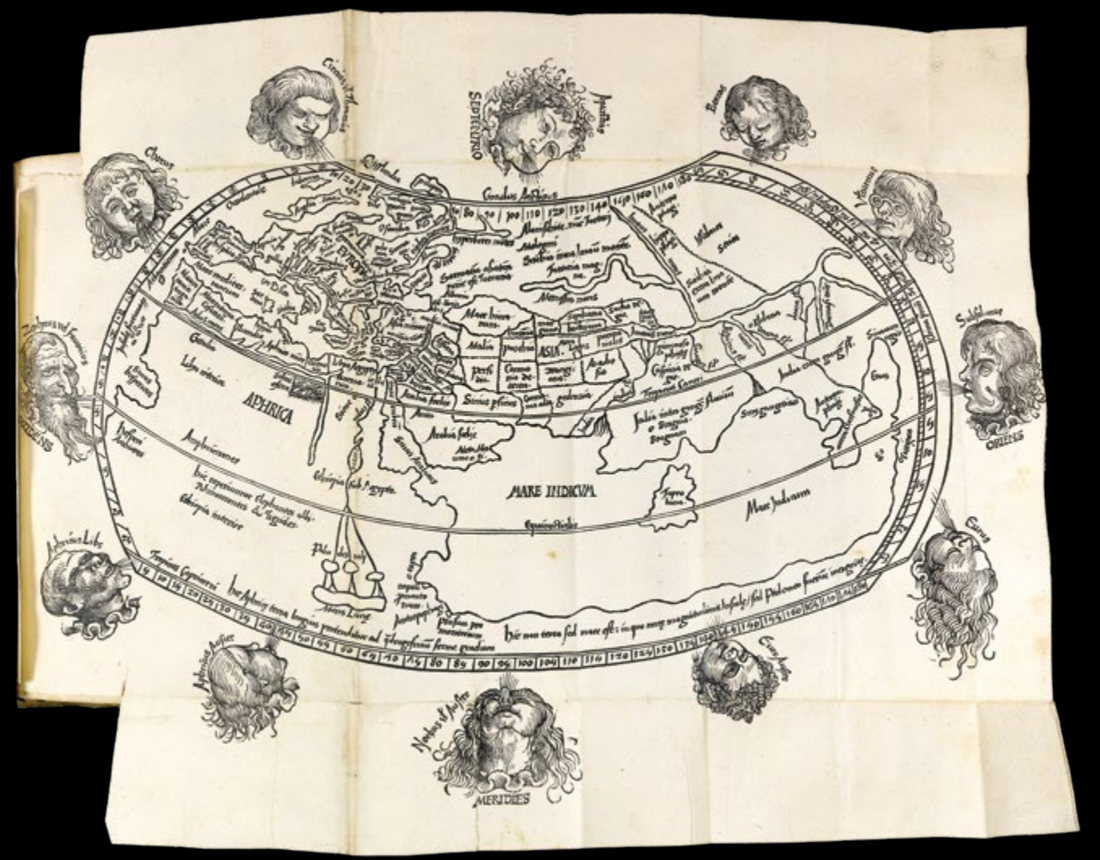
References
G. V. Scammell, The World Encompassed: The First European Maritime Empires c.800-1650 (Berkeley, Los Angeles: University of California Press, 1981), 49; Shirley, World, 22; Thomas Suarez, Shedding the Veil: Mapping the European Discovery of America and the World (New York: World Scientific, 1984), 10; Suarez, Early Mapping of Southeast Asia (Hong Kong: Periplus, 1999), 42.

A fine example of 'Marguarita philosophica', written by Gregor Reisch, tutor at Freiburg to Martin Waldseemüller.

Gregor Reisch (1467-1525) was a German scholar and cleric. He entered the Carthusian order in 1496 and quickly rose through the ranks, becoming Prior six years later, then confessor to the Holy Roman Emperor, Maximilian I, in 1509. In the same year, he oversaw the compilation and printing of the 'Rules of the Order'. The 'Marguarita philosophica' was the product of seven years work before he joined the Carthusians, for at least some of which he was probably acting as a tutor to Franciscus Wolfgang, Duke of Zollern and Waldburg, whom he may have had in mind while preparing his educational tome.

The 'Marguarita philosophica', or 'Pearl of Wisdom', was one of the earliest encyclopaedias, bringing together in one volume all the essential information required to be an educated man at the beginning of the sixteenth century. The text takes the form of a dialogue between a student and master and is divided into 12 chapters, each one focusing on a different aspect of Renaissance learning: Latin grammar, dialectics, rhetoric, arithmetic, music, geometry, astronomy, physics, natural science, physiology, psychology, and ethics. The finely wrought title-page is replete with Christian and classical illusions. Across the top are depictions of the four doctors of the Catholic Church: St Augustine, St Gregory the Great, St Jerome, and St Ambrose. Below, within a circular frame containing the work's chapter headings is a large triple-headed winged angel holding a staff in her left hand (power) and a book in the right (learning). At her feet are personifications of the seven liberal arts: the trivium of logic, rhetoric, and grammar, and the quadrivium of arithmetic, music, geometry, and astronomy. Aristotle and Seneca are depicted in the lower left and right corners respectively.

Throughout the work are a series of fine woodcuts, many of which were done by Alban Graf. Graf's education at the University of Basel meant that he could both read the text he was illustrating and also discuss with Reisch the complexities of the concepts he was trying to convey, with informative and beautiful results. One of the plates that illustrates the astronomy chapter shows a geocentric solar system, with man firmly at the centre. However, the most important woodcut is the world map, as on it "we find the first hint of Columbus's discoveries on a printed world map. Though Ptolemaic in its geographical content, this map contains a legend which alludes to the discovery of the New World [or, at least, an awareness of the voyage of Vasco de Gama]. That legend appears on the Ptolemaic land bridge connecting Southeast Asia to Africa. It states, in Latin, that "here there is not land but sea, in which there are such islands not known to Ptolemy"" (Suarez, Shedding the Veil). It is also the first map to show lines of both latitude and longitude. The world is surrounded by twelve windheads with Vulturnus, the eastern wind, sporting a fine pair of spectacles – one of the earliest depictions of correcting lenses, and certainly the first for a windhead.



The first atlas wholly printed in colours

2 **PTOLEMAEUS, Claudius and Bernadus SYLVANUS**

Liber geographiae cum tabulis et universali figura et cum additione locorum quae a recentiorbus reperta sunt.

Publication
Venice, Jacobus Pentius de Lencho, 1511.

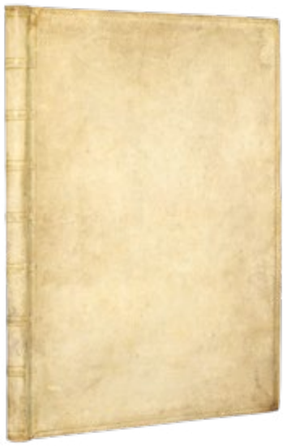
Description
Folio atlas (440 by 300mm), title in red, poem on verso printed in red and black, 6pp. preliminary text printed in red and black, 115pp. text printed in red and black with four woodcut and letterpress diagrammatic illustrations, 28 woodcut maps printed in red and black (each double-page with all but the final world map printed in red and black in two sections on facing pages), contemporary limp vellum.

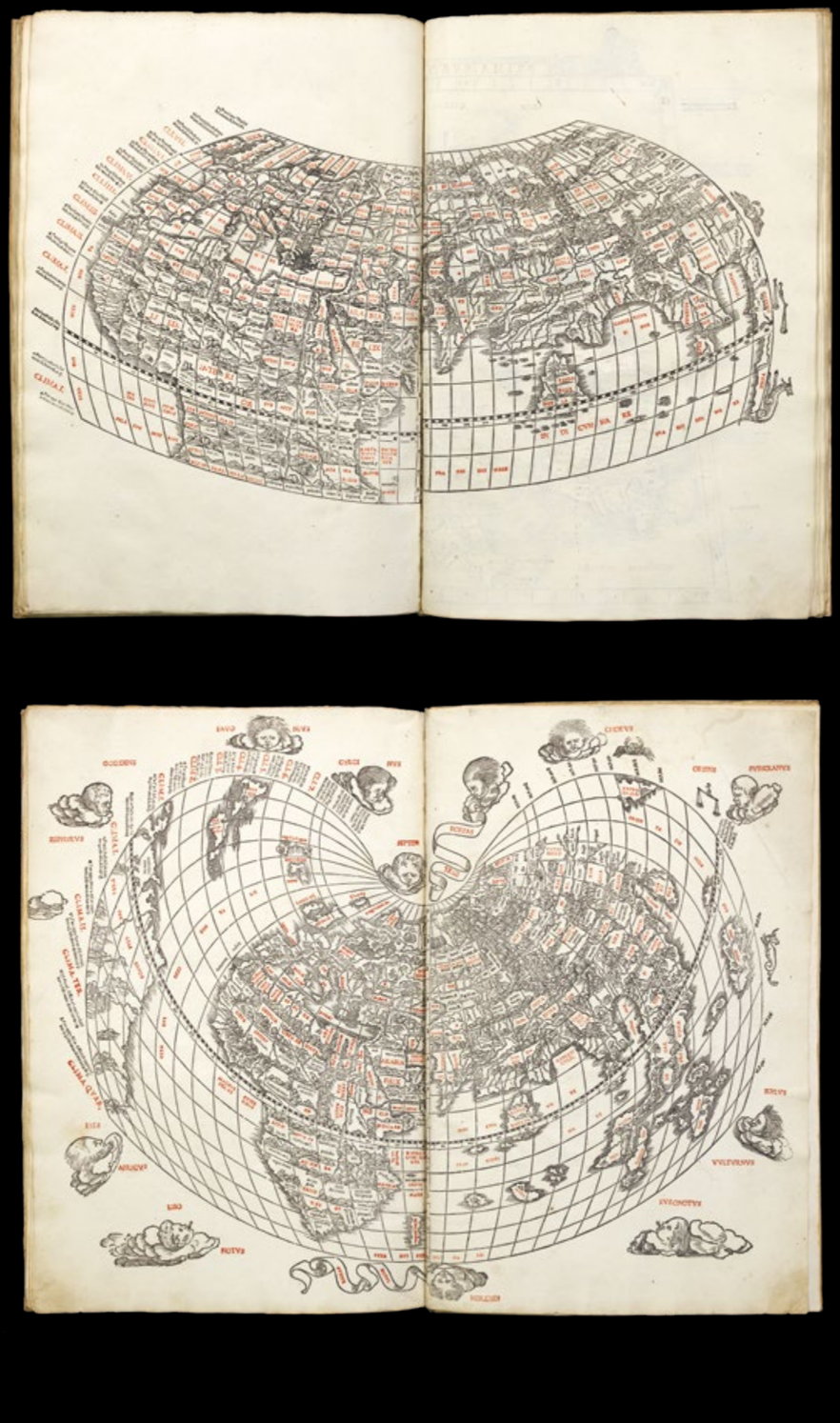
Collation: [4]; A8, B-H6, I8, 28 maps.

References
Mickwitz, Nordenskiöld 2:204; Phillips 358; Sabin 66477; Shirley, World, 32.

A very fine example of the Venetian editon of Ptolemy's 'Geographia'. This is the first illustrated edition of Ptolemy's work in which an attempt was made to update the information given on the maps. It is also one of the earliest examples of two-colour printing in cartography, with the major regional names printed in red and others in black, using inset type. The large cordiform world map is the earliest of its kind, and this is only the second Ptolemaic world map to show America ("Regalis domus" and "Terra laboratoru[m]"). It is also the first printed map to indicate Japan ("Zampagu Ins").

Provenance
From the library of Samuel Latham Mitchell Barlow (1826-1889), a New York lawyer, who built up one of the most important collections in the nineteenth century. He worked with Henry Harrisse on 'Notes on Columbus', an invaluable work for the biography and bibliography of the discovery of the New World.





The first description of the Lunar Distance method for determining longitude

3 APIANUS, Petrus

Cosmographicus liber.

Publication
Landshut, Johann Weyssenburger, 1524

Description
First edition, quarto (197 by 152mm), title with large woodcut globe, arms of the Cardinal Archbishop of Salzburg on verso, full-page woodcut on p. [viii], the first quire printed in red and black, the title coloured by a contemporary hand, profusely illustrated with woodcuts depicting globes, scientific instruments, astronomical and geographical maps and diagrams, etc., the illustrations on pages (Cols.) 17, 24, 50, 63 and lv with well-preserved volvelles; two unused volvelles are attached to the final printed leaf, being parts of the illustration of Apianus's 'Instrumentum syderale', title slightly soiled and with wormhole in upper margin, contemporary south German binding of limp vellum, blind-stamped calf spine, worn, 'Maria' stamped catches, broken.

Collation: [pi]4"; A-M4; 4: 56 leaves, 4 blank; with many mis-signings. A lv-M4v paginated (as "Col.") 2-104.

References
Harrisse 127; Robert Karrow, Mapmakers of the sixteenth century and their maps (Chicago: Speculum Orbis Press for The Newberry Library, 1993), 53; Fernand van Ortroy, Bibliographie de l'Oeuvre de Pierre Apian (Amsterdam: Meridian, 1963), 22; Sabin 1738; Margaret Bingham Stillwell, The Awakening Interest in Science during the First Century of Printing, 1450-1550 (New York: Bibliographical Society of America, 1970), 136; Bibliotheca Americana: Catalogue of the John Carter Brown Library, vol.1 (Providence: Brown University Press), 89.

Petrus Apianus (1495-1552) was born in Saxony as Peter Bienewitz. He studied at the University of Leipzig from 1516 to 1519, where he took a Latinised version of his German name: Petrus Apianus. In 1520 he moved to Vienna, where he was part of the second Vienna school of cartography, and produced his first world map there. He then moved again to Landshut, where he produced the 'Cosmographicus liber' in 1524, his first major work.

Based on the theories of Ptolemy, it contains paper instruments called volvelles, which Apianus would use so effectively in his work that they are sometimes known as Apian wheels. It covers "the division of the earth into climatic zones, the uses of parallels and meridians, the determination of latitude, several methods for determining longitude including that of lunar distance, the use of trigonometry to determine distances, several types of map projections, and many other topics" (Karrow). America is depicted on the globes on pp. 2 and 63 and described on p. 69.

The 'Cosmographicus liber' is one of the most popular books on cosmography ever published. It went through no fewer than 45 editions, was published in four languages, and was manufactured in seven cities by at least 18 printers. Its popularity derived principally from its maps and discussion of the New World, but also for its ingenious use of volvelles.

Copies are very rarely found with the full complement of volvelles: the British Library copy, for instance, lacks the volvelle on p. 50. The book is uncommon. We have been able to trace five examples of the first edition selling at auction since World War II, with only one, the present example, in contemporary hand colour (1999, Sotheby's NY; 1978, Sotheby's London (this copy); 1965, Sotheby's NY (two examples); 1951 William Schab).

Provenance
1. In Latin, 1555, gift of the book by a Prior Erasmus, ownership inscriptions on front paste-down.
2. In Latin, c. 1600, monastery of Chemnitz (now Karl-Marx-Stadt), ownership inscriptions on front paste-down.
3. In German, signed by Christof Halla recording purchase of the book in 1653 from a named friend, ownership inscriptions to title.
4. Honeyman sale (Sotheby's London, 30 October 1978, lot 99, £2,600).
5. Otto Schäfer Stiftung, Schweinfurt, Germany.

First map in an edition of Ptolemy to name “America”

4 PTOLEMAEUS, Claudius

Geographicae enarrationis libri octo. Bilibaldo Pirckeymhero interprete. Annotationes Joannis de Regio Monte in errores commissos a Jacobo Angelo in translatione sua.

Publication
Argentoragi, Johannes Grieningerus, communibus Johannis Koberger impensis excudebat. [Imprint from colophon: recto of leaf Q8], 1525.

Description
Folio atlas (406 by 265mm), title within ornamental woodcut border, and 50 numbered woodcut maps (27 double-page maps of the ancient world, 22 double-page maps of the modern world by Lorenz Fries, and one full-page map of Lotharingia on the verso of map 46), mounted on vellum guards, most maps with descriptive text on verso enclosed within elaborate woodcut borders (said to be the work of Hans Holbein and Urs Graf), woodcut diagrams in the text, contemporary blind-stamped pigskin over oak boards, metal clasps.

Collation: A-M(6), N(4), O(6), 50 numbered double-page woodcut maps a-e(6), f(4), P(6), Q(8) [Collophon].

References
Mickwitz, Nordenskiöld, 2:208; Phillips 362; Sabin 66482.

Fourth Strassburg edition. The text was translated by Wilibald Pirckheimer, using the notes of Johannes Regiomontanus, perhaps under the editorship of Johann Huttich. The ornamental woodblock designs on the reverse of the maps are attributed to Albrecht Dürer, who also contributed the woodblock of the armillary sphere. The present edition is the second one printed by Grüninger. However, all maps are printed from the woodblocks of the first Grüninger edition of 1522.

The maps are all drawn on the trapezoid projection developed by the German cartographer Nicolaus Germanus (1420-1490) in 1460. 27 are drawn according to Ptolemaic theory, and a further 23 “modern” maps have been added, which incorporate contemporary knowledge.

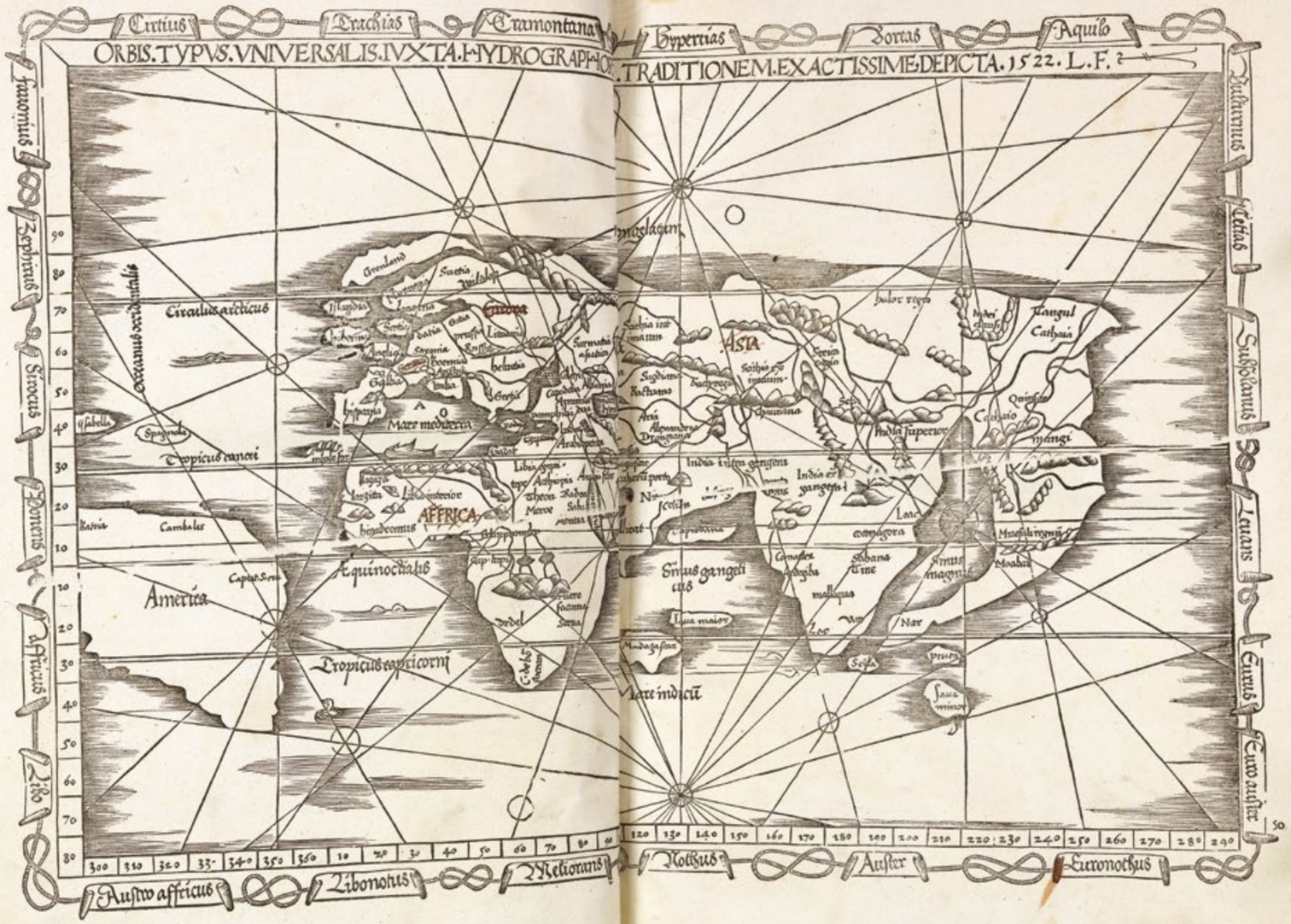
The “modern” section was copied by Lorenz Fries, on a reduced format, from the maps prepared by Waldseemüller for the 1513 Strassburg edition of Ptolemy, and accordingly contains updated maps of North America and the West Indies, Lorraine, Switzerland, Crete, North Africa, Southern Africa, Southern Asia and the World.

To that group Fries added two entirely new maps, which were the first separately printed maps of the regions they depict: one of Southeast Asia and the East Indies, and one of China and Japan. He also added his own navigational map of the world.

The 50 woodcut maps, with the exception of ‘Quinta Asie Tabula’, are from the same blocks as those of the 1522 edition. Map 47, is a single page on the verso of map 46. Map 50, ‘Orbis typus universalis’, by Lorenz Fries, is the first map in a Ptolemy in which the name “America” is used. Maps 28, 34, 49, and 50 relate more or less to America, and are described in a note to the preceding edition. The account of the discoveries of Columbus and others is on the back of Map 28.

Provenance
Otto Schäfer Stiftung, Schweinfurt, Germany.

ORBIS. TYPVS. VNIVERSALIS. IVXTA. HYDROGRAPHO[rum]. TRADITIONEM. EXACTISSIME. DEPICTA. 1522. L. F.



The Basel edition of Huttich's 'Novus Orbis' containing the Holbein/Münster map of the world

5 HUTTICH, Johann and Simon GRYNAEUS

Novus Orbis regionum ac insularum veteribus incognitarum una cum tabula cosmographica ...

Publication
Basel, 1537.

Description
Folio (300 by 205mm), woodcut printer's device on title, large woodcut map on two sheets, original limp vellum, remnants of ties, title to spine and fore-edge, in manuscript.

References
Harrisse 198; Mickwitz, Nordenskiöld, plate XLI; Shirley, World, 67; Hans Wolff, ed., Early Maps of the New World, (Munich: Prestel, 1992), 86.

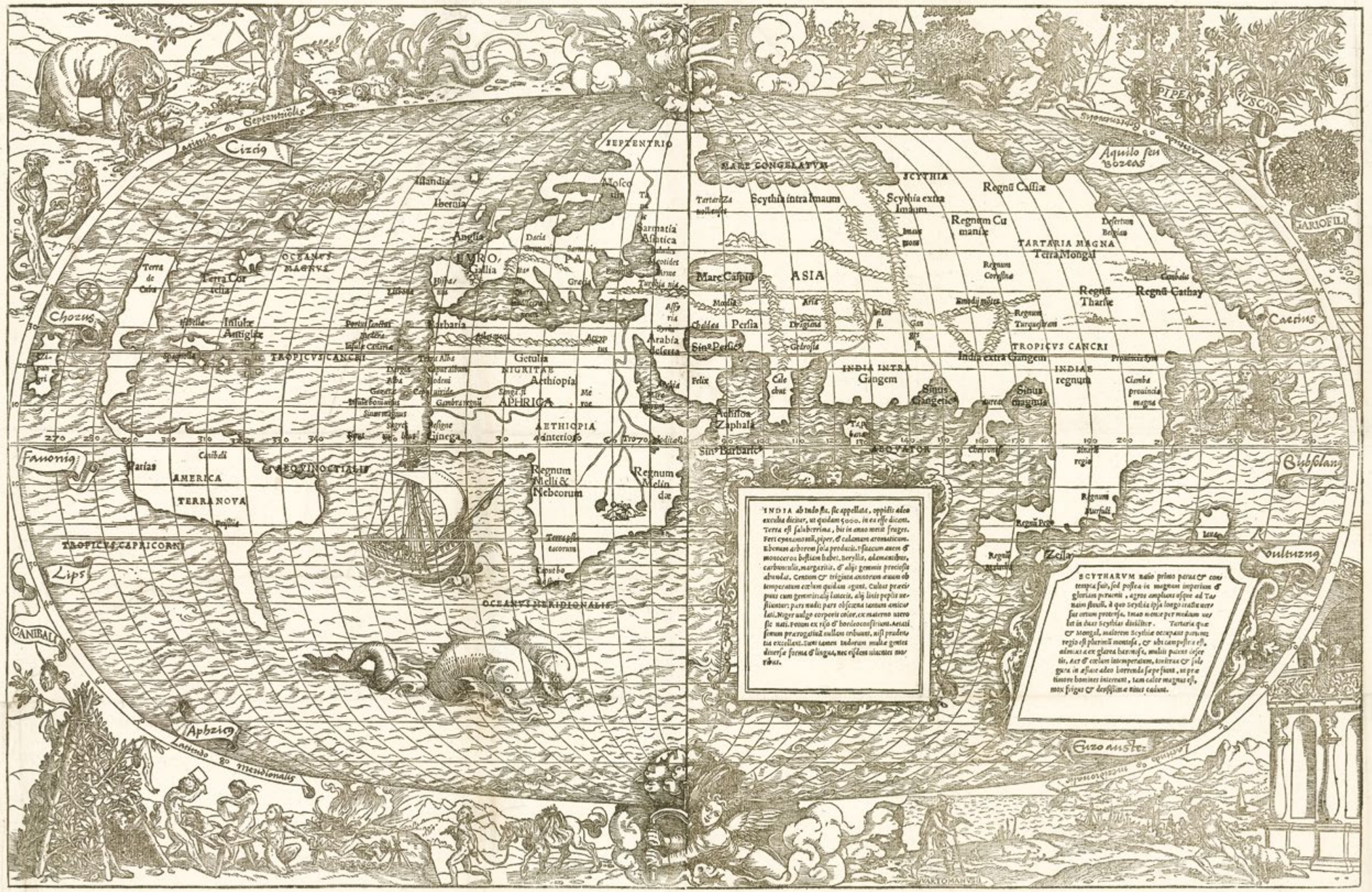
This fine collection of voyages was compiled by Johann Huttich (1480?-1544), with a preface by Simon Grynaeus (1493-1541). The work contains the first three voyages of Columbus, Vincente Yanes Pinzon's voyage, the four voyages of Amerigo Vespucci, and an extract of the Fourth Decade of Peter Martyr, as well as the voyages of Alvise Cadamosto, Pedro Nino, and Pedro Alvares Cabral. Other accounts deal with the travels of Marco Polo and voyages to Africa, Russia, Palestine, the Moluccas, and elsewhere.

The collection contains Sebastian Münster's world map, engraved by Hans Holbein. The attribution of this work to Münster has been disputed. A.E. Nordenskiöld points out that the inscriptions, the distribution of land, and the method of drawing the meridians on the oval projection all differ from Münster's other maps. Henry Harrisse, however, points to the introduction, where Münster directly refers to his creation of the map: "We have found it impossible to indicate the position of all of the regions and all of the islands, because the narrowness of our map did not allow it, and that was not our object". Cartographically speaking, the map is clearly based upon earlier sources: the shapes of the Old and New Worlds are still strongly influenced by the early globes produced by Johann Schöner and the world maps produced by Nicolaus de Caverio and Martin Waldseemüller. It has been suggested that the map was produced at an earlier date by Holbein and kept to be inserted in Münster's new publication.

However, what the work lacks in originality, it makes up for in the beauty of Holbein's illustrations. The seas boast a galleon, sea-monsters, and a mermaid. The four corners illustrate the four continents: Africa, to the upper left, shows a man drawing his bow before his companion is gored by an elephant; in Asia, to the upper right, Persians hunt with bow and arrow, next to spice plants; in the Americas, cannibals butcher and cook their lunch to the lower left; while, to the lower right, Lodovico de Varthema, the great European explorer, strides across a landscape towards a man about to club a scapegoat before a woman leaning from a balcony. At the poles, two angels crank handles to turn the world upon its axis. This detail has particular significance, pointing to a new concept of the universe with a rotating earth. This map appears some six years before these ideas first appeared in print, in Copernicus' 'De Revolutionibus'.

Provenance
Inscription of M. E. de Treville to upper cover: possibly related to the musketeer Comte de Troisville (Treville), later immortalised by Alexandre Dumas.

TYPVS COSMOGRAPHICVS VNIVERSALIS.



“The most spectacular contribution of the book-maker’s art to sixteenth-century science”

6 APIANUS, Petrus

Astronomicum Caesareum.

Publication
Ingolstadt, Peter Apian, 1540.

Description
Folio (463 by 315mm), [60] ll., title-page framed by a woodcut border, on verso of the same leaf woodcut coat-of-arms of the joint dedicatees Charles V and his brother Ferdinand of Spain, 53 eleven-line and 39 six-line historiated woodcut initials by Hans Brosamer, 36 full-page woodcut astronomical figures coloured by a contemporary hand, of which 21 have a total of 83 volvelles [complete], 42 [of 44] silk threads, and 11 [of 12] pearls, full-page woodcut arms of the author by Michael Ostendorfer on fol. 06, a small letterpress cancel slip on recto of fol. K1 correcting the text, contemporary panelled blind-stamped pigskin over pasteboards, spine in six compartments separated by raised bands, remains of ties.

References
Benezit Dictionary of Artists (Paris: Editions Gründ, 2006) vol.II, 332 and vol. VIII, 49; Susan Dackermann, ed., Prints and the Pursuit of Knowledge in Early Modern Europe (New Haven: Yale University Press, 2011), 104-107; Campbell Dodgson, Catalogue of Early German and Flemish Woodcuts, vol.II, (London: British Museum, 1903), 242; George Kish, “Petrus Apianus”, in Dictionary of Scientific Biography (vol.1), ed. Charles Coulston Gillispie (New York: Scribner, 1970-80), 178-179; Stephen Hebron, Marks of Genius: Masterpieces from the Collection of the Bodleian Libraries (Oxford: Bodleian Libraries, 2014), 192-195; Owen Gingerich, Rara Astronomica (Cambridge: Harvard Library Bulletin, 1971), 14; Gingerich, “Apianus’s Astronomicum Caesareum”, Journal for the History of Astronomy 2 (1971), 168-177; Gingerich, “A Survey of Apian’s Astronomicum Caesareum” in Peter Apian, ed. Karl Röttel (Buxheim and Eichstätt: Polyon-Verlag, 1995), 113; Fernand van Ortroy, Bibliographie de l’Oeuvre de Pierre Apian (Amsterdam: Meridian, 1963), 112; Emmanuel Poulle, Les instruments de la théorie des planètes selon Ptolémée, vol.1, (Geneva: Droz; Paris: Champion, 1980), 83; Derek J. de Solla Price, Science since Babylon, (New Haven: Yale University Press, 1975), 104; Margaret Bingham Stillwell, The Awakening Interest in Science during the First Century of Printing, 1450-1550 (New York: Bibliographical Society of America, 1970), 19; E. Zinner, Astronomische Instrumente des 11 bis 18 Jahrhunderts (Munich: Beck, 1956), 1734.

First edition of “the most luxurious and intrinsically beautiful scientific book that has ever been produced” (de Solla Price), in an extraordinary hand-coloured early issue, as attested by the letterpress cancel slip on fol. K1r, preserved in a beautiful contemporary German binding.

The author of this popular textbook in astronomy is Petrus Apianus, astronomer and professor of mathematics at Ingolstadt, and a veritable pioneer in the production of astronomical and geographical devices.

Apianus’s work on the project began eight years before and the ‘Astronomicum Caesareum’, which was printed in his private press at Ingolstadt, is considered “the most spectacular contribution of the book-maker’s art to sixteenth-century science” (Gingerich, “Apianus’s Astronomicum Caesareum”).

The handbook is divided in two parts. The first (ll. B1-M3) includes 40 chapters with maps reproducing the position and the movement of celestial bodies. The second part describes the meteroscope, an instrument designed to solve problems in spherical trigonometry, and relates the sighting of five comets: “The Astronomicon is notable for Apian’s pioneer observations of comets (he describes the appearances and characteristics of five comets, including Halley’s) and his statement that comets point their tails away from the sun. Also important is his imaginative use of simple mechanical devices, particularly volvelles, to provide information on the position and movement of celestial bodies” (DSB).

The volvelles in the work are each placed within a frame reminiscent of an astrolabe, a contemporary device that modelled the movement of the heavens in two dimensions and enabled the calculation of time and place, and assisted with astrology. The first moveable woodcut, which represents the planispheric astrolabe, compresses both hemispheres onto one plate. According to the text, the plate depicts 1,033 stars, and was based on the first printed star charts published in 1515 by Albrecht Dürer.

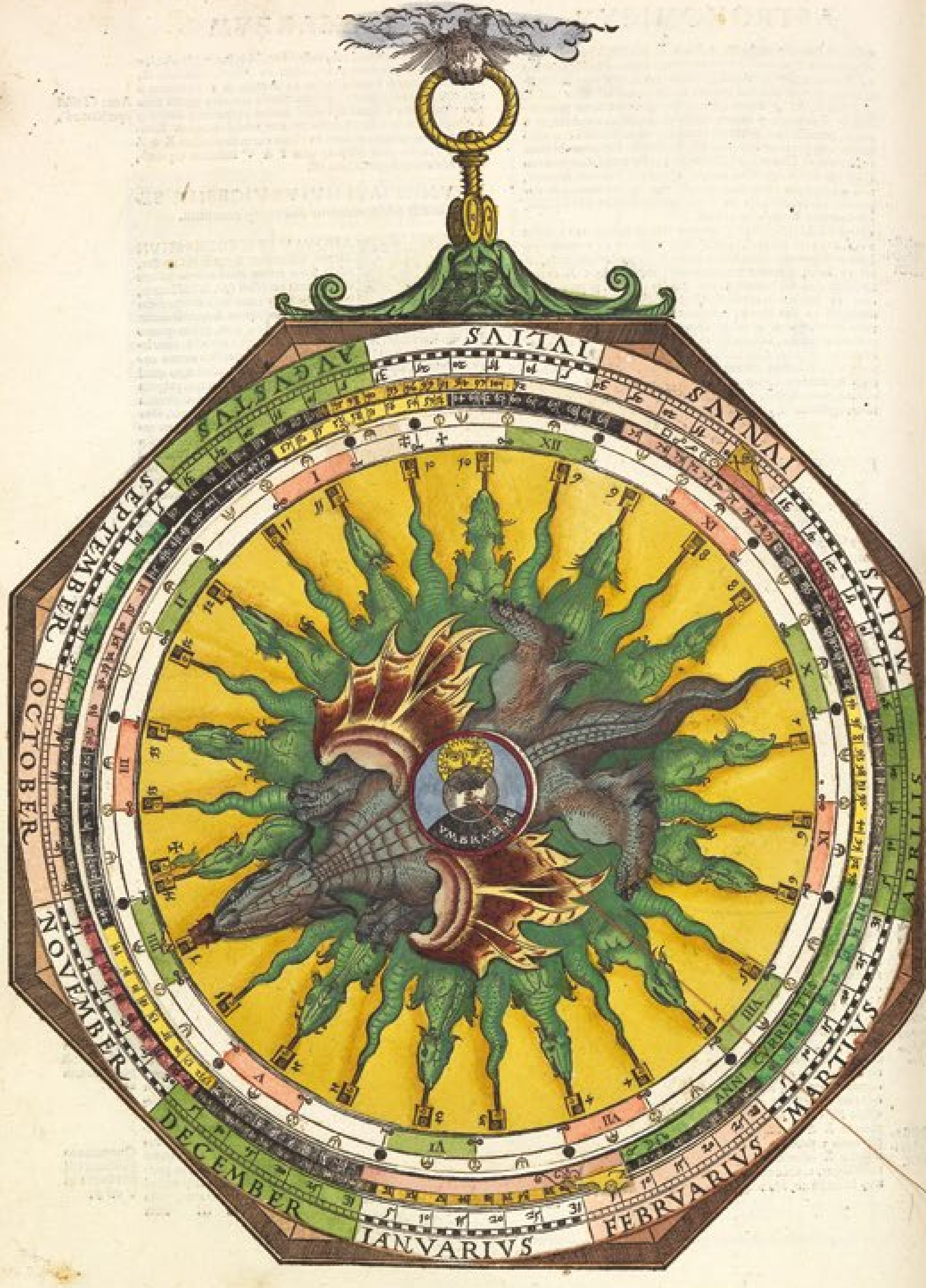
The most spectacular of the volvelles, which are the work of the artist Michael Ostendorfer, are the dragon plates. These include the title-page and the double-page spread dragon and moon dials. The dragon dial can be used to calculate the nodes of the moon, the two points of intersection between the yearly path of the sun, and the plane of the lunar orbit, which produce eclipses. Dragons were associated with eclipses, which were believed to occur when their head or tail blocked the sun. The thirteen small dragons indicate different parts of the lunar cycle.

For the dissemination of calculating technology in a standardized and reproducible form, the appearance of “paper instruments” has been compared to nothing less than the advent of printing (Poulle).

“Some thirty-five copies of the Astronomicum Caesareum are known today. Fabulously expensive to produce and prohibitively expensive to buy, it was always a rare book. Nicholas Wotton reported in 1544 from the Diet of Speyer that Apian would give Henry VIII a copy, for otherwise the king would not be able to get hold of it; Edmund Halley tried in vain to obtain a copy” (Hebron).

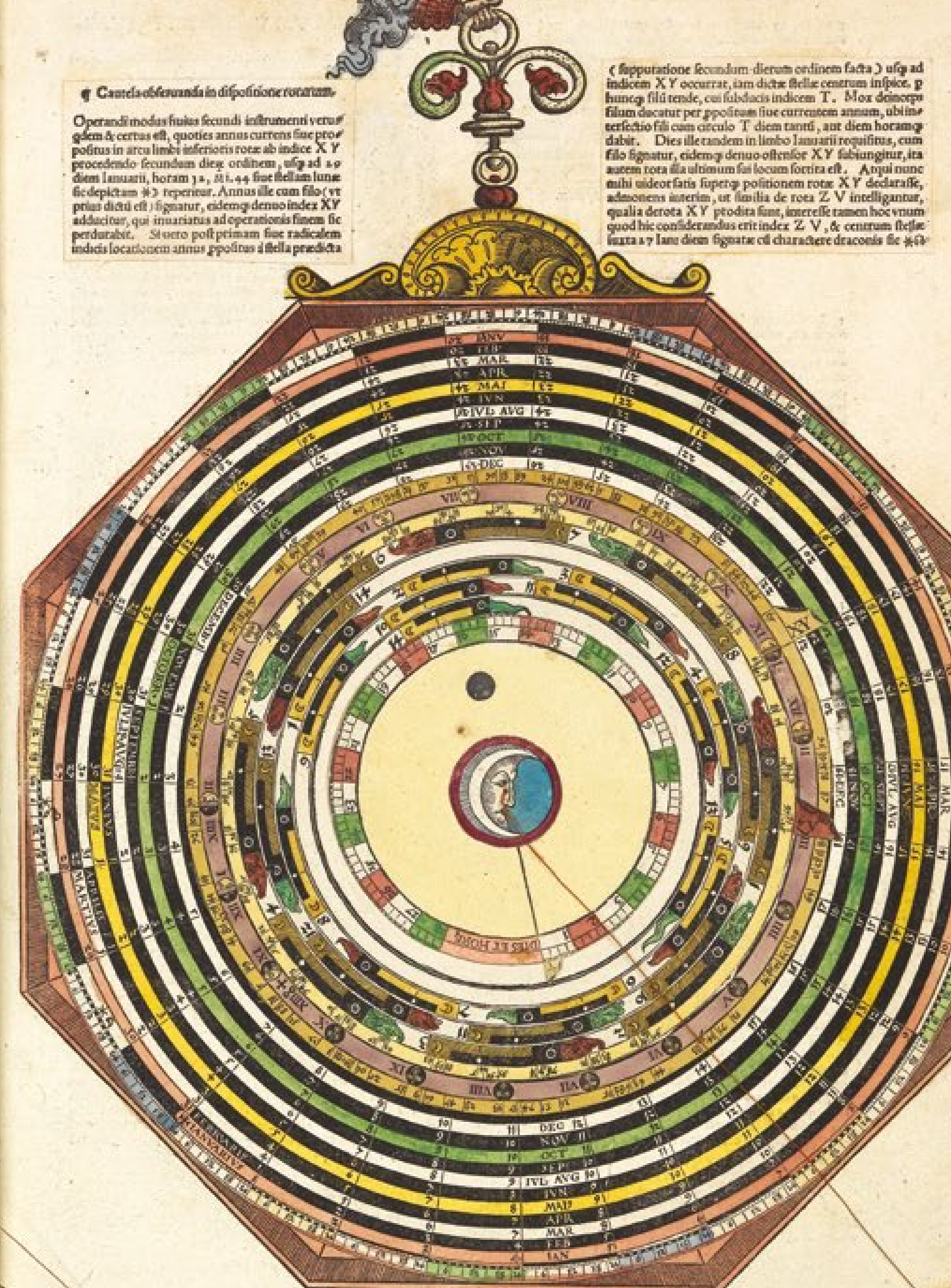
The present example represents one of the, if not *the*, most complete copy to have ever appeared on the market: the Horblit copy lacked 23 volvelles and one pearl, while the Honeyman copy lacked seven volvelles, one silk thread, and nine pearls.

Provenance
1. Bookplate of the Electorial Library of the Dukes of Bavaria.
2. Library stamp of Staatsbibliothek München with deaccession stamp.
3. Otto Schäfer Stiftung, Schweinfurt, Germany.



¶ Cautela obseruanda in dispositione rotarum.

Operandi modus huius secundi instrumenti verus quidem & certus est, quoties annus currens siue propositus in arcu limbi inferioris rotæ ab indice X Y procedendo secundum dierū ordinem, usq; ad 29 diem Ianuarii, horam 12, M. 44 siue stellam lunæ sic depictam (✱) reperitur. Annus ille cum filo (vt prius dictū est) signatur, eidemq; denuo index X Y adducitur, qui inuariatus ad operationis finem sic perdurabit. Si uero post primam siue radicalem indicis locationem annus ppositus à stella prædicta (supputatione secundum dierum ordinem facta) usq; ad indicem X Y occurrat, iam dictæ stellæ centrum inspice. p hunc filū tende, cui subducis indicem T. Mox deinceps filum ducatur per ppositum siue currentem annum, ubi intersectio fili cum circulo T diem tantū, aut diem horamq; dabit. Dies ille tandem in limbo Ianuarii requisitus, cum filo signatur, eidemq; denuo ostensor X Y subiungitur, ita autem rota illa ultimum sui locum sortita est. Atqui nunc mihi uideor satis superq; positionem rotæ X Y declarasse, admonens interim, ut similia de rota Z V intelligantur, qualia de rota X Y prodita sunt, interesse tamen hoc unum quod hic considerandus erit index Z V, & centrum stellæ iuxta 27 Ianu diem signatæ cū charactere draconis sic ✱



ENVNCTIATVM QVARTVM.

Stellarum fixarum longitudines in Zodiaco, earundemque latitudines, id est, ab ecliptica deuiationes, à mundi usque creatione factas, gradus insuper, minuta, augesque planetarum ante & post Christi tempora certas, Adhæc quibus stellis fixis, quilibet planetę indies appropinquent, quasue vicinia sua obtegant, indagare.

SECVNDVM NI FALlor, pronunciatum abunde docuit, Octauæ, Nonæ, Decimæque sphæræ motus. Quocirca in præsenti nihil amplius, quàm ad theoricam attinet, addam. Verum, breuiter & sine ambage, quomodo omnium stellarum fixarũ cursus, planetarũque auges, dicto citius, per instrumentum sequens, deprehendas, aperiam. ¶Quandoquidem decimus orbis, ab ortu in occasum mouetur, ut dictum est, ecliptica uero uel Zodiacus in eodem coelo nobis statuatur, nihil vltra de motu huius agemus, qui per Zodiacum illum immobilem seu fixum intelligitur, sed Zodiacum ita firmum per omnia instrumenta, tanquam decimum coelum, extimũ post hac semper posituri sumus. Qualem igitur & nunc uides, post quem & consequenter rotulam, quandam uolubilem, cui insiti imagines coeli. Imaginum quælibet, suas stellas complectitur, stellarum quædam sunt in medio albæ, sex in extremitate acies gerentes, cuiusmodi est, quæ oculum tauri, quæque os canis maioris, possidet, cuius figura hæc est. ✳ Et illæ sunt quantitatis primæ, qualesnũ plures, 15. astronomi descripserunt. Post has. 45. secundæ magnitudinis lucent, paulo minores inferioresque primis, tales sunt septem, vrsam maiorem constituentes, præcipue caudam repræsentantes tres, quæ etiam ad differentiam aliarum, nigræ depinguntur, in sex acumina discretæ, qualem hic vides. ✳ Quanquã uero astronomis in sextam usque differentiam stellæ descriptæ sint, ego tamen primam & secundam magnitudines saltem indicaui, stellas quoque nebulosas cum nota huiusmodi. ⁂ Reliquarum discrimina, ob instrumenti angustiam, significare non potui, uerũ simpliciter nota quadam, o. expressi. In medio ferè illius rotæ circulus quidam niger cernitur, qui eclypticam refert, in quo duodecim signa ex ordine describuntur. Iuxta Scorpionem transuersa quædam linea apparet, in. 10. gradus secta, vtrinque ab ecliptica, 8. continens, qui latitudinem zodiaci demonstrant, Sub finem Eridani, stellam que nomine Acarnar est, iuxta quã index habetur, cui inest. Y. cõem augẽ notans, per quem noscitur, quot gradus octaua & nona sphæra simul, in tempore aliquo proposito, similiter stellæ fixæ, errantiumque auges, peragant. Penes stellam Canis maioris alius index est, augem Solis & ♀ significans. Rursus ad nauim indices bini sunt, auges ♂ & ♃ ferentes, Apud Centaurum ☿. Apud Aram ♄ augem deferri vides. Hii indices perpetuò in eadem & æquali ab inuicem distantia manent. Postremo circulus quidam undequaque in partes diuisus. Ceto uicinus cum indice, cui signum est X, uidetur, qui circulum illum paruum, de quo prius dixi, qui uidelicet principium. ♈. nonæ sphæræ ambit, repræsentat.

Auges planetarum perpetuo in eadem & æquali ab inuicem distantia.

Quoniam uero Arietis exordium, 8. sphæræ, huius circuli circumferentiam in. 7000. annis semel circuit, feci hunc quoque circulum in totidem partes, ita ut quælibet sectio. 500. annos notaret. Annorum post Christum numeros, interiori circulo inserui, de 500. in 500. procedendo, ab indice inchoando. Anni autem ante Incarnationem Christi elapsi, exteriori circuli parte scribuntur, per quos octauæ sphæræ trepidatio indagatur. Partibus instrumenti declaratis, eiusdem usum subiungam. ¶ Si uis stellas fixas vnã cum planetarum augibus, ad tempus propositum tibi qualequale, uerificare, eleua rotam iuxta. ♈. decimæ sphæræ, ubi gradus quosdam reperies, quorum singuli. 500. annos continent. Si tempus propositum ante Christum sit, numerabis deorsum à ✚ incipiendo versus principium X, Si autem post Christum, numerabis à ✚ incipiens sursum, secundum signorum ordinem, finis inuenti numeri, ostendit in zodiaco proxime, quantum nonus orbis sub decimo, in totidem annorum spacio promouetur: cui loco indicem cum X signatum admoue. Post hæc totidem annos in circulo paruo trepidationis ab indice ordiens (uel intus, & hoc si tẽpus post Christi natiuitatem, uel extra si tempus ante Christum proponatur) numera, & fini annorum requisitorum filum applica, quod ex centro rotæ pendet. Quo bene extenso, obserua, quot inter filum & indicem, in zodiaco gradus sint, illi namque æquationem octauæ sphæræ cum nona indicant. Immoto sic filo permanente, duc indicem. Y. qui est aux communis, sub idem, atque ita rotam inuariatam relinque, ad tempus enim tuum iam uerificata est. Qua sic iacente, filum è centro eius, stellæ, cuicunque libuerit, super extende, quod in zodiaco gradum, in quo, vel fuerit, uel futura sit, tempore præfinito, demonstrat. Præterea indices planetarum, docent, gradus & minuta augium, in quibus eo tempore sint uel fuerint. Cuius rei exemplum esto,

Operandi modus.

Exemplũ CAROLI imperatoris.

¶CAROLVS Quintus Romanorum Imperator, semper Augustus 23. Febcuarii natus est, 15. hora 44. m. pomeridianis, post Christi annum sesquimillesimum, Ad tempus hocce figuram præsentem cũ suis indicibus, ubi direxi (quamuis dies, horas m., in motibus hisce tardioribus, non adeo consideremus) scire uolo, quem locum coeli tenuerit, eo tempore cor leonis. Extendo itaque filum per stellam, & inuenio eam in longitudine, 22. gradum. 8. m. ♌. occupare. Sic agas etiã in reliquis, & ueros motus semper in zodiaco ostendetur.

Auges erratium tempore FERDINANDI Regis.

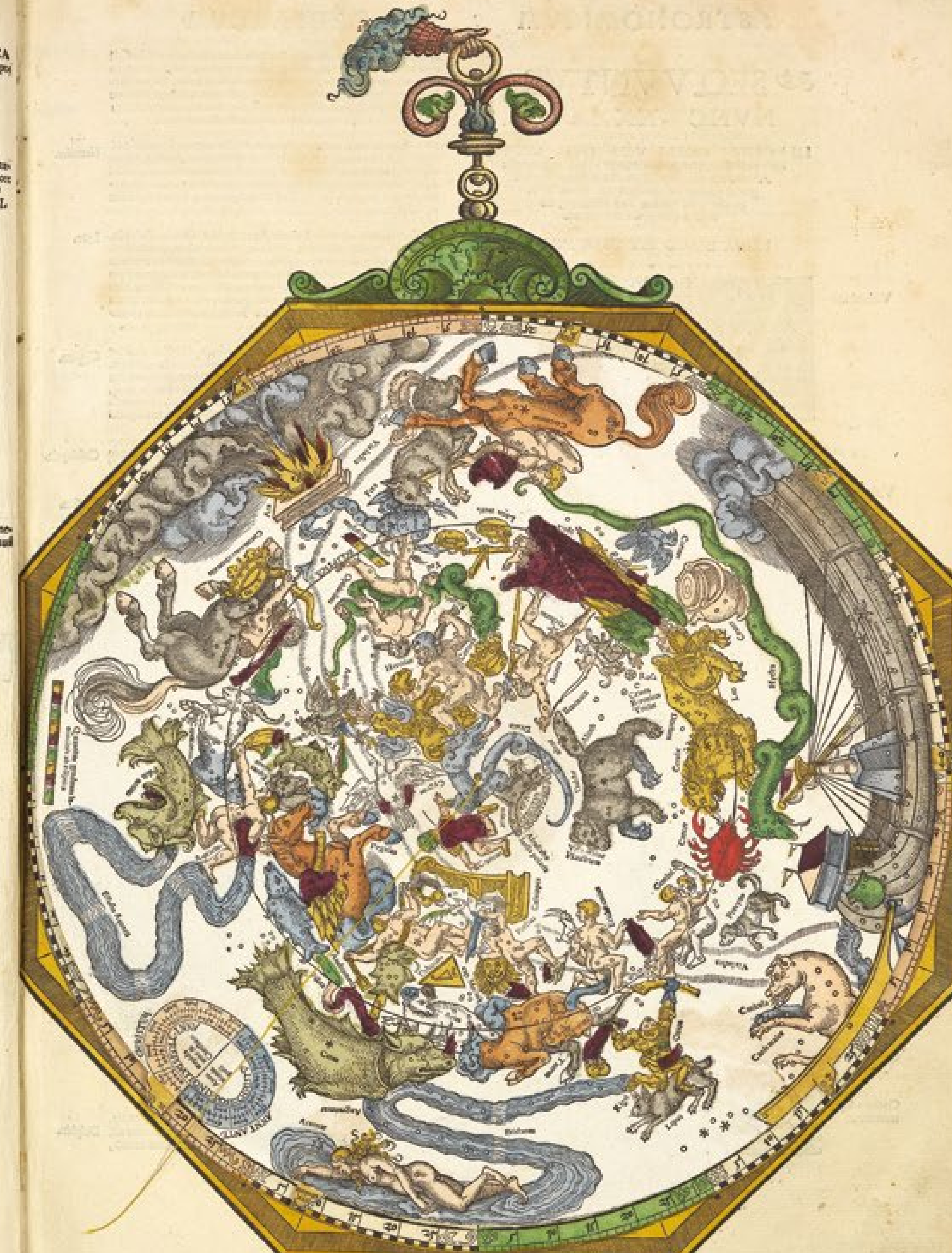
¶Aliud Exemplum FERDINANDVS Romanorum Bohe: & Vngariæ Rex, anno Christi. 1503. in hunc orbem prodiit. 10. Martii 8. hora 47. m. ante meridiem. Ad quem, numerum, figura locata, coronæ septentrionalis stella. 4. gr. 15. m. ♏. tenere reperitur. Aux ☉. 3. gr. 32 m. ♋. ♄ 13. gr. 10. m. ♐. ♃. 23. gr. 24. m. ♍. ♂. 14. gr. 59. m. ♌. ♀ 0. gr. 20 m. ♏.

¶Latitudines autem si requiris, id est, distantias ab ecliptica cuiusdem stellę, duc filum per ipsam, & quo in loco ecliptica secatur, illic alterum pedem circini fige, altero extenso in corpus stellæ, illam eãdem circini extensionem deinde examina in scala latitudinis, iuxta caudam Sagittarii deliniatam, in qua manifeste cognosces, quanta sit latitudo. Si stella ab ecliptica versus centrum, in septentrionali, si versus limbũ ab ecliptica declinauerit, in meridionali latitudine esse dicetur. Neque uero scitu est iniucundius, cui stellarum fixarum planeta aliquis assistat, eamue obtegat. Qua de re documentum illud habe. FERDINANDI Regis natiuitate Luna primum gradum. 23. m. ♍. tenuit, latitudo eius ab ecliptica. 3. gr. 24. m. Septentrionalis erat. Illã in scala, quæ poenes caudam Scorpii est, ab ecliptica incipiens, Aram uersus, 3. gr. 24. m. numeres, perque ea filum trahes, margaritamque super gradũ & m. imponas, filum deinque una cum margarita immobili super. 3. gradum. 23. ♌, ubi Luna secundum longitudinem erat, dirigas, tum margarita inter. 37 & 38 stellas ♌, quæ sunt in uentre ♌ locum demonstrat, quo ☽ tempore natiuitatis regiæ, visa fuit. Propter diuersitatem vero aspectus eius, duas illas stellas in uentre ♌ positas. 37. videlicet, & 38. luna obscurauit seu obtegit.

Operepreccium facturus es hoc loco, si annorum, qui sunt ante Christum rationem habeas, ad quos stellas fixas & planetarum auges deducere uis, quam rem, ut clarius intelligas, exemplo proponam.

Auges planetarum Diluuii tempore.

¶Auges & stellas fixas ad Diluuii tempus inquisiturus, quispiam si sit. Primo in tabula temporum Noë Diluuium. 3103. anno. 319. diebus ante Christum euenisse discet, mox à Cruce ✚ inchoans contra signorum successum, 3103. annos, diesque uerisimili coniectura, qui quodammodo annum efficiunt, queerat, quæsitis indicem X, qui gr. 33. gr. 6. m. 20, mõstrabit, super imponet. Deinceps uero totidem anni in paruo circulo (qui circulus trepidationis motus octauæ sphæræ nominatur) extimo numero requiret, & per requisita filum dictum, in zodiaco gr. 33. gr. 3. m. 8. quæ sunt aux communis, indicabit, super quod filum, si denuo ostensorem Y. posueris, rotam verissime locaueris. Si uero libuerit poteris orbem alio modo quoque præparare (hoc autem ideo dico, ut uideas in omnibus instrumentis theoricarum, non hac vna uia, sed etiã adhuc altera nos uti posse) Est autem huiusmodi. Principio Diluuii ætatem è tabula scribe, quæ 3103. annorum 319 dierum est. Proximus nunc centenarius, qui est, 3200. assumendus, totque anni à cruce ✚ incipienti retrorsum numerandi, quibus inuentis index X aptandus, qui mox in Zodiaco 33 gr. 6. gr. 20. m. ostendit. Post in trepidationis circulo, numero exteriori, ante Christum uidelicet, 3200, quærantur, punctumque notetur, cui B nomen erit. Ab hinc 3103 anni 319. dies, à 3200. annis subtrahantur, remanent. 96. anni. 47. dies, qui. 16. Februarii lucem contingunt. Iam denuo à 3200. annis retro & contra signorum ordinem annos residuos, 96. (diebus ob instrumenti paruitatem neglectis) numera, quib. rursum indicem X adiunge, qui in limbo Zodiaci sig. 33. gr. 7. m. 32. indicabit. Deinceps punctum B rursus in circulo trepidationis, antea iuxta 3200. notatũ, videatur, à quo iterum retro. 96. anni summantur (dies enim haberi non possunt) per 96. annum ducatur filum ex centro, quod augem communem, in zodiaco 33 sig. 4. gr. 8 m. refert. Quib. index Y rursũ applicabit. Q facto, rotula ad diẽ Diluuii omnino verificata erit, qui fuit. 16. Februarii & dies Iouis, Q tempore litera dominicalis A esse debuit. Aux Solis. 15. gr. 34. m. ♉. Aux. ♄ 27. gr. 32. m. ♎. Aux ♃. 7. gr. 45. m. ♋. Aux ♂ in. 29. gr. 10. min. ♊. Aux ☿ in. 34. grad. 48. min ♍. Quæ auges omnes, cum ostensoribus suis patent, simulac prima communis scilicet aux locum suum verè tenuerit. Stellarum fixarum loca vera, si filum per earum centra, seu medietates extenderis, in Zodiaco videbis. Hoc autem omnino videbatur esse necessarium, cur admonerem.



The book that "sealed the fate of 'America' as the name of the New World"

7 MÜNSTER, Sebastian

Cosmographiae universalis Lib. VI. Auctore Sebast. Munstero.

Publication
Basel, Henrichum Petri, 1550.

Description
Folio (328 by 210mm), 623pp., incorporating a total of 120 woodcut maps and views, 34 of which are double-page and three of which are folding panoramas, minor marginal loss to one leaf, large closed tear to panorama of Vienna, some leaves with closed tears, contemporary French calf over wooden boards, gold tooled strapwork border, painted black, elaborate central foliate piece, lavishly gilt, spine in seven compartments separated by raised bands, gilt ruled, each compartment containing a gilt floral motif, a.e.g., gauffered edges.

Collation: 2, 3, 4, [2], *1-6, a-z8, A-B8, C6, D2, E8,F6, G4, H2, I4, K2, L4, M2, N-O8, P6, Q2, R2, S4, T2, V2, X4, Y4, Z6, Aa-Bb2, Cc8, Dd2, Ee-Gg8, Hh4, Ii8, Kk6, Ll2, Mm4, Nn-Oo8, Pp4, Qq, Rr4, Ss2, Tt4, Vu6, Xx4, Yy2, Zz8, AA-BB2, CC8, DD4, EE8, FF8, GG4, HH-KK8, LL4, MM-QQ8, RR4, SS-ZZ8, Aaa-Fff8, Ggg-Hhh6.

References
Philip D. Burden, The Mapping of North America: A List of Printed Maps, 1511-1670 (Rickmansworth: Raleigh, 1996); K.H. Burmeister, Sebastian Münster: Eine Bibliographie (Wiesbaden, 1964); Mickwitz, Nordenskiöld, 153; H.M. Nixon, Bookbindings from the collection of Jean Grolier' (London: British Museum, 1965); R. Oehme, introduction to Cosmographiae universalis: facsimile of the 1550 edition of Münster's Cosmographia (Amsterdam: Theatrum Orbis Terrarum, 1968); H.L. Ruland, "A survey of the double page maps in thirty five editions of the Cosmographia Universalis 1544-1628 of Sebastian Münster and his editions of Ptolemy's Geographia 1540-1552", Imago Mundi 16 (1962), 84-97; Sabin 51390; Shirley, British Library, T.MUN-1h.

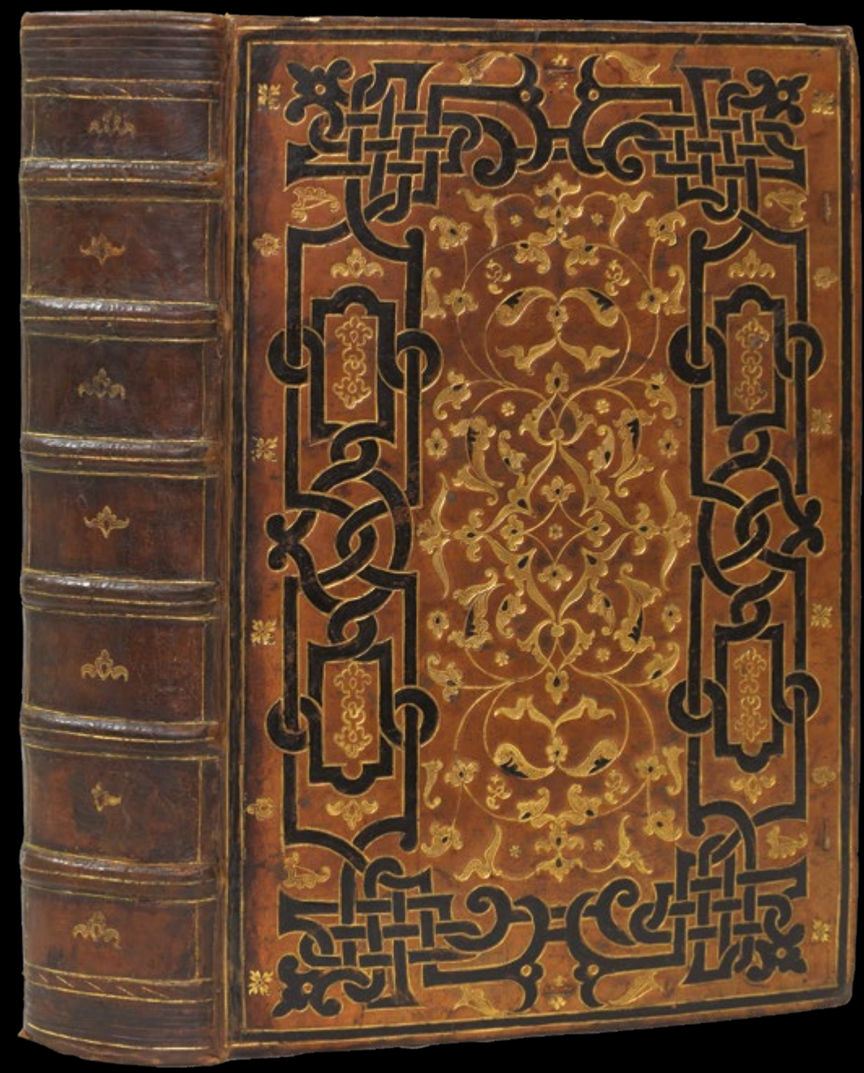
A magnificent example of Sebastian Münster's 'Cosmographia', a work containing a trio of cartographic innovations: the first separate printed map of the Western Hemisphere; the first "set" of maps of the four continents; and the first printed map to name the Pacific Ocean.

The cartography

The 'Cosmographia' contains the first set of maps of the four continents, which Münster produced for his edition of Ptolemy's 'Geographia' in 1540. While individual continents had been mapped in print before 1540 (Africa in Montalboddo's 'Itinerarium Portugallesium', 1508; Europe by Waldseemüller, 1511; America by Stobniza, 1512; Asia in Münster's edition of Solinus, 1538), Münster was the first to publish a coherent set. They are famous for their decorative elements: Magellan's ship, the 'Victoria', is visible on the map of the Americas; the "monoculi" (or cyclops) on the map of Africa; the shipwreck of St Paul on the second map of Africa; and the elephant on the map of Ceylon. The map of Europe is, unusually, oriented to the south.

Coming half a century after Columbus's initial landfall in the Indies, Münster's map of America is the first separate printed map of the Western Hemisphere. Two decades after Magellan's circumnavigation, it is also the first printed map (along with Münster's world map) to refer to Magellan's great ocean by the name he had christened it: Mare Pacificum. Also of note is the strange constriction of the North American land mass towards the top of the continent. This is the first printed result of the confusion resulting from Giovanni da Verrazano's report of the sighting of a ship in a body of water on the other side of an isthmus. Verrazano's isthmus was, in reality, nothing more than the Outer Banks between Cape Lookout and Cape Henry; his Oriental Sea, which he thought would lead to the blessed shores of Cathay (China) was, in fact, the Pamlico and Albermarle Sounds. In the northeast, Münster has labelled Francisca (Canada), named by Verrazano after Francis I, shortly before his return to Europe.

Münster has inserted a Spanish and a Portuguese standard in the Atlantic Ocean, intended to reflect the division of the unknown world in two by the Papal Treaty of Tordesillas (1494). Japan ("Zipangri") appears as a large rectangular island off the "California" coast. The map was created two or three years before Europeans first landed there; it was known only from the writings of Marco Polo. Marco Polo was also the source for Münster's belief in the complex of 7,448 islands between Japan and the Asian mainland. As with Japan, Polo himself never ventured there, but by their number and the description of them given to Polo by his hosts, it is likely that these islands were the Philippines. By Münster's time, direct European contact with the Philippines had been made, both by Magellan (who died there)



and almost certainly by eastward-bound Portuguese explorers before him. Münster included the real Philippine island of Puloan on his map of Asia. It was both this exaggerated archipelago and European underestimation of the Pacific's true size that pushed Japan so close to North America on Münster's map. A large illustration of Magellan's ship and the so-called Unfortunate Islands are shown below Japan, named because Magellan's expedition was unable to anchor at either of them on their difficult journey home. Their luckless path across the Pacific bypassed, though barely, islands of the Polynesian groups; the islands' resources would have spared them scurvy and starvation. Disease, violence, and malnutrition took the lives of all but 18 of the 277 members of the expedition. The map of Africa also contains many curious features: a one-eyed giant seated over Nigeria and Cameroon, representing the mythical tribe of the "monoculi"; a dense forest located in today's Sahara Desert; and an elephant filling southern Africa. The Niger River begins and ends in lakes. The source of the Nile lies in two lakes fed by waters from the fabled Mountains of the Moon, graphically presented as small mounds. Several kingdoms are noted, including that of the legendary Prester John, as well as "Meroë", the mythical tombs of the Nubian kings. Few coastal towns are shown, and there is no sign of the vast island of Madagascar. A simplified caravel, similar to those used by the Portuguese (and Columbus), sails off the southern coast. One of the intriguing aspects of this map is the loop of the Senegal River, which is shown entering the ocean in today's Gulf of Guinea. Actually, this is the true route of the Niger River, but that fact would not be confirmed until the Lander brothers' expedition in 1830. Strangely, this loop disappeared from subsequent maps of Africa for the following two hundred years.

A further interesting feature of the work is the plate of monsters of both land and sea, taken from Olaus Magnus's 'Carta Marina' of 1539, with abundant tusks, horns and twin-spouts. One vignette shows a galleon trying to outrun a monster by throwing their cargo overboard, while one sailor takes sight with a musket. Ortelius adapted many of these monsters for use on his map of Iceland in 1587.

The mapmaker

Sebastian Münster (1488-1552) was a cosmographer, humanist, theologian, and linguist. He was famous in his own age as a Hebraist, composing a grammar and a list of Hebrew, Latin, and Greek synonyms which were used widely by contemporary scholars. After entering the Franciscan order around 1506, Münster studied in Tübingen and taught in Basel and Heidelberg before leaving the order and moving to Basel in 1529, where he took up the chair in Hebrew. Whilst in Basel, Münster indulged in his other great love: that of cartography. The love affair

had begun some years earlier in Tübingen under the tutelage of Johann Stöffler. Münster's notebook of the time contains some 43 manuscript maps, most of which were based upon others' work, except for a map of the Rhine from Basel to Neuss.

Münster would produce his first map in a printed broadsheet of 1525. The map, which covers Germany, also came with an explanatory text (only extant in the second edition of 1528), which lays out Münster's vision for a new great survey of Germany. He readily conceded that the job was too great for one man and so called upon fellow academics to cooperate and supply detailed maps of and texts about their respective areas, with Münster working as the great synthesiser. Although the project would never get off the ground, much of its methodology and material would be used, with great success, in his 'Cosmographia'.

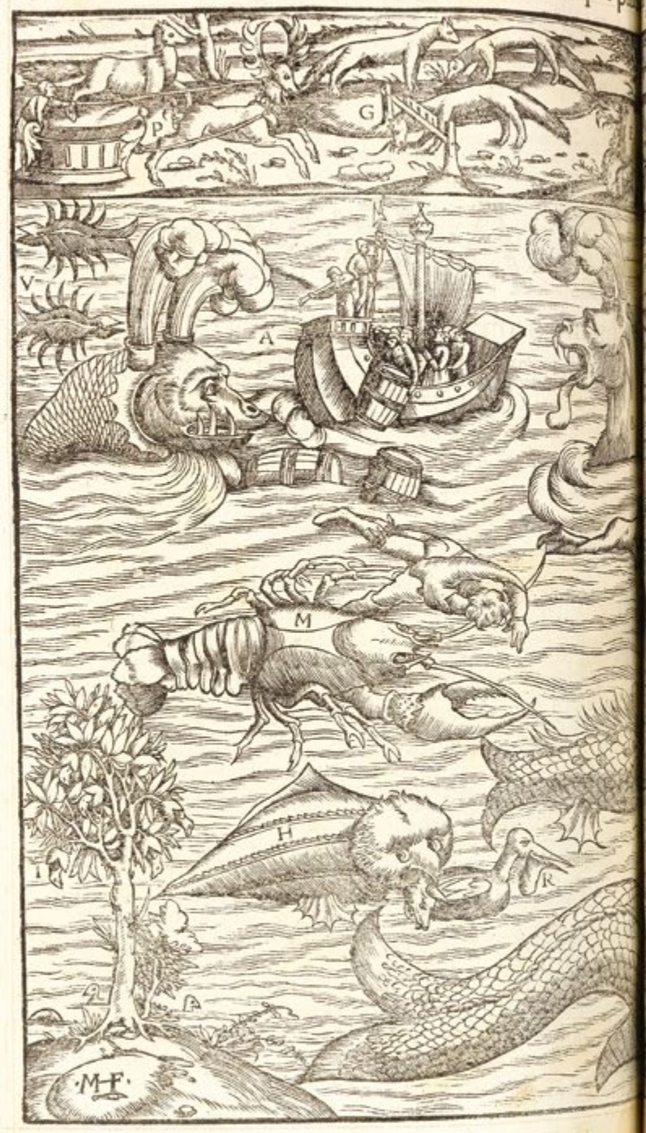
In 1544, Münster produced his greatest work, the 'Cosmographia'. It was the culmination of a lifetime's study, in which he distilled the geographical information he had gathered over the past 30 years. Münster organised the work in a series of periegeses, or geographical travels. He began by describing an area's geography, history, ethnography, flora and fauna. He would, famously, then relate tales of strange peoples, fabulous plants, and wondrous events. The work would prove to be so popular that some 40 editions were published between 1544 and 1628, with the number of maps expanding from 26 in the 1544 edition to 262 by 1628. Its huge popularity would not only "seal the fate of America as the name of the New World" (Burden), but would form the basis of general knowledge of many other parts of the world as well.

The binding

The shape of some of the tools used can be matched with those of the royal binder Claude Picques (Nixon). Many of the tools are hatched and Mirjam Foot has noted in her introduction to the third volume of the catalogue of the Henry Davis Gift that some of the hatched tools formerly attributed to Picques may now be attributed to Gommar Estienne, his predecessor. It seems likely, therefore, that it was made or finished by a French royal binder, who also worked on Grolier books.

The present copy is a fine example of the fifth Latin edition of this work, complete with all maps and views, in a spectacular binding. This edition was the last one published fully under the supervision of Münster before his death in 1552 from the plague. We can only trace three examples of this edition at auction in the last 75 years, at least one of which was incomplete.

Monſtra marina & terreſtria, quæ pa



partibus aquilonis inueniuntur.

8 **BASSANTIN, Jacques**

Astronomique discourse par Jaques Bassantin Escossois.

Publication
Lyon, Par Jan de Tournes, 1557.

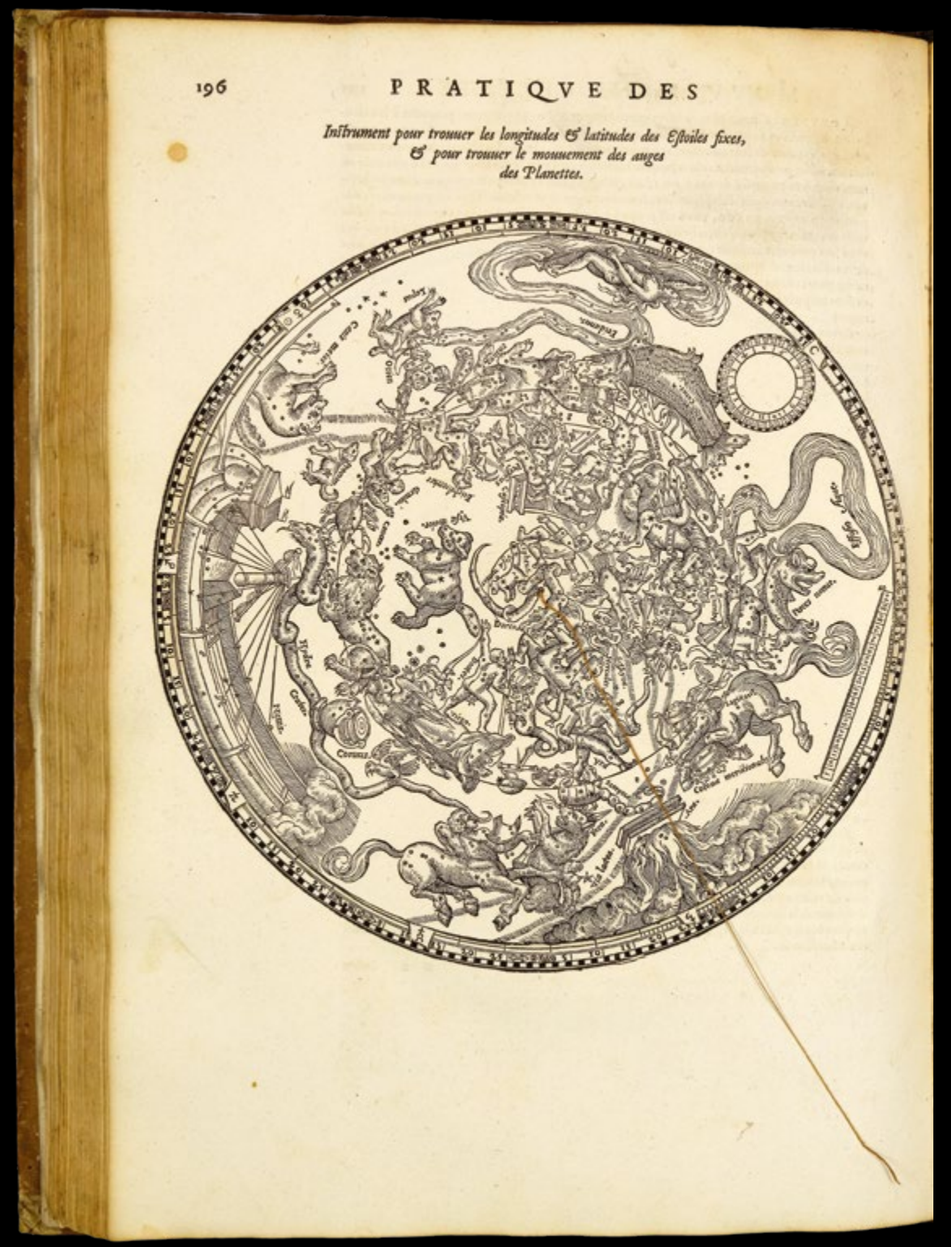
Description
Folio (440 by 310mm), 285 pp., (1)p., (1) f., with 175 woodcut in text (including numerous diagrams), 14 of which are volvelles (13 full-page, one half-page) composed of 36 total parts, ownership inscription on title-page, negligible water-staining in upper inner margin of quires a to e and h to p, minor corner loss at p. 29, minor marginal loss at p. 170, repaired marginal tear at p. 230, very slight occasional staining, many diagram indicator strings preserved, quarter bound in late eighteenth - or early nineteenth - century brown calf and brown paste boards, spine in seven compartments, gold-tooled red morocco title piece laid to spine, some light rubbing and edge wear to spine and boards.

References
Brunet I, 692; Horblit 89; Mortimer, French, no.47; Deborah Jean Warner, The Sky Explored: Celestial Cartography, 1500-1800 (Amsterdam, New York: Liss, 1979), 17; George F. Warner, The Library of James VI 1573-83 (Edinburgh: Constable, 1893), lix.

A very rare complete first edition of James Bassantin's copiously illustrated, large-format compendium on calculating planetary positions. The 'Astronomique discourse' was based on Petrus Apianus' 1540 work 'Astronomicum Caesareum' (see item 6). Like that famous work, it includes among its 175 woodcuts many beautiful and intricate volvelles. There are a total of 14 volvelles, 13 of which are full-page, and this copy contains all 36 moving parts. The discs of these paper instruments perform many functions conventionally associated with the astrolabe, such as simulating the movement of planets, reckoning time, and assisting with the practical matters of surveying and astrology. "A Scottish astronomer of considerable reputation," Bassantin cut no corners in the production of his work: "The size of this volume and the extent of its illustration and ornamentation make this an unusually fine example of the attention given to the printing of scientific works at this period" (Mortimer).

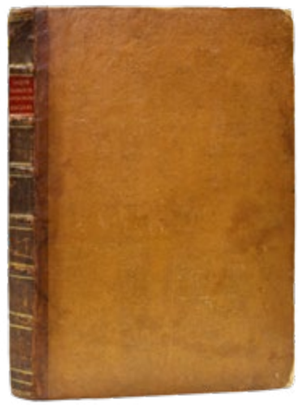
The text is arranged in several 'treatises' of increasing complexity, beginning with information about understanding sine tables and trigonometry, moving to the application of these principles to the terrestrial and celestial spheres and to the interaction of planets, and closing with a lengthy section concerning practical problems of the heavens. The final section contains the majority of the volvelles. While Bassantin gives the reader much information in textual and tabular formats, his illustrations provide the bulk of the didactic force and do so without sacrificing beauty (particularly in the armillary sphere supported on the back of Atlas, the handsome volvelle of the constellations of the northern hemisphere, the glowering moon-faces in discussions of eclipses, and the fine metalwork form of the paper instruments).

James Bassantin (c. 1500-1568) studied at the University of Glasgow and seems to have taken pride in his Scottish heritage even as his work took him to the continent. He identifies himself as "Escossois" on this work's title-page and lists eight Scottish towns in his tables of longitude and latitude. Bassantin eventually settled in France as a teacher of mathematics, first at Lyon and then in Paris. He spent time in the French court, and dedicated his 'Astronomique discourse' to Catherine de' Medici, Queen of France. His revised edition of Jacques Foucard's 'Paraphrase de l'astrolabe' (1555) shows him to have been familiar with the most recent advances in German and Italian mathematics and astronomy. Bassantin returned to Scotland in 1562 and, en route, predicted that there would be "captivity and utter wreck" for Mary, Queen of Scots, recently widowed and returned from France, and that the crowns of England and Scotland would eventually combine, bringing an end to the House of Tudor (Melville). Bassantin's astrological acumen seems to have appealed to the superstitious James VI of Scotland (James I of England and Ireland) who kept in his library a copy of the 'Astronomique discourse' inherited from the collection of Mary (Warner, Library).



The present copy carries the ownership inscription of Jean Perrin (1613-95), doctor to the dukes of Lorraine, who served Marguerite de Lorraine, the second wife of Gaston d'Orléans (1608-60): "J. Perrin, doctor physicus et medicus … D. Ducissae Aureliacae, 1641".

The correct collation of the volvelle parts to this 1557 first edition has long been a matter of debate among bibliographers, with Mortimer calling for 36, although most otherwise well-preserved copies retain between 33 and 35 parts. The present volume is one of only a very few known to contain all 36 parts.



Mapping the myths

9 **LAZIUS, Wolfgang**

Comment[arium] rerum Graecarum libri II In quibus tam Helladis quam Peloponnesi, quae in lucem antea non venerunt, explicantur.

Publication
[Vienna?], [Raphael Hoffhalter?], 1558.

Description
Small folio (370 by 255mm), woodblock title in red and black, three woodcut plates, note to the reader within a manuscript frame, two large folding etched maps, the first map printed on three irregularly sized plates, the second on one plate with pasted border to upper and left margin, both with etched title cartouche with letterpress text pasted to verso, margins of title lightly soiled, first map with discolouration from the pasted slip, light worming in inner gutter of a few leaves at beginning, a few margins lightly waterstained, last gathering browned, light spotting, contemporary limp vellum, manuscript title on spine, a few light stains, remnants of ties.

References
Graesse IV, 130; Karrow 49/G.

Wolfgang Lazius (1514-1565) was an Austrian scholar who worked in cartography, history, and science. He became a professor in the medical faculty at the University of Vienna, where he was a student, and later became the curator of the collections of the Holy Roman Empire and official historian to Emperor Ferdinand I. He is thought to be the subject of Giuseppe Arcimboldo's famous painting, 'The Librarian'. His varied interests are shown by the title-page, where the border features his books on Austrian history and other works. Lazius states in the dedication that he drew both of the maps himself. They are highly attractive, and contain a wealth of detail.

The first map, in book I, covers all of Greece including the Peloponnese and coast of Asia Minor, drawing on the works of Ptolemy. It has a large and elaborate title cartouche, surrounded by classical deities representing the areas in Greece to which they are linked. On either side are the figures of Hercules (Thebes) and Hermes (Kyllini), with four portrait medallions showing Minerva (Attica, or Athens), Jupiter (Olympus), Ceres, and Neptune (Corinth). The map's border is composed of medallions with the names of Greek cities and small pieces of information, separated by region. The map itself is crammed with detail: place names, snippets of history, and small shields or medallions referencing Greek mythology. Ariadne reclines near the island of Naxos, waiting to become the bride of Dionysus after being abandoned by Theseus; the crippled Philoctetes appears near the island of Lemnos, left there with an injured leg by the Greek army on their way to Troy.

The second map, in book II, only covers the Peloponnese, based on Italian sources. It has a similar border of medallions with geographical information on the right hand side, with a pasted border of shields containing the names and biographies of famous rulers of Elis, the site of the first Olympic games. A charming strip of etchings showing the Labours of Hercules has been pasted at the upper edge (six of his labours were completed in the area shown). Theseus kills the Minotaur next to a tiny representation of the labyrinth at the lower edge; to his left, Paris sails towards Troy, his arm around the stolen Helen; the combined Greek forces sail after them to recover her. To the north we find Perseus with the head of Medusa on his shield, and above him Poseidon and Athena fight to become the patron deity of Athens.

There is no mention of a place of publication or publisher in the work. It has been suggested that it was published by Andreas Wechel in Frankfurt am Main but that seems rather unlikely as Wechel was still printing in Paris until 1572. Graesse lists Vienna as the place of publication which is supported by Karrow, who lists Raphael Hoffhalter as the publisher.

The first edition is the only one to contain maps, and is thus very scarce. There are institutional copies in the Bayerische Staatsbibliothek and Bibliothèque Nationale.

Provenance
Bibliothek Oberherrlingen, bookplate and manuscript inscription at foot of title.

The first printed star atlas

10 PICCOLOMINI, Alessandro

De la Sfera del Mondo. [and] De Le Stelle Fisse.

Publication
Venice, Varisco & Paganini, [1564].

Description
Three parts in one volume, quarto (200 by 145mm), 47 full-page woodcut star maps, minor dampstaining to the last few charts, contemporary limp vellum, gilt, gauffered edges, a.e.g., remains of original ties, title in manuscript to spine.

Collation: 47 full-page woodcut star maps, [12], 252, 32, 25-93 pages, [3] leaves.

References
Thomas Hockey et al, Biographical Encyclopedia of Astronomers, (New York: Springer, 2007), 904-5; Owen Gingerich, "Piccolomini's star atlas", Sky and Telescope 62 (1981): 532-4; John North, Cosmos: An Illustrated History of Astronomy and Cosmology (Chicago: University of Chicago Press, 2008), 277; R. Suter, "The Scientific Work of Alessandro Piccolomini," Isis 60 (1969): 210-22; Deborah Warner, The Sky Explored: Celestial Cartography 1500-1800, (New York: Liss, 1979), 200.

The eighth Italian edition of Alessandro Piccolomini's astronomical text and star atlas. Piccolomini (1508-1579) was a humanist from a prominent noble and scholarly Sienese family. Two of his ancestors were popes. He produced translations of classical texts, poetry, and commentaries, as well as his astronomical works, 'De La Sfera del Mondo' and 'De Le Stelle Fisse'. Both are works of mathematical astronomy, rather than observation.

'De La Sfera del Mondo' deals with the structure of the universe. In it, Piccolomini defends the Ptolemaic system, with an immobile earth at the centre of the universe. His opinion would only change nearly two decades later, when new observations of planetary movements forced him to reframe the Ptolemaic model as a useful tool for the astronomer rather than gospel.

'De Le Stelle Fisse' was the first printed star atlas and "the first handbook for stargazers" (Gingerich), identifying each of the 48 Ptolemaic constellations. Piccolomini was the first to use a lettering system to identify the prominent stars in each constellation, a practice later copied by the German astrologer Johann Bayer, whose work forms the basis of the system of star nomenclature we use today. Piccolomini used Ptolemy's system of star magnitudes, although he reduced it to four rather than five, and assigned different symbols to each one. The charts show only the shape of the constellations, rather than overlaying them with a pictorial map. The constellations are often not oriented to the north, but shown in their most recognisable position, making it easy for the amateur astronomer using the book. Any myths associated with the constellation are added in the accompanying text.

Unusually for scientific works of the time, they are both written in Italian rather than Latin. While at university in Padua, Piccolomini had been a member of the Society of Infiammati, which strove to promote the vernacular, and had helped to found the Society of Intronati in Siena with a similar aim. It is also exceptional in that it is dedicated to a woman, Laodomia Forteguerri, whereas women were more commonly the dedicatees of poetry or tracts on feminine virtues. Forteguerri, however, was herself exceptional: a Sapphic poet who led a team of women to help build defences when Siena was besieged by Charles V. Piccolomini admired her sonnets and delivered a lecture on them to the Infiammati, the first secular Italian female poet to have her work discussed in an academic setting. He supposedly dedicated 'De la Sfera del Mondo' and 'De Le Stelle Fisse' to her after she complained that she could not study astronomy because she was a woman. It is certainly true that traditional academic texts would be barred to anyone without a classical education (which most women did not have), which adds weight to his decision to publish in the vernacular to reach a wider audience.

Meet the Fuggers

11 **BRAUN, Georg and Franz HOGENBERG**

Civitates Orbis Terrarum.

Publication
Cologne, 1572-1575.

Description
Folio (400 by 280mm), Latin text, two volumes bound in one, two engraved title pages and 117 double-page engraved maps, plans, and bird's-eye views, all plates and initials with fine original hand-colour heightened in gold and silver, coats-of-arms of the city of Augsburg pasted to upper pastedown, maps in book one bound in wrong order, map of London in its second state misbound into book 2, remains of library stamp to title-page, small area of loss to lower right portion of title-page skilfully repaired, water staining to lower part of first few leaves, old tears to a map of Malaga and **2, skilfully repaired, a few other minor tears, original red morocco, gilt fillet boards, gilt fleur-de-lys corner pieces, elaborate gilt foliate panels, gilt corner arabesques, central lozenge of the coats-of-arms of Philipp Eduard Fugger to upper and lower board, spine in seven compartments, each compartment containing a gilt fleur-de-lys, separated by raised bands, head and foot skilfully repaired, a.e.g., gauffered edges, painted with exotic birds and the coats-of-arms of Philipp Eduard Fugger.

References
Mark Häberlein, The Fuggers of Augsburg: Pursing Wealth and Honour in Renaissance Germany (Virginia: University of Virginia Press, 2012); Koeman, Atlantes Neerlandici, vol.2, 10; Van der Krogt IV 41:0 and 41:1.2M, London BL I; Donald F. Lach, A Century of Wonder, vol. II of Asia in the Making of Europe, (Chicago: University of Chicago Press, 2010), book 1, 28; Phillips 59; Shirley, British Library T.BRA; R.A. Skelton, introduction to Civitates Orbis Terrarum: Facsimile of the Cologne Edition, by Georg Braun and Frans Hogenberg (Amsterdam: Theatrum Orbis Terrarum, 1965).

A sumptuous example of the first two books of Braun and Hogenberg's landmark work – "the earliest systematic city atlas" (Koeman) – with both volumes in their rare first editions, finely coloured, and lavishly heightened in gold and silver throughout. The red morocco binding bears the coats-of-arms of Philipp Eduard Fugger, a member of one of the richest dynasties in sixteenth century Europe.

The 'Civitates' was published in Cologne in a series of six volumes between 1572 and 1617. The ambitious project aimed, for the first time, to offer a systematic account of all the major settlements and cities of the then-known world. They appear in a realistic, faithfully represented, and recognisable style, using a combination of two-dimensional plans, three-dimensional views, and bird's-eye perspectives. The subsequent atlas proved hugely popular with the new urban mercantile elite, who were hungry for information on the far flung cities of the world.

In order to obtain accurate representations of the numerous cities illustrated in the 'Civitates', Georg Braun (1541-1622), canon of Cologne Cathedral, established a network of correspondents and artists across Europe who contributed drawings to the project. These included Georg Hoefnagel, Heinrich Rantzau, Jacob van Deventer, and Abraham Ortelius, among others. In fact, Hoefnagel and Ortelius were close friends, travelling extensively throughout Europe, and are often depicted in the foreground of the views, engraved by Franz Hogenberg and Simon Novellanus. Hogenberg was a close friend of both Gerard Mercator and Abraham Ortelius, and was employed by Ortelius to engrave maps for his 'Theatrum'.

The plates are brought alive by their depiction of individual citizens from each town in the foreground, from the rich merchants of London and the wild Cossacks of Moscow, to the refined townsfolk of Maastricht. However, Braun had another motive for adding figures: he writes in his introduction to the first book, perhaps optimistically, that because of this his plans would not be scrutinized for military secrets by the Turks, as their religion forbade them from looking at representations of the human form.

The Fuggers

No expense has been spared in the work's production, with each plate having a rarely-seen painterly quality. The use of gold is extensive and lavish, with the minarets in Cairo, Montezuma II's sedan chair in Cusco, the hemlines of the fashionable merchants of London, and even the shading of the trees all picked out in liquid gold. Such lavish decoration and attention to detail is to be expected from a work that would grace the shelves of Philipp Fugger's library:

"… the Fugger family were among the largest book collectors in central Europe of the sixteenth century. Holdings from the Fuggers's collections are now among the treasured possessions of the Bavarian State Library in Munich, the Austrian National Library in Vienna, and the Vatican Library in Rome … The Fugger libraries were investments in education and learning; they represent the progressive turn of the family, which had become wealthy in commerce, towards learned and literary interests: and they helped to prepare coming generations for the careers at princely courts, as well as in municipal and territorial administration" (Haberlein).

It was Philipp's grandfather Raymond Fugger – a prominent patron of Petrus Apianus (see items 3 & 6) – who was the first family member to assemble a notable library. Philipp's father, Georg, was also a keen bibliophile, with works on astronomy, science, and mathematics. He acquired the library of the renowned polymath Johannes Schöner while his uncle, Johann Jackob Fugger, also bought the library of physician and humanist Hartmann Schedel. Philipp's father passed away in 1563, leaving his library to his eldest son, with his express wish – stipulated in his will – that the library not be broken up. Philipp proved to be a fine custodian and added greatly to the library's holdings; on his death in 1618 it contained 15,000 volumes. In 1655, the whole collection was sold to the court library in Vienna. As well as being a great bibliophile, Philipp was also a merchant with a voracious appetite for news and current affairs, who, together with his brother Octavian, amassed a huge collection of manuscript newsletters – known collectively as the 'Fuggerzeitungen'. They were akin to modern day newspapers, and were predominantly published in the main civic centres of Europe. They included information not just on politics and military matters, but also on the economy, courtly ceremonies, and religion. The collection, which covers the period 1568-1605, is now housed in the Austrian National Library in Vienna, and contains 16,021 individual newsletters.

With his thirst for contemporary news and reportage, Philipp must have relished acquiring the 'Civitates', a work that would enable him to flesh out the information contained in the 'Fuggerzeitungen'. All the major European capitals are illustrated in the present work, including Rome, London, Paris, Antwerp, Venice, and, of course, Philipp's local town of Augsburg, with the text on the plan making glowing reference to the Fugger family.

Philipp must have been one of the first to take delivery of Book One, as all the maps bar London appear in the first state. The map of London, which is here in the second state, is bound at the beginning of Book Two. This particular arrangement is, according to Koeman, the earliest known gathering of the atlas, and he records only three institutional examples thus bound: the British Library, the Bibliothèque Nationale de France, and the Studienbibliothek Dillingen. All the maps

LONDINVM FER NSIMI AN
GLIAE REGNI TROPOLIS
THE TOWRE
Hæc est regia illa totius Angliæ ciuitas LONDINVM, ad fluuium Thamesim sita, Cæsari, vt plures existimãt, Trinobantum nuncupata, multarum gentium cõmertio nobilitata, excelsis domib. ornata et plus, excelsis arcibus, claris ingenijs, viris omnium artium doctrinarumq. genere præstantibus, percelebris. Deniq. omnium rerum copia, atque opum excellentia mirabilis. Inuehit in eam totius orbis opes ipse Thamesis, mercarijs nauibus per sexaginta millia passuum, ad vrbem prealto alueo nauigabilis.
STILLIARDS) Hansa, Gothicæ dicta, conuentum, vel congregationem sonans, multarum ciuitatum est confœderata Societas, tum ob præstita Regibus ac Ducib. beneficia; tum ob securam terra, mariq. mercaturæ tractationem, tum denique, ad tranquillam Rerumpub. pacem, & ad modestam adolescentum institutionem conseruandam, instituta: plurimor. Regum, ac Principum, maxime Angliæ, Galliæ, Daniæ, ac Magnæ Moscouiæ, nec non Flandriæ, ac Brabantiæ Du cum priuilegijs, ac immunitatib. exornata fuit. Habet ea quatuor Emporia, (contores quidam vocant, in quibus ciuitatum negotiatores resident, suasque mercatus exercent. Hor. alterum hic Londini, domestica oeconomia viuit, habens domum Gildehallã Teutonicã, quã vulgo Stilhard nũcupat.


AMSTELREDAMVM, nobile Inferioris Germaniæ oppidum, ad
recipiendos, ex omnib. mundi partibus, mercatores, recenter natum, genus
hominum incolit mercimonijs deditum quæ quidem, tum blanda populi comi
tate, ac sedula diligentiaq; industria; tum portus comoditate permagna, vsq; adeo
incrementa sumpserunt, vt vix vllum mercaturæ genus excogitari possit, quod hic
non exerceatur. Hinc fit, vt opum lucrique cupiditas, ex remotissimis etiam
terris, negotiatores, in hanc ciuitatẽ inuitet, qui varia hinc bona, & maximè,
rem frumentariã, in Brabantiam, cæteraq; longè dissita, totius vniuersi loca,
transferentes; ingentes ex eiuscemodi commertio opes consequuntur.
DEN AEM STEL

in Book Two are also in their first state, with Koeman listing only four institutional examples: two copies at the Staats- und Stadtbibliothek Augsburg, one at the Lippische Landsbibliothek Detmold, and one at the Københavns Biblioteker.

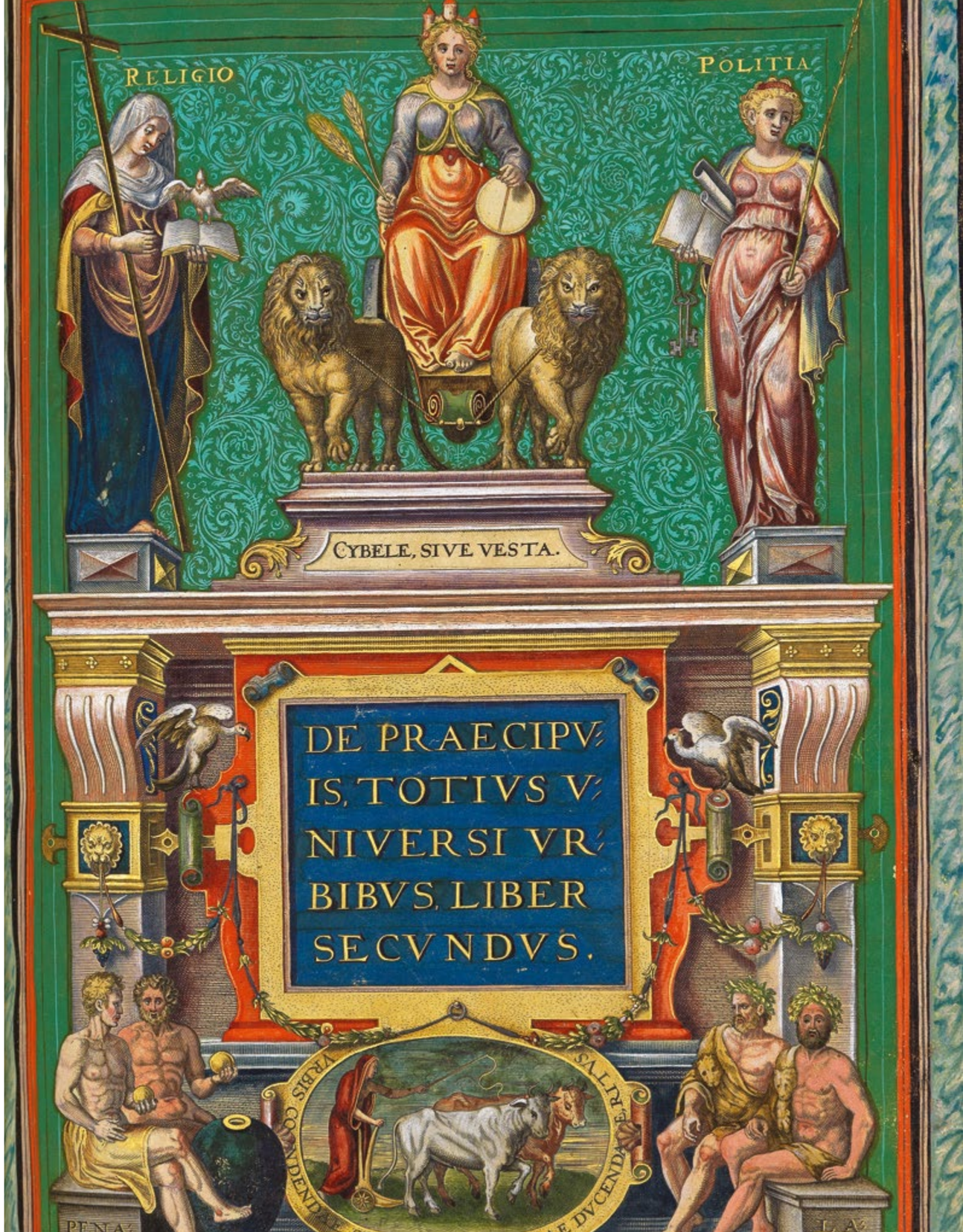
It is unsurprising that Philipp was able to acquire one of the first copies off the press, thanks to his substantial wealth and his family's contacts. For example, the burgomaster of Cologne, Constantin von Lyskirchen, a Fugger merchant, was responsible for supplying the sketches and descriptions of the Asian cities in Book One. Also, his cousin Max Fugger is known to have met and patronised the famed minaturist Joris Hoefnagel (one of the principal artists to have worked on the 'Civitates') when Hoefnagel visited Augsburg with Abraham Ortelius in 1577. It is tempting to think that Philipp might have met them both at this time; certainly his library would have been of great interest to Ortelius. If so, did he seek to employ Joris in the colouring of his 'Civitates'? He would have been the perfect choice. Alas, as none of the plates is signed by the colourist, this can only be supposition.

The binding

The binding is the work of the "Philipp-Eduard-Fugger-Meister", an unknown master craftsman, most probably from Augsburg. The arabesque tools used in the corners of the centrepiece are very similar to those of the Augsburg binder Kaspar Horneffer, and the Fugger-Meister also used material from other Augsburg bookbinders, suggesting he worked in that city.

Provenance

1. Coat-of-arms of Philipp Eduard Fugger (1546-1618) to binding
2. Inscription of Paul Graf Fugger-Kirchberg-Weißenhorn (1637-1701) to upper pastedown
3. (?) Dr. Werther Munich blind stamp to upper flyleaf
4. Otto Schäfer Stiftung, Schweinfurt, Germany.



The first national atlas

12 **[SAXTON, Christopher]**

[An Atlas of England and Wales].

Publication
[London, Christopher Saxton, 1579].

Description
First edition, folio (415 by 300mm), engraved title-page showing Queen Elizabeth as patroness of Astronomy and Geography, attributed to Remy Hogenberg, double-page engraved plate showing coats-of-arms and table of counties, 45 engraved maps (all double-page, except the map of Yorkshire on two sheets and folding), after Saxton by Hogenberg, Lanaert Terwoot, Cornelius de Hooghe, Augustine Ryther, Francis Scatter, and Nicolas Reynolds, all maps and plates with fine original full-wash colour, with title heightened in gold, map of Wiltshire trimmed to the neatline along the top edge, map of Essex trimmed to upper and lower neatline, with slight loss skilfully backed with japan paper, several other marginal repairs, some with loss, at foot, some light marginal soiling, original mottled calf, fillet border, rebacked.

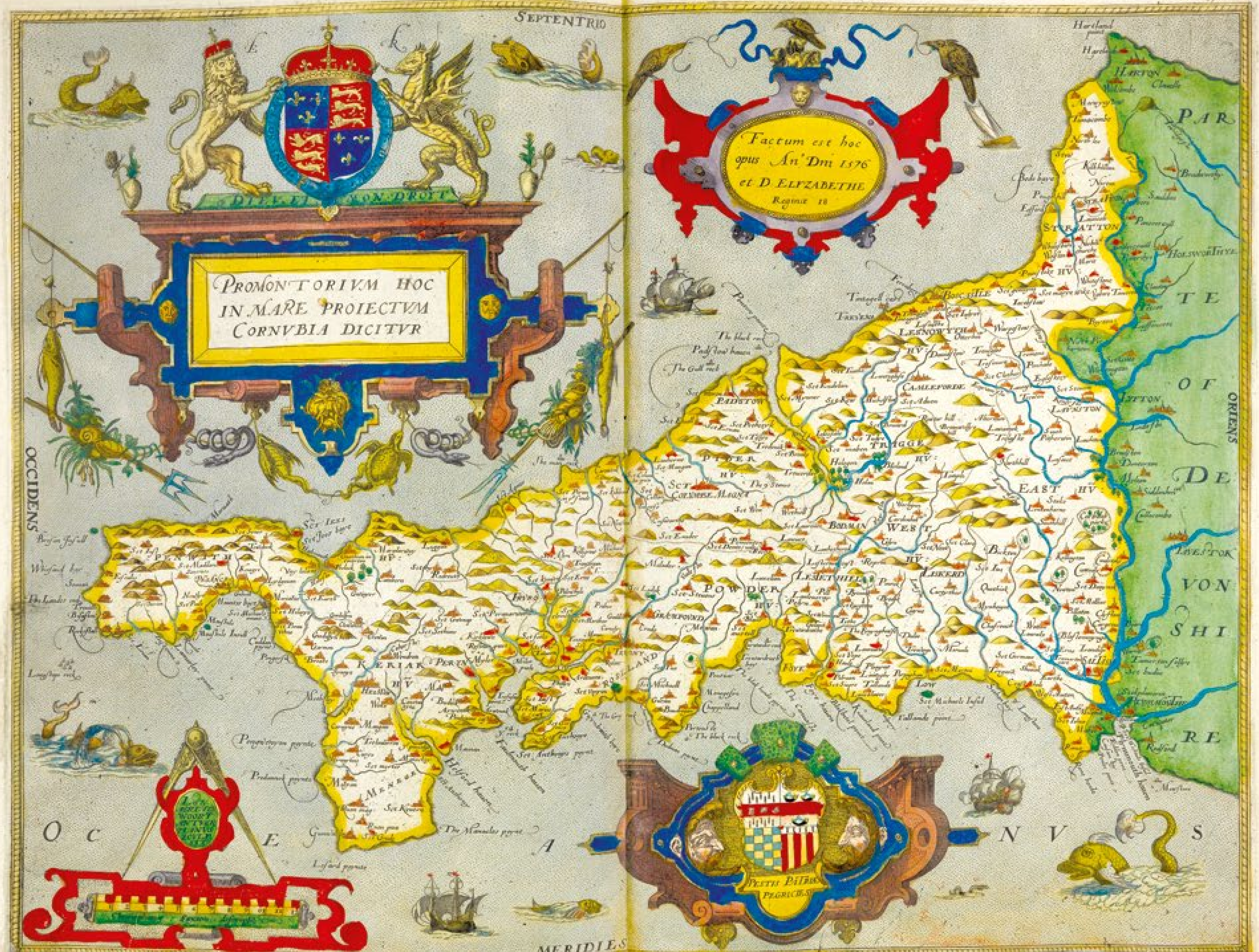
References
Chubb I; Ifor M. Evans and Heather Lawrence, Christopher Saxton, Elizabethan map maker (London: Holland Press, 1979), 9-43; Skelton 1; Shirley, British Library, T.SAX-1b.

One of the earliest national surveys of any kind and the first uniformly conceived cartographic survey of England and Wales.

Dubbed "the father of English cartography" (Skelton), little is known about Saxton's personal life. Born in Yorkshire between 1542 and 1544, his yeoman family were probably clothiers and farmers. It is likely that Saxton was apprenticed in cartographic draughtsmanship and surveying to John Rudd, Vicar of Dewsbury (1554-1570) and Rector of Thornhill (1558-1570/78). Rudd had a passion for maps, and was engaged at some time in the 1550s in making a 'platt' of England; in 1561 he was granted leave from his duties to travel further to map the country. It is suggested that Saxton accompanied him on these travels, at which time he would have been about 17 years old. Records show that Saxton was employed by Rudd by 1570.

The idea of making a survey of the kingdom and its parts in a consistent format developed in the mid sixteenth century. Although the first English map of Britain by Matthew Paris had appeared in about 1250, it was not until the mid fifteenth century that the principles of mapping were fully understood. The craft of cartography was boosted by the Italian invention of printing maps from copper plates in 1473, while advances in scientific learning helped the Dutch and Flemish to become the masters of map making by the late 1500s: in 1564, Gerard Mercator, the Dutch cartographer, published a detailed map of the British Isles on eight sheets; his friend Abraham Ortelius published a map of the world in 1570. These pioneering maps were made possible thanks to developments in draughtsmanship and surveying. Such techniques emerged in part as a result of the practical needs of military engineers: military surveyors were well able to draft plans and topographical maps to scale by the 1540s. Estate surveys also became increasingly popular as the replacement of open fields with enclosures meant that land boundaries had to be defined. Thus, a large number of treatises on surveying appeared, while military textbooks were published explaining the use of the cross-staff for surveying lengths and distances as well as heights. Such interest led to the construction of increasingly sophisticated surveying instruments resulting in a new accuracy in mapping.

Saxton came to London at an unknown date and was chosen by Thomas Seckford to survey and map the counties of England and Wales. A court official, Seckford worked closely with William Cecil, Lord Burghley, who was possibly behind both Rudd's and Saxton's mapping projects. He certainly had a keen appreciation of the political value of maps, making his own sketches of politically sensitive areas such as the Anglo-Scottish borders. Cecil took a great interest in Saxton's work as it progressed: the maps were sent to him as each plate was engraved, and once the survey was complete he bound up these early proofs with other


SEPTENTRIO
PROMONTORIVM HOC
IN MARE PROIECTVM
CORNVBIA DICITVR
Factum est hoc
opus An° Dni 1576
et D. ELIZABETHE
Reginæ 18
OCCIDENS
ORIENS
MERIDIES
Oc E A NV S
PARTE OF DEVONSHIRE

relevant maps and plans. This volume still exists and is in the keeping of the British Library.

It is Seckford, however, who is generally thought to have financed the undertaking. His involvement is reflected in the appearance of his mottos and coats-of-arms on every map in Saxton's atlas. The project was further authorized by Queen Elizabeth I, to whom both the atlas and the wall map was dedicated. As a result of this backing, Saxton received a considerable amount of administrative assistance and financial reward: on 11 March 1574, he was granted a lease of land at Grigston Manor in Suffolk in consideration of his expenses "in the survey of divers parts of England". Moreover, on 20 July 1577, Elizabeth granted Saxton a licence for the exclusive publication of the maps for a ten year period.

The maps that would constitute the atlas were available singly or, after the last one was completed in 1578, bound up as here. Accordingly, the maps and other leaves are found in various states, depending on when they were printed. In the present example, 12 maps bear Seckford's pre-1576 motto (Pestis patriae prigricies), and 23 his later motto (Industria naturam ornate), the index is in the fourth setting with a four-line heading and three columns, 83 coats-of-arms and one blank; the title-page bears shield and fleur-de-lys watermark, and all the maps bear the 'grapes' watermark.

Provenance

1. Book plate of Charles Lord Maynard (1690-1775).
2. William Adlington Cadbury (1867-1957), second son of Richard Cadbury, one of the two brothers who started the manufacture of chocolate under the Cadbury name.

The ‘Vrients’ Atlas with a letter to Ortelius explaining how to smuggle heretic and erotic prints past the Inquisition

13 ORTELIUS, Abraham

Theatro del Mondo di Abrahamo Ortelio: Da lui poco inanzi la sua morte riueduto, & di tauole nuoue, et commenti adorno & arrichito, con la vita dell'Autore. Translato in Lingua Toscana dal Sigr. Fillipo Pigafetta. In Anversa, si vende nella nella libraria plantiniana M.DC.XII.

Publication
Antwerp, Jan Baptist Vrients, 1608.

Description
Folio (460 by 290mm), three parts in one volume, including the Parergon, engraved allegorical title, with letterpress title overslip with full-page engraved portrait of Pope Clement on verso, architectural border to Parergon title, large Plantin device on Nomenclatur title, engraved dedication, portrait of Ortelius, and five diagrams in the text, 194 engraved maps on 154 mapsheets, five double-page plates of landscapes, all on guards, mostly double-page, fully coloured by a contemporary hand and many heightened in gold, numerous woodcut ornamental initials, some browning and spotting, title, final leaf and five early leaves with margins neatly restored, several small repaired tears, some offsetting, seventeenth century Italian red morocco, central gilt ruled panel with cardinal's arms at centre and floral cornerpieces, spine gilt in seven compartments, gauffered gilt edges, spine neatly re-backed, edges restored, lightly rubbed [together with] autograph letter from Joannes Vryfpenninck (Terenumus) to Abraham Ortelius, in brown ink on paper, Lisbon, 15 June 1561, folio (310 by 210mm), one and a half pages of text in Latin and Dutch, addressed on lower half of the page, attached to a stub, some paper reinforcing over black areas on verso, wax seal, small tear, slightly affecting three words of the text.

References
Jan H. Hassels, ed., Abrahami Ortelli Epistulae, (Cambridge, 1887), no.10.; Koeman 31: 651.

A magnificent example of one of the most complete versions of the first printed atlas to be so called, sumptuously bound and with glorious full contemporary colour.

The present work was issued by Jan Baptist Vrients c.1608 using the stock printed by Christoffel Plantin, and acquired by Vrients from Ortelius' heirs in 1601. Vrients expanded the edition to include a number of new maps after Hessels, and he also added an introduction to cosmography written by Michel Coignet. The present example is bound without Hessel's maps of Genoa and Ferrara, which is often the case. The Vrients atlas is significant for the inclusion of several new maps, all of which are extremely decorative, uncommon, and beautifully engraved. One further Italian edition was issued in 1612 when Vrients sold the plates to the Officina Plantiniana shortly before his death.

A rare atlas; Koeman records only eight examples of this edition. The colouring of the present example is particularly fine with careful gold highlighting to many of the maps, particularly on the cartouche tracery, titles, and decorative detail.

The letter

A signed autograph letter to the book dealer and future cartographer, Abraham Ortelius, by a Low Countries colleague in Lisbon (Hassels). Vryfpenninck begins in Latin, thanking Ortelius for his letter, referring to lucrative dealings and warning him to be careful what he sends, noting that many things are prohibited as heretical or erotic. With perhaps deliberate vagueness, he notes he is only allowed to trade under certain conditions and is prohibited from dealing in these matters. He then switches to Dutch for one sentence (no doubt so the Inquisitors can't read it): “One wouldn't begrudge me as much of that as I can!”. He then goes on in Latin, noting that the Inquisitors examine pictures, engravings and images as well as than books. What they like is Old and New Testament history prints, portraits of distinguished Catholics (here Vryfpenninck notes, they even regard Erasmus as a heretic), Christ's Passion; in short, anything not too scandalous. He then switches back to Dutch for a long passage:

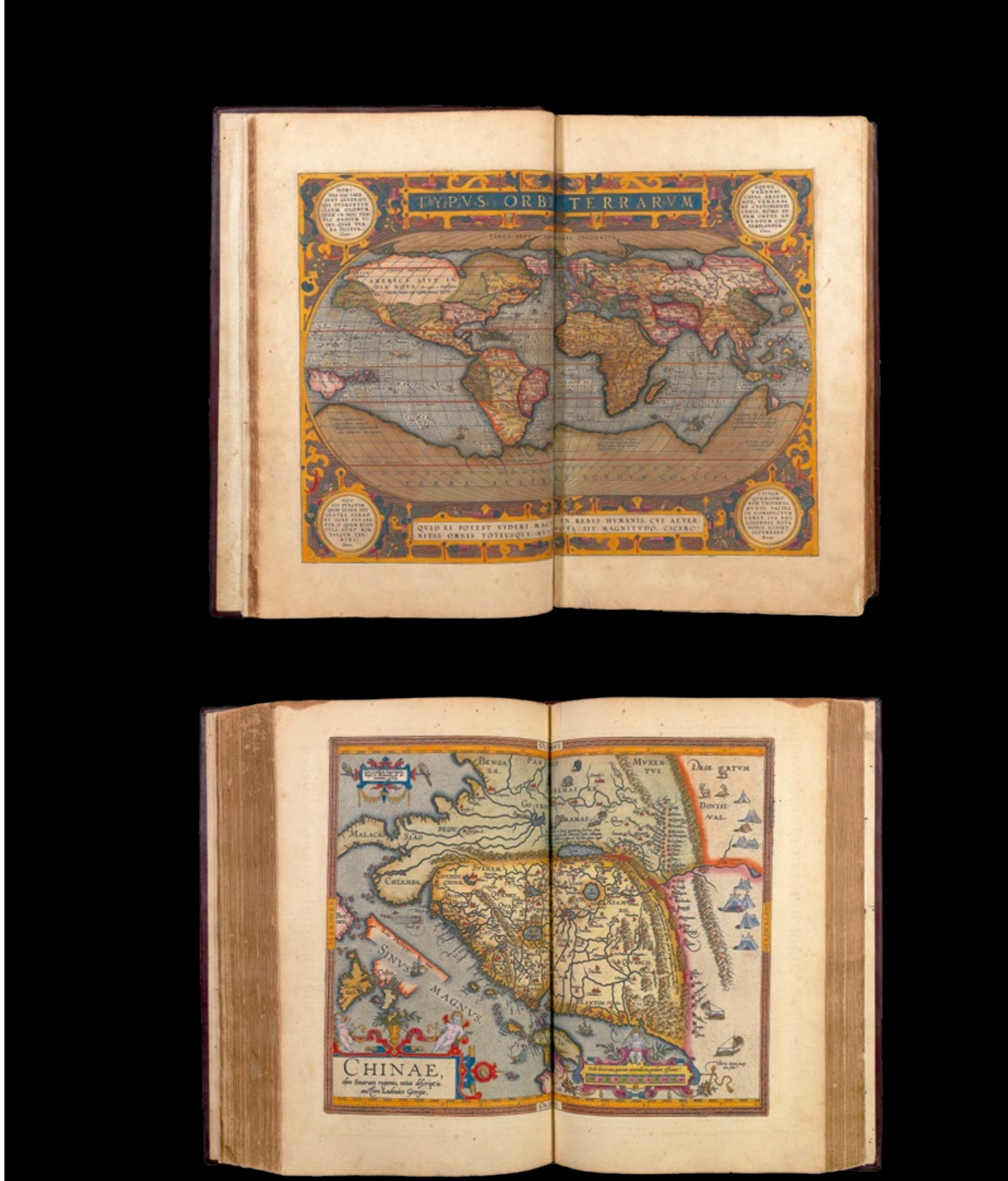
“the best thing is to have all those papers of similar format put in a parchment (binding) like a book and trim the edges so they will be taken for books, on which there is no duty ... [Unbound books in sheets were often shipped rolled, so Vryfpenninck suggests an alternative technique as well:] you can make rolls of them and put them in the packing cases with the books, but in the corners, because otherwise they will be examined one by one and charged duty. [Finally, he offers a third technique] ... you can lay pictures on the bottom of the case, after first laying down some paper to protect them from the damp ship, and then more paper on top to protect them from the fastenings of the books lain on top of them”.

He then returns to Latin for the remainder of the letter, and asks Ortelius to remember him to Willem Silvius.

Although the long Dutch passage only mentions avoiding duty charges, the fact that it directly follows the discussion of prohibited prints strongly suggests that Vryfpenninck is urging Ortelius to smuggle them as well. Although he refers to books and prints in packing cases ("coffers"), he also refers to the examination of cases, barrels, and packets ("Coffers vaten ende packen").

Abraham Ortelius (1527-1598) began his career as a map colourist, but soon began dealing in prints and books as well, specialising in cartography. He made his first known map in 1564. Little is known of the author, who signs the letter with both his Latin and Dutch name (there was a Vryfpennick family in Frankenthal fifteen years later), but he was clearly on intimate terms with Ortelius and Willem Sylvius (first recorded in Antwerp in 1559) at the beginnings of their careers.

Watermark: Trefoil above PB, similar to Briquet 9616 (found in Udine 1565). With page numbers 615-616 from an early album.



One of the earliest works on seamanship

14 MEDINA, Pedro de

Arte del navigare.

Publication
Venice, Baglioni, 1609.

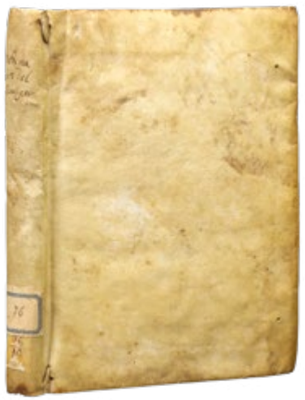
Description
Quarto (200 by 145mm), title in red and black with woodcut device, [8] prelims., b4 blank, 137 numbered leaves, map of the Atlantic and the New World, E2, numerous woodcut diagrams and tables within text, original vellum, title in manuscript to spine.

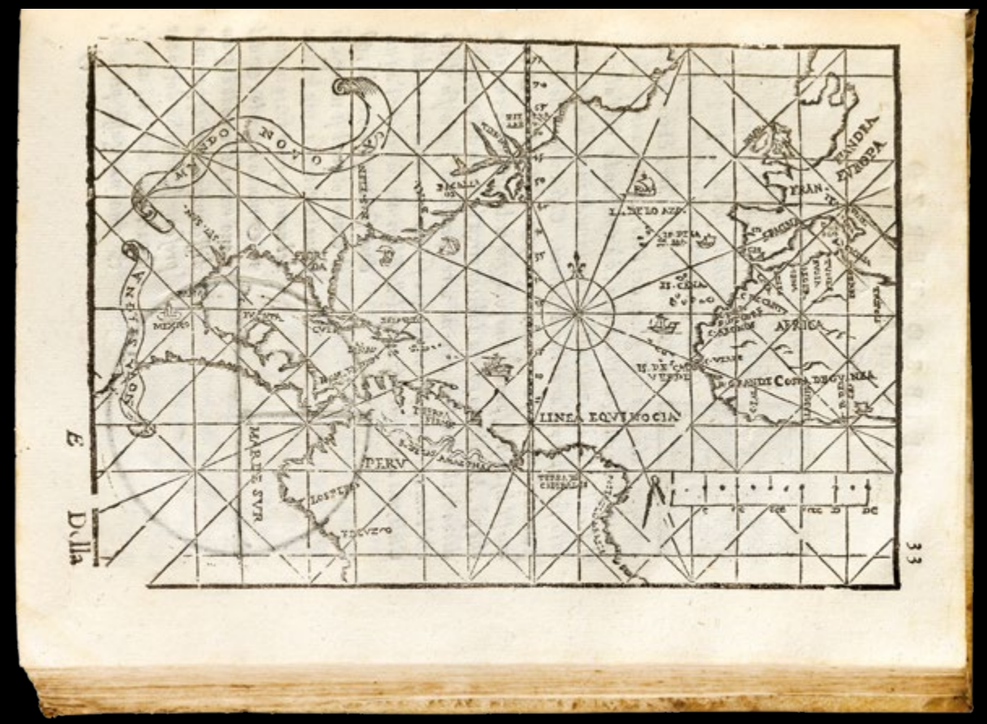
References
John E. Alden and Dennis C. Landis, European Americana: a Chronological Guide to Works Printed in Europe Relating to the Americas, 1493-1776 (New York: Readex Books, 1980-1997), 609/77; R. Borba de Moraes, Bibliographica Brasiliana, (Rio de Janeiro: Colibris, 1958) 548; George Watson Cole, ed., Catalogue of Books relating to the Discovery and Early History of North and South America forming a part of the Library of E.D. Church, (New York: Dodd, Mead and Company, 1907), 98; Antonio Palau y Dulcet, Manual del librero hispanoamericano (Barcelona: Librería Palau, 1948), 159.680; Sabin 47344; Shirley, World, 84.

Fine example of the first practical treatise on navigation.

Pedro de Medina (1493-1567), was a mathematician, astronomer, and geographer. He started his career as tutor and librarian to the Dukes of Medina. He then began to practice cosmography, and became an examiner of pilots and sailing-masters in Seville in 1539. He was dissatisfied with the level of teaching and quality of the texts and charts he taught with, and wrote his 'Arte del navigare' to remedy the deficiency. This was the first European treatise on navigation, which is why de Medina "may be said to be the founder of the literature of seamanship" (Church). He was subsequently appointed Royal Cosmographer in 1549.

The work was very popular – it was one of the three navigational texts that Sir Francis Drake took on his expedition – and was translated into several languages. His official position as examiner brought him into constant contact with sailors and pilots, and the maps are remarkably up-to-date, incorporating discoveries and reports from Spanish expeditions in the Americas. His map of the Atlantic Ocean and the Americas shows the mouth of the Mississippi, "R. SPT. SAN.", and the St Lawrence River and Gulf. Newfoundland is still shown as a peninsula rather than an island. The river Saguenay is indicated here, a remarkable feature in so early a map. Within the small woodcuts is a map of the world (leaf 26), surrounded by eight windheads. Europe, Asia, and Africa are marked and part of America is shown in simplified form (Shirley).





"The greatest and finest atlas ever published"

15 **BLAEU, Johannes**

Le Grand Atlas, ou Cosmographie blaviane, en laquelle est exactement descritte la terre, la mer, et le ciel.

Publication
Amsterdam, Jean Blaeu, 1663.

Description
12 volumes, folio (540 by 340mm), engraved allegorical or architectural frontispieces, printed titles with engraved vignettes and divisional half-titles, 596 engraved maps and plates, mostly double-page (some folding), engraved illustrations, coloured throughout in a contemporary hand, heightened in gold, publisher's vellum gilt with yapp fore-edges, covers panelled with stylised foliate roll, and large centre and corner arabesques, gilt edges, spine divided into eight compartments by horizontal rolls, decorated with fleur-de-lys corner pieces around a central rose tool, with original ties.

References
Brotton, 260-293; Hermann de la Fontaine Verwey, "Het werk van de Blaeus', Maandblad Amstelodamum 39 (1952), 103 quoted in Brotton, 265; Van der Krogt, 2:611-2; Shirley, British Library, T:BLA-1q.

An exceptionally attractive example of "the greatest and finest atlas ever published" (Verwey).

The 'Atlas Major' in its various editions was the largest atlas ever published. It was justly famed for its production values, its high typographic standard, and the quality of its engraving, ornamentation, binding, and colouring. The atlas frequently served as the official gift of the Dutch Republic to princes and other authorities. It is one of the most lavish and highly prized of all seventeenth-century illustrated books.

"In its sheer size and scale it surpassed all other atlases then in circulation, including the efforts of his great predecessors Ortelius and Mercator" (Brotton). The work was published simultaneously in five different languages, Latin, French, Dutch, Spanish, and German. The French 'Grand Atlas' was the largest of the five editions, with the volume concerning France split into two books to make a total of 12 volumes. What Blaeu managed to achieve was to contain the world in a book, an endeavour that in many respects would never be equalled.

Publication history

Blaeu's great work was born in 1630 when he published his first atlas, the 'Atlas Appendix'. The book consisted of 60 maps, and was billed by Blaeu as a supplement to Mercator's atlas. His great rivals, Henricus Hondius and Johannes Janssonius, had expanded and reissued Mercator's work. They were so frightened of Blaeu's move into the publication of atlases that they rushed out a rival 'Appendix' by the end of the same year.

Over the next 30 years this great publishing rivalry would spur the production of ever larger and more lavish atlases. In 1634, Willem Blaeu produced his 'Atlas Novus', containing 161 maps; this was expanded in 1635 to two volumes, containing 207 maps. The house of Blaeu was so successful that in 1637 they moved into larger premises. The new building was the largest printing house in Europe, with its own print foundry and nine letterpresses. Unfortunately, Willem did not live long after the move and he passed away the following year. He was succeeded in business by his son Joan, who also inherited the lucrative and influential post of Hydrographer to the Dutch East India Company (V.O.C.).

Over the next 20 years Joan expanded the 'Atlas Novus': adding a third volume in 1640 covering Italy and Greece; in 1645, a fourth volume on the British Isles; and in 1654 a volume relating to China, the Atlas Sinensis. This was the first western atlas of China, based on the work of the Jesuit Marteo Martini. Janssonius managed to keep pace with his more illustrious rival. In 1646 he published a four volume atlas, adding a fifth – the first folio sea atlas – in 1650, and in 1658 a sixth consisting of 450 maps, some 47 more than Blaeu's similar work.

In 1662, Blaeu announced that he would auction his bookselling business in order to finance the imminent publication of his great atlas.

From a brief look at the numbers it is clear that Blaeu needed capital. The creation of the five editions took six years, from 1659 to 1665. It is estimated that 1,550 copies over all five editions were printed. If one totals up the entire print run, it comes to just over 5.4 million pages of text, and 950,000 copper plate impressions! Such a vast undertaking in capital and labour was reflected in the price of the work, with the French edition the most expensive at 450 guilders. The atlas was not only the costliest ever sold, but also the most expensive book of its day. To give us some idea of comparative value, the average price of a house in Amsterdam at the time of publication was 500 guilders.

The maps

The maps are embellished in the Baroque style, and are among the most beautiful ever made. Of particular note are the famous side-panelled maps of the continents, the 58 maps devoted to England and Wales (vol. V), Martini's Atlas of China, the first atlas of China published in Europe (vol. XI), and a series of 23 maps of America, including important early maps of Virginia and New England (vol. XII).

Of particular note is the double hemispheric world map, newly prepared for the atlas by Joan. Jerry Brotton suggests that this is the first world map in an atlas to portray the Copernican solar system.

Contents

Volume I World, Europe and Scandinavia. 61 maps and plates.
Volume II Northern and Eastern Europe. 39 maps and plates.
Volume III Germany. 96 maps (3 folding).
Volume IV The Low Countries. 63 maps.
Volume V England and Wales. 58 maps.
Volume VI Scotland and Ireland. 55 maps.
Volume VII France. 37 maps.
Volume VIII France and Switzerland. 36 maps
Volume IX Italy. 60 maps.
Volume X Part 1. Spain and Portugal. Part 2. Africa. 41 (28 + 13) maps and plates, including 3 folding.
Volume XI Asia. 28 maps.
Volume XII America. 23 maps.

Provenance: Nineteenth century book plate of the Marquess of Westerloo.

TOM II. TOM III. TOM IV. TOM V. TOM VI. TOM VII. TOM VIII. TOM IX. TOM X. TOM XI. TOM XII.


ARABIA.
Milliaria Germanica Communia.
Septentrio.
AGGARA.
ARDEN.
Beziara Desertum.
ARABIA DESERTA.
ARABIA PETRÆA.
AYAMAN
Olim ARABIA
Elcatif Desertum.
MARE ELCATIF olim SINUS PERSICUS.
PERSIÆ PARS.
ORMUS.
MASCALAT
Tropicus Cancri.
FILIX
BESCHARIN.
MAFFA.
AMANZIRIFDIN.
ALIBINALI.
GUBELHAMAN.
FARTACH
THEAMA.
Mecca
Medina
Aden.
MARE RUBRUM SINUS ARABICUS
MARE MECCA
AFRICÆ PARS.
MARE ARABICUM et INDICUM.
Zocotora Insula
DANGALI.

The first English world atlas

16 **SPEED, John**

The Theatre of the Empire of Great Britaine Presenting An Exact Geography of the Kingdomes of England, Scotland, and Ireland and the Isles adjoyning with the Shires Hundreds Citys and the Shire townes within the Kingdome of England devided and described As also A Prospect of the most famous Parts of the World by John Speed With many Additions never before Extant.

Publication
Folio atlas, two works, comprising five parts, in one volume (425 by 280mm), incorporating 96 double-page engraved maps; the first work: four parts in one volume, royal achievement of Charles II, engraved title, printed title, dedications and licence, 11pp. preliminaries, 68 double-page engraved maps; the second work: printed title incorporating contents leaf and 28 double-page engraved maps, good impressions throughout, a few maps with marginal discoloration, some staining at the upper margin affecting engraved surface of several maps, map of Chester pasted over another map (text is correct), stain on verso of map of Virginia (not obscuring text), contemporary mottled calf, skilfully rebacked.

Collation: The first work: [2]; A-Eeee2 (signatures E1r - Eeee2v are paginated 1-146), the pages bearing maps are not numbered or allowed for in the numeration, Ffff-Hhhh2 (index). The second work: [1]; A-Ee2, (paginated 1-56, the pages bearing maps are not numbered or allowed for in the numeration).

References
Chubb xxvii; Sabin 89228; Skelton 92; Wing S4886.

A good example of the first world atlas published by an Englishman in England. This edition has the full complement of maps of the Americas.

The 1676 edition of John Speed's famous atlas marked the high point of its publication history. The work was first issued in 1612 as 'The Theatre of the Empire of Great Britain' and was purely an English county atlas. In 1627 it was expanded to include 'A Prospect of the most Famous Parts of the World', containing 20 maps (the world and four continents, Greece, the Roman Empire, Germany, Bohemia, France, the Low Countries, Spain, Italy, Hungary, Denmark, Poland, Persia, the Ottoman Empire, China, Tartary, and Bermuda). This was the last edition to be published in Speed's lifetime; he died in 1629. Subsequent editions of the atlas were designed to be sold with or without the 'Prospect', which was available separately. At some point after 1668 the plates were sold by Roger Rea to Thomas Bassett and Richard Chiswell, whom in 1676 published a new edition of the combined 'Theatre' and 'Prospect'.

The new edition was the first to contain a title-page for both the 'Theatre' and the 'Prospect', and a general index covering the text of both. A further eight new maps were also added; these included four of the Americas engraved by Francis Lamb (namely New England and New York, Carolina and Florida, Virginia and Maryland, and Jamaica and Barbados), three further foreign maps (of the East Indies, Russia, and the Holy Land), and a map of the 'Invasions of England and Ireland', inserted into the 'Theatre'.

Provenance
1. Frank Hammond, Birmingham, Catalogue 114, 28 July 1958, item 931.
2. Sotheby's, Library of Lord Wardington, 10 October 2006, lot 485.


A NEW AND ACCVRAT MAP OF THE WORLD
Drawne accordin truest Descriptions latest Discoueries & best Obseruations ẏ haue beene made by English or Strangers.
1651
The Heavens and Elements
WATER
EARTH
A Figure of the Sphaere
THE NORTH FROSEN ZONE
THE TEMPERATE ZONE
THE TORRID ZONE
THE SOUTH FROSEN ZONE
NORTH
AMERICA OR MEXI
CANA
MAR DEL NORT
MAR DEL ZUR
The Tropicke of Cancer
The Aequinoctiall Line
The Tropicke of Capricorne
THE OCEANE
SOUTH AMERICA OR PERU
PERU
THE PACIFICKE SEA
MAGALLANICA
THE TARTARIAN SEA
THE ATLANTICKE SEA
THE CHINENSIS OCEAN
THE INDIAN SEA
MARE LANTCHIDOL
THE WESTERNE OCEAN
THE SOUTHERNE UNKNOWNE LAND
Are to be sold by Tho: Bassett in Fleet street and Ric: Chiswell in St Pauls Church yard
FIRE
AIRE
The Eclipse of the Sunne
The Eclipse of the Moone

One of the most important travel works of the seventeenth century

17 THÉVENOT, Melchisedech

Relations de Divers Voyages Curieux qui n'ont point esté publiées, ou qui ont esté traduites d'Hacluyt, de Purchas et d'autres voyages Anglais, Hollandais, Portugais, Allemands, Espagnols, et de quelques Persans, Arabes et auteurs orientaux.

Publication
Paris, Thomas Moette, 1696.

Description
Five parts in two volumes, folio (350 by 220mm), general title printed in red and black, separate title-pages for the 'Sinarum Scientia Politico-Moralis', Paris, 1672, and Thomas Gage's 'Histoire de l'Empire Mexicain', Paris, Chez Thomas Moette, 1696, 11 folding maps (bound without map of Sierra Leone), 23 plates (the majority folding), 46pp. woodcut pictograms to Gage's Mexico, engraved head- and tail-pieces, contemporary speckled calf, raised bands, fully gilt in compartments, red morocco label lettered in gilt.

References
Bibliotheca Lindesiana: Catalogue of the printed books preserved at Haigh Hall (Aberdeen: Aberdeen University Press, 1910) IV, 8830- 8840; Brunet V, 810-13; Cordier, Japonica, 33; Cordier, Sinica, 1944; Simon Dewez, The Printed World V: Beyond Settlement, ed. Gabrielle Sproat (Woollahra, New South Wales: Gowrie Galleries, 2003), 43; John Lust, Western Books on China Published up to 1850 (Bamboo: London, 1987), 260 [listing the voyages to China]; Antonio Palau y Dulcet, Manual del librero hispanoamericano (Barcelona: Librería Palau, 1948), 331563 and 331564.

The definitive edition of one of the most important and comprehensive travel writings of the seventeenth century.

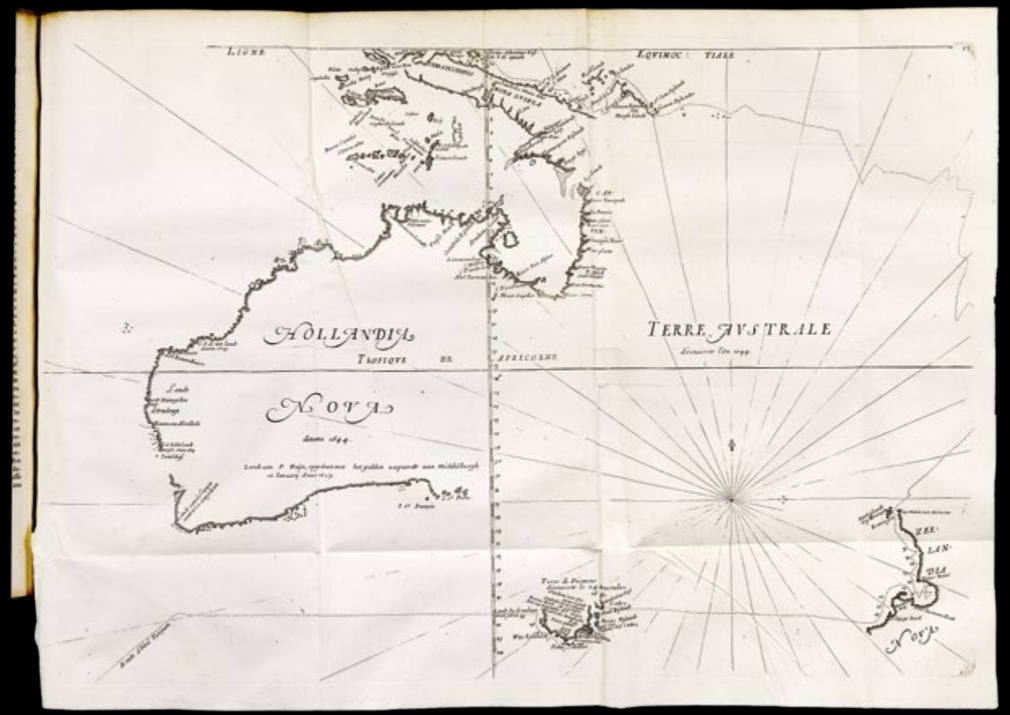
Melchisedech Thévenot (1620-1692) was a French diplomat, scientist, and travel writer. He was a scholar with interests in mathematics, physics, and medicine, acting as the patron of several early scientific societies and most notably contributing to the formation of the Académie des Sciences. His early career included two missions to Italy in the 1640s and 1650s, and it was there that he first developed an interest in the study of Oriental languages. In 1663, he published the first part of 'Relations de Divers Voyages' (An account of diverse and curious voyages), a work that would secure his reputation as one of the most important travel compilers of the seventeenth century. He would go on to publish a second and third part in 1666, a fourth in 1672, and a final fifth part was being assembled in 1692 when Thévenot died. The definitive edition – the present work – would not be published until 1696.

One of the great driving forces behind 'Divers voyages' was Thévenot's desire to help France achieve her aim to increase colonial trade to compete with other European nations. The book aimed to gather together the most up-to-date practical knowledge on navigation and information on foreign countries.

The work includes entries on Africa, the Far East, South East Asia, America, and Australia, together with several important maps. Of particular note is Thévenot's map of Australia – "the first large-scale map of Australia to chart Tasman's discoveries" (Dewez) – together with the text regarding his voyage, which appears here for the first time, in Part V.

A full collation is available upon request.

Provenance
Nineteenth century book plate of the Marquess of Westerloo.



Two manuscripts from the most famous family in French map-making history

18 **CASSINI, Jean-Dominique, Jacques Philippe MARALDI and César François CASSINI DE THURY**

Description de la France [AND] Pensées astronomiques que j'ay recuelli la plus parte dans les entretiens avec Monsieur Cassini mon Oncle depuis l'an 1708. J'en ay aussi ramassé quelques unes de ses papiers volans et gates en partie.

Publication
Paris, [1708] and [after 1738].

Description
Description de la France: quarto (230 by 170mm), manuscript, 685pp., nine leaves, some mispagination and a few misbound, 60 manuscript maps in pen and ink, red marbled endpapers and pastedowns, original mottled calf, rebacked preserving original spine, spine in six compartments separated by raised bands, lavishly gilt, with red morocco label lettered in gilt, [with] three loose manuscript leaves and one loose map, all housed in modern quarter blue morocco clamshell case, title and author lettered in gilt. A full collation available upon request.

[together with]

Pensées astronomiques: quarto, manuscript, 118 indexed leaves, damp staining to lower portion of text throughout, original paper over boards, wear to hinges, damp staining to upper and lower board, rubbed, a few manuscript annotations, [with] 12 loose manuscript sheets, all housed in modern quarter blue morocco clamshell case, title and author lettered in gilt.

References
F. Bonoli and A. Cassini, "Dictionnaire Historique, ovvero di un manoscritto inedito di pensieri astronomici di Giovanni Domenico Cassini, redatto da Giacomo Filippo Maraldi", Giornale di Astronomia 33 (2007), 15-26; Brotton, 294-336.

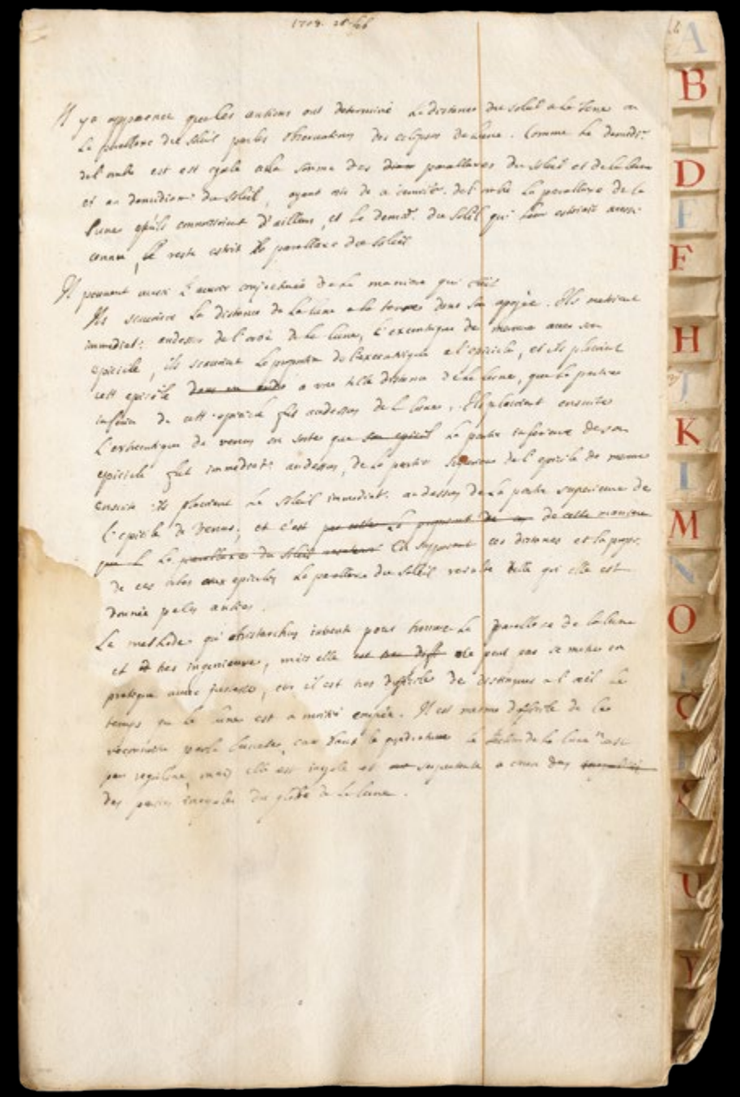
Two manuscripts produced by members of the remarkable Cassini family, who dominated French cartography and astronomy for a century and a half. The first provides a unique window into the long process of the first full survey of France. It was an undertaking of unprecedented accuracy that would reduce the known area of the country by 30,000 square kilometres, prompting Louis XV to exclaim "You have cost me more territory than all my enemies!" when confronted with the results. The second is a collection of notes on astronomy, recording the leaps in scientific understanding made in a time when the dominant theory of a geocentric universe was seriously challenged for the first time in a millennium.

The Cassini dynasty comprised Jean-Dominique Cassini (1625-1712), or Cassini I, and his descendants: Jacques Cassini, or Cassini II (1677-1756); César-François Cassini, or Cassini III (1714-1784); and Jean-Dominique Cassini, or Cassini IV (1748-1845). Two members of the Maraldi family, their cousins, also have a hand in the manuscripts: Jacques-Philippe (Maraldi I) and Jean-Dominique (Maraldi II).

Cassini I was born in Liguria and studied at the Panzano Observatory under Giovanni Battista Riccioli and Francesco Maria Grimaldi. He eventually became professor of astronomy at the University of Bologna. In 1669, he moved to France on the invitation of Jean-Baptiste Colbert to become the first director of the new Paris Observatory. His achievements there included discovering the gap in Saturn's ring system, now known as Cassini's division; observing the shadows of Jupiter's satellites on its disk; and creating a famous lunar map, the first to show the moon's surface in detail from accurate observations. He also began the great survey of France that would consume four generations of his family, into which the first manuscript provides a fascinating insight.

The project to create a new, detailed, and highly accurate map of the whole of France began in the early 1660s. It was the brainchild of Jean-Baptiste Colbert, who was minister of finance from 1665 to 1683 during the reign of Louis XIV. He wanted a detailed map of the whole of the royal estate to improve its management and potential revenue. In order to achieve this he turned to the newly formed Académie de Sciences, and principally to the services of Cassini I and the surveyor and astronomer Abbé Jean Picard. Picard and Cassini I completed a map of Paris and a coastal survey before the project was stalled through lack of funds and the loss of its figurehead with Cassini I's death. It would not be until 1733 that Philibert Orry, Louis XV's controller general, would order Cassini II to resume the triangulation of the entire nation. In 1746, with the framework complete, Louis then charged Cassini III with fleshing out the survey's bare bones.

Cassini III was, like his grandfather and father before him, director of the Paris Observatory. He is most famous, however, for his contribution to the great map of France.



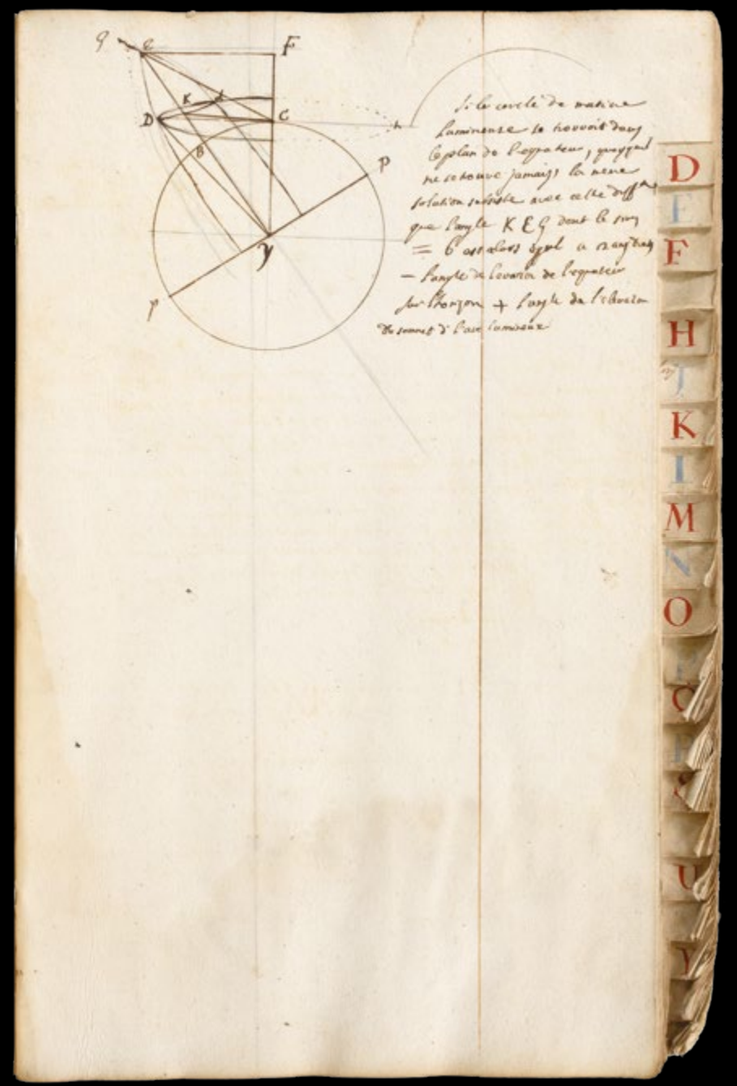
Cassini calculated that the survey would take 18 years to complete, and consist of 180 maps at a cost of 4,000 livres each. Unfortunately, his estimates were woefully optimistic. By 1754, only two maps had been published, and in the same year Cassini received the news that Louis was to end the financing of the survey. This forced him to turn to the private sector, and with Louis' backing he set up the Société de la Carte de France. This, combined with a public subscription in 1758, and a royal proclamation of 1764 demanding that unsurveyed regions contribute to the survey's costs, kept the project financially secure. Although Cassini III had secured the map's future, he would not see its completion. In 1784, at the age of 70, he died of smallpox. The completion of the great project was left to his son, Cassini IV, and Maraldi II.

The first manuscript records the results of the project. It is written in several different hands, most probably Cassini III himself and several assistants. It appears to be a working version of, or preparation for, the book Cassini III published in 1784 to accompany the 180 maps produced as a result of the survey, 'Description Géométrique de France'. It begins with a description of the methods used to conduct the survey, and continues with pages full of measurements, diagrams outlining the processes of triangulation and taking bearings, and lists of place names. Subsequently, there is a series of 60 manuscript maps, with the triangulation network used to create each one drawn in red. Each map is followed by pages of measurements, giving the length of the sides of each triangle and the triangulation points used. The final section deals with methods used to map various different areas of France.

The detail of the records confirm its status as "the first general map of an entire nation based on geodetic and topographical measurements ... [which would] transform the practice of mapmaking over the next 150 years into a verifiable science" (Brotton).

The second manuscript was made by Jacques Philippe Maraldi (Maraldi I) while working with his uncle, Cassini I, although some are in the hand of Cassini himself, his son, Cassini II, and Maraldi's nephew, Jean-Dominique (Maraldi II). It was almost certainly Maraldi I, however, who collated them all. At the beginning of the book, Maraldi I writes that his aim is to collect some "astronomical thoughts of his uncle's", and also to avoid losing his loose notes. He began to fill the book on 26 February 1708.

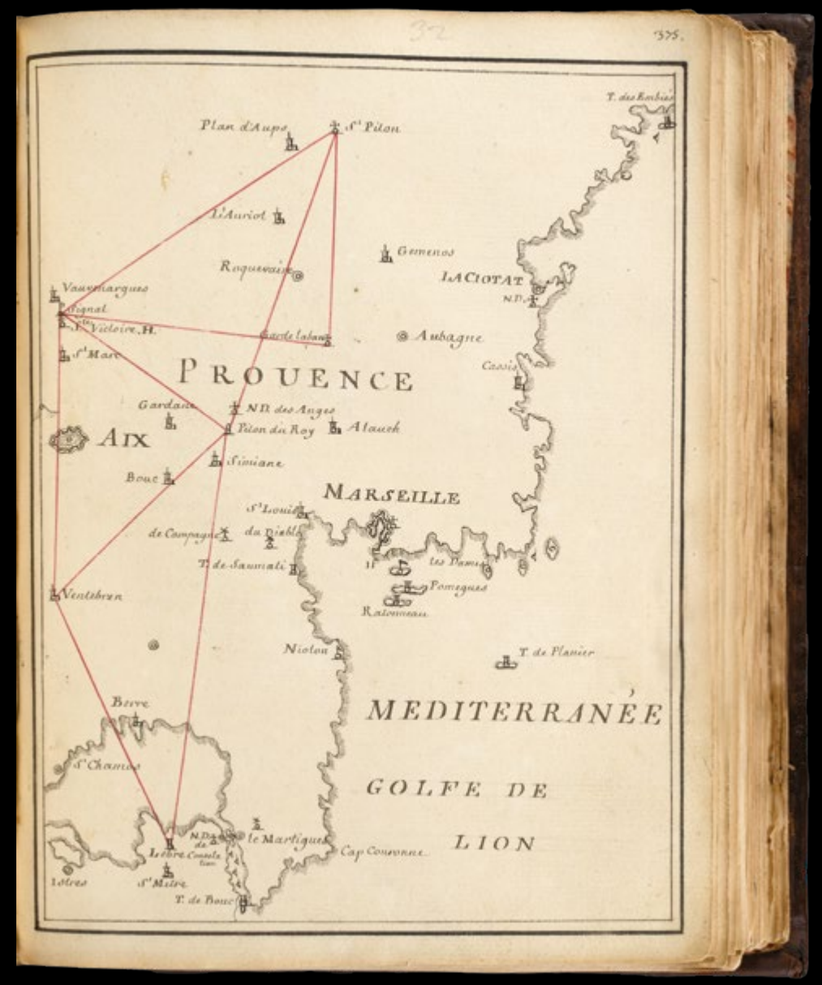
The date of the manuscript is crucial because it gives a tantalising glimpse of a change in Cassini I's scientific convictions towards the end of his life. In the early stages of his career in Italy, he had conformed to the dominant Ptolemaic geocentric theory of the structure of the universe. Ptolemaic theory held that the sun and planets orbited the earth; Copernicus and other thinkers suggested that in fact the earth and other planets orbited the sun. This was prudent, given that Galileo Galilei had spent a decade under house arrest while Cassini was a teenager for endorsing



heliocentrism. Although he then moved to the more liberal environment of Paris and some of his later work has been interpreted as hostile to geocentrism, he was careful not to commit himself publicly. However, a sentence in pages dealing with the motion of the planets reads "We [Cassini I] have demonstrated from the immediate observations, and from the theories that these represent, that the planets from the apogee to the perigee increase their actual speed in reciprocal proportion of the variation in distances from the Sun", lending implicit support to the heliocentric theory. Furthermore, the same pages contain a description of Johannes Kepler's theory of the movement of planets around the sun, and statements supporting the work of Galileo, Johannes Kepler and Constantine Huygens. This suggests that, despite his public silence on the matter, Cassini's true sympathies lay with heliocentrism by the beginning of the eighteenth century.

The notebook begins with Cassini's work on the measurement of the distance between the earth and the sun. As he lays out his methods for this calculation, he also expounds on the ways in which astronomical phenomena – the seasons, the passing of day and night, the phases of the moon – have had an important influence on human culture. He speaks about ancient calendars, quoting classical authors, and emphasising the link between astronomy and chronology. Cassini then explains how in his own time the regular movements of the stars can signal divine intention to humanity, because of their regularity; they have had the same function since the time of their creation. The book goes on to deal with innovative contemporary astronomical concepts, including the use of celestial co-ordinates, Kepler's Law, equinoxes, and the distance between the stars.

The author of most of the notes, Maraldi I, was born in Perinaldo in 1665. His mother, Angela Caterina, was the sister of Jean-Dominique Cassini, who was already teaching at the University of Bologna and making his name as an astronomer. Very little is known of Maraldi's younger years, but his uncle presumably took some interest in him, as he summoned Maraldi to Paris when he was 22. Cassini had moved there in 1669 to take up the position of the director of the newly built Observatory. Maraldi lived with his uncle in the Observatory, assisting him in his observations and and accompanying him on field trips. Maraldi himself aimed to create a star catalogue, the completion of which took nearly his entire life and cost him his health; unfortunately, he was forced to give up when only a few circumpolar stars were missing and none of his co-workers ever sent the manuscript to be published, so it remains essentially unknown. Maraldi was very important to his uncle, who requested his help on the expedition to trace the Paris meridian for the Cassini map of France, and asked Maraldi to represent him in the meetings which decided the reform of the Gregorian calendar. After



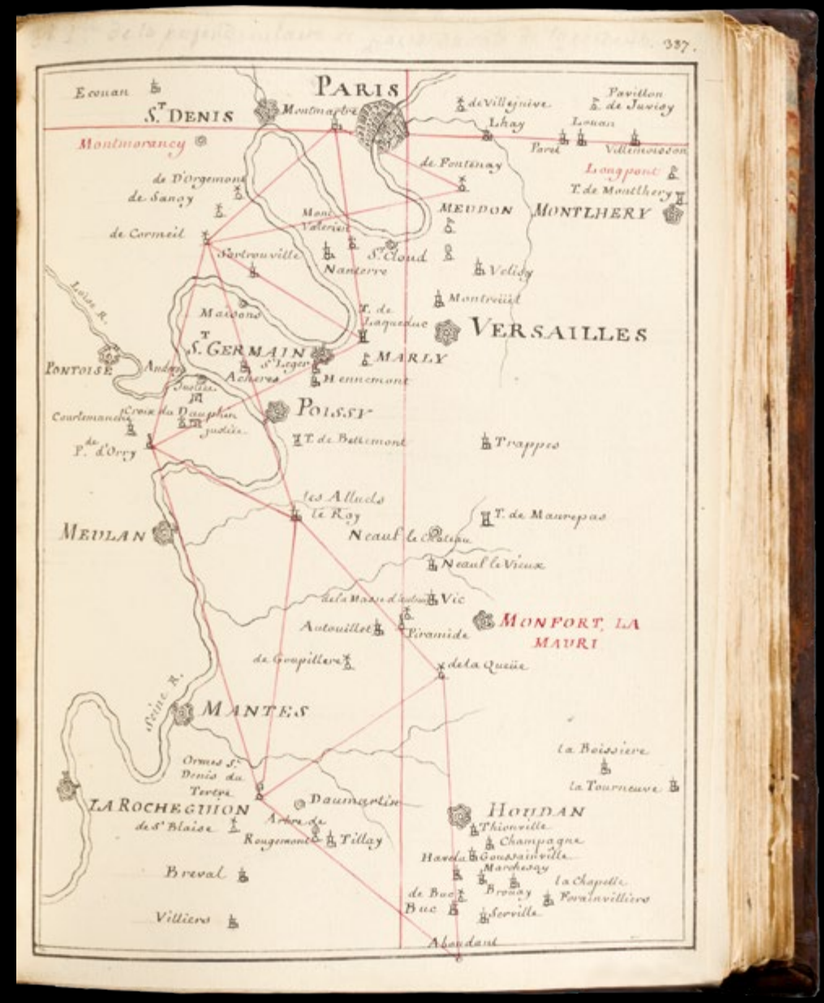
his uncle died, Maraldi led a solitary life, completing his star chart and studying the behaviour of bees, which he farmed in glass hives in the Observatory's garden. He died in 1729.

Although writings relating to the Cassini or Maraldi families occasionally come on the market, collections of this size and scope are very rare. The vast majority of their manuscripts and correspondence remains in the Biblioteca Maraldiana. Institutional Cassini manuscript holdings are mainly letters or practical ephemera: the Bibliothèque de l'Observatoire de Paris holds some of Cassini I's astronomical observation records, and the Smithsonian has some correspondence on his pension and orders for the Observatory. The astronomical manuscript, written by a pupil, a noted scholar in his own right, under Cassini's direct supervision over a long period, provides an unmatched insight into the thoughts of one of the most famous scientists of his age. As far as we can discover, the only other similar work ever offered was a much shorter personal notebook of Maraldi's nephew, Maraldi II, at Sotheby's in 1967. Most of Maraldi's books and papers are lost or missing; outside the Biblioteca Maraldiana, only the Bibliothèque de l'Observatoire de Paris has a manuscript copy of his 'Observations de la Comète'.

The manuscript regarding the great survey of France appears to be the first attempt by Cassini III to systematically collate the methods used and information gathered by himself and his forebears. The Bibliothèque National holds some papers on the triangulation of the north of France and the Cornell Library holds tables of projections which may have been used for the survey, but there is no institutional example of a collection this comprehensive regarding the great survey. A working copy of "Description Geometrique" was again offered at Sotheby's in 1967, but it contained only one manuscript map, was substantially shorter and was dated c.1745, suggesting that it was a later, condensed version of the information laid out in the present example.

Provenance
Biblioteca Maraldiana, the archive of the Maraldi and Cassini families, Castello Maraldi, Perinaldo, Italy.

See also items 30 and 40.



A magnificent example of Renard's sea atlas

19 **RENARD, Louis**

Atlas van Zeevaert en Koophandel door de Geheele Weereldt.

Publication
Amsterdam, 1715.

Description
Folio (540 by 340mm), engraved frontispiece, title in red and black, with engraved coat-of-arms heightened in gold, 30 engraved maps and charts (of which 28 are double-page and two folding), all in fine original outline hand colour, original Dutch red morocco, roll-tool borders gilt on sides, tools of armillary spheres and coronets at corners, large tool of Atlas carrying an armillary sphere to the centre, spine in nine compartments separated by raised bands, with armillary sphere devices, gilt.

References
Koeman Ren 3; Shirley, British Library, M.REN-1c.

The majority of the charts that form this atlas were first published in Frederick de Wit's 'Orbis Maritimus' of 1675. After de Wit's death in 1710, the plates were acquired by Louis Renard, who substantially revised many of the charts and published them, in 1715, in his 'Atlas de la Navigation' (the present work). Although Koeman questions the merits of publishing old, albeit reworked, plates with the market so well catered for by the likes of van Keulen, the atlas proved popular, and subsequent editions were published by Renard in 1739, by the brothers Reiner and Josua Ottens in 1745, and as late as 1802 by G. Hulst van Keulen. With each new edition the plates were reworked, which would suggest that the work was used aboard ship and not only for consultation on shore. Renard extensively reworked the majority of the plates, redrawing the coastlines and adding new place names. He also fixed a new strip to the folding chart of Europe to include Greenland.

Provenance
Bookplate of A.E. Foote (1846-1895), a minerologist and scientific book dealer, who set up shop in Philadelphia in 1875.


Totius EUROPÆ Littora
Novissimè edita,
Pascaert vertoonende alle de See-custen van
EUROPA
't Amsterdam by
L. Renard.
Marocco
HISPANGIEN
Portugal
Granada
Murcia
Valenza
Catalonia
VRANKRYK
DUYTS-LAND.
Provence
Lombardia
Istria
Croatia
HUNGARIA
POLEN
Coerlandt
LITTAUWEN
Lyflandt
Pruyssen
Pomeren
Meklenburg
NEDERLANDT
YRLAND
SCOTLAND
YSLAND
NOORWEGEN
DENEMARKEN
SWEDEN
Finmarcken
Corelia
LAPLANDT
Oostvinlandt
RUSLANDT
BARBARIA
NATOLIA
SYRIA
Grecia

The Ducs de Luynes copy of the first edition of Du Halde's "encyclopedic survey of China"

20 **DU HALDE, Jean Baptiste**

Description Geographique Historique, Chronologique, Politique, et Physique de l'Empire de la Chine.

Publication
Paris, P.G. Lemercier, 1735.

Description
Four volumes, folio (420 by 285mm), 65 plates and engraved maps, mostly folding or double-page, full contemporary speckled calf, coats-of-arms of the Ducs de Luynes, spine in seven compartments separated by raised bands, lavishly gilt.

References
Augustin de Backer and Carlos Sommervogel, Bibliothèque des écrivains de la Compagnie de Jésus, (Liège: L. Grandmont-Donders, 1869-1876) IV, 35; Brunet II, 870; Cordier Sinica I, 45-48; John Lust, Western Books on China Published up to 1850 (London: Bamboo, 1987), 12; A.H. Rowbotham, "The Impact of Confucianism on Seventeenth Century Europe", The Journal of Asian Studies 4 (1945); Seymour Schwarz and Ralph E. Ehrenberg, The Mapping of America (London: Wellfleet Press, 1980).

The Luynes copy of the first edition of du Halde's "encyclopedic survey of China" (Lust), and one of the earliest European sources on Chinese ceramics.

Du Halde, who became a Jesuit priest in 1708, was entrusted by his superiors to edit the published and manuscript accounts of Jesuit travellers in China. The present work records the narratives of 27 of these missionaries. The narratives cover every aspect of Chinese society, from the language to the production of silk and porcelain. China was highly fashionable in France at the time. The Abbé Raynal, for example, emphasised China's lack of hereditary nobility, the 'benevolent despotism' of the Emperor, and the supposedly moderate taxes, all issues in contemporary France. This interest in China's political system was offset by an interest in its literature. Parts of Confucius had been translated into Latin in 1669, and Voltaire himself advocated reading Confucius' works. The publication of Du Halde's book marked the point at which "French Sinophilism developed into Sinomania" (Rowbotham). Not only did it provide an insight into this remote and exotic land, but it also included 42 maps of the Chinese provinces by Jean Baptiste Bourguignon d'Anville. These were the most accurate maps of the country to date, based upon a survey carried out by the Chinese state in 1708.

The most notable of the narratives is the 'Relation succinte du voyage du capitaine Beering dans la Sibérie', which is the first published account of Vitus Bering's 1728 voyage through the eponymous strait, the importance of which he failed to recognize after sighting no land. The accompanying double-page map bound between pp. 452 and 453 is based on Bering's manuscript map, which was given to the King of Poland and in turn passed to Du Halde to be reproduced here. Bering's map is "the first printed map of part of present Alaska" (Schwarz and Ehrenberg).

Provenance
Bibliothèque des ducs de Luynes, Château de Dampierre, France.

Charles Louis d'Albert de Luynes (1717-1771), fifth Duc de Luynes. He was a soldier, taking part in campaigns in the Wars of the Polish and Austrian Successions. He participated in the attack of Prague in 1742, and, in 1754, he was created a Colonel General of the Dragoons. From 1757 to 1771, he was the Gouverneur de Paris, an ancient military rank representing the king in the capital. He was also created a Knight of the Order of the Holy Spirit at Versailles in 1759. He was buried at the Chapelle de Saint Jean l'Évangeliste at the Église Saint-Sulpice, Paris.

Tom I. ala Tête devant le frontispice

Avertissement
sur l'Enluminure de cette Carte

la Chine divisée en 15 Provinces
a été colorée de carmain ou de rouge

la Tartarie Chinoise divisée en 6 portions
de bleu ou couleur d'eau

Le Royaume de Corée de safran ou jaune

le Tibet qui confine à la Chine du côté du couchant
et la partie occidentale de la Tartarie
n'ont point de division de couleurs
par conséquent est difficile d'établir
des limites bien précises dans cet endroit

On a mis à part
que dans l'étendue de la chine
les Villes qualifiées du titre de Fou
ont été écrites en lettre Romaine ;
celles de Tcheou en Italique
On a negligé les Hien ou Villes du 3e Ordre,
et compté d'être raisonnable à propos
d'indiquer certaine bonne de remarque
qui ne sont point Tcheou
en les distinguant par une position
particuliere et carrée

Les lignes qui commencent ici
sont représentés dans celle
sur la Carte générale de la
Tartarie Chinoise.

CARTE LA PLUS GENERALE
ET QUI COMPREND
LA CHINE,
LA TARTARIE CHINOISE
ET LE TIBET
DRESSÉE SUR LES CARTES PARTICULIERES
DES RR PP JESUITES,
PAR LE Sr. D'ANVILLE Geographe ordre du Roi,
QUI Y A JOINT LE PAYS COMPRIS ENTRE KASHGAR
ET LA MER CASPIENNE
tiré des Geographes et des Historiens Orientaux
M DCC XXXIV.

ECHELLE
Lye ou Etadet Chinois de 250 au Degré
Lye de 200 au Degré
Lieues Françoises de 25 au Degré
Lieues de 20 au Degré

PAYS DES KALKAS
PAYS DES ELUTS
CHAMO
MONGOUS
ORTOUS
COBI ou Desert de Sable
Desert de Kobi
Sablonneux
Pierreux
Desert de Gobi
Mer Caspienne
Mer de Kin
Mer de Corée
Mer de la Chine
Royaume de Corée
Royaume de Tonquin
Isle de Haynan
Isle de Formose
Kashgar
Turfan
Hami
Barkoul
Sucheu
Kamul
Ninguta
Kirin Oula
Leaotcheou
Ngan nan ou Tong King
Ye qua Kiang ou Fleuve d'Or
Fleuve Jaune
Fleuve Bleu
Fleuve Kiang
Fleuve Kin
Fleuve Amur
Fleuve Selinga
Fleuve Kirin Oula
Fleuve Kamul
Fleuve Kashgar
Fleuve Turfan
Fleuve Hami
Fleuve Barkoul
Fleuve Sucheu
Fleuve Ninguta
Fleuve Leaotcheou
Fleuve Ngan nan ou Tong King
Fleuve Ye qua Kiang ou Fleuve d'Or
Fleuve Jaune
Fleuve Bleu
Fleuve Kiang
Fleuve Kin
Fleuve Amur
Fleuve Selinga
Fleuve Kirin Oula
Fleuve Kamul
Fleuve Kashgar
Fleuve Turfan
Fleuve Hami
Fleuve Barkoul
Fleuve Sucheu
Fleuve Ninguta
Fleuve Leaotcheou
Fleuve Ngan nan ou Tong King

Henry Overton's sales catalogue

21 OVERTON, Henry

A Catalogue of Maps, Prints, Copy-Books, &c. from off Copper-plates, Which are Printed for, and Sold by Henry Overton, at the White-Horse, without Newgate, London: where All Gentlemen, Merchants, City and Country-Shopkeepers, and Chapmen, may be furnished at the Lowest Prices, and Best Hand.

Publication
London, 1754.

Description
Octavo (175 by 105mm), 79pp., stab-bound, blue paper covers, with loss at spine.

References
Oxford Browne E9.9[5].

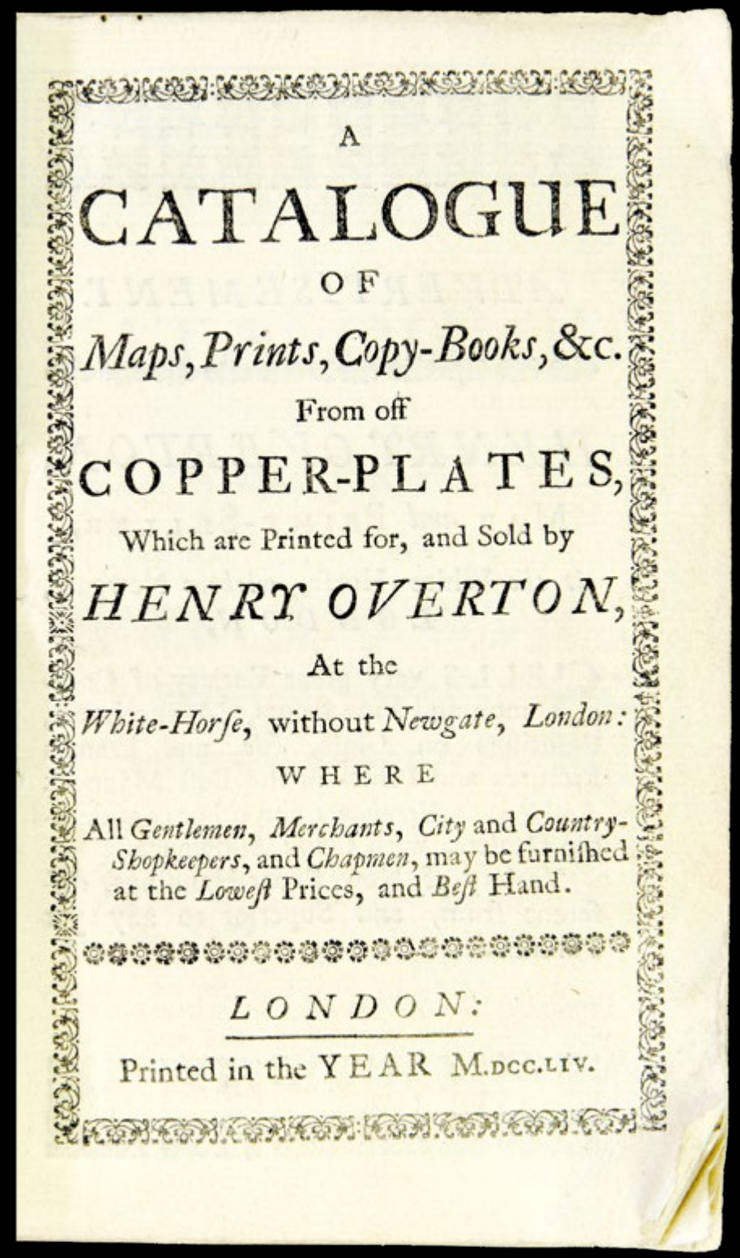
Extremely rare catalogue of Henry Overton's stock published in 1754.

The Advertisement on page two states that Henry Overton: "Sells very great Variety of Common and Fine Prints, Mezzotinto's, Paintings on Glas (sic), &c. and Frames Pictures and Prints in the Best Manner: And Serves Merchants and other considerable Dealers, with Good Allowance. Variety of New Paper-Hangings, different from, and Superior to any yet Published".

The catalogue begins with the largest and most impressive items of Overton's stock: his large wall maps printed on four sheets, listed here as a map of the world; a map of the British Isles; a map of England and Wales; and a map of the war in Flanders. All of which may be had, "pasted on cloth with a roll and a ledge, and handsomely coloured" for a mere six shillings. The catalogue goes on to list maps on three sheets; two sheets, "each about three foot by two foot"; prints on two sheets including a set of Hogarth's 'A Rake's Progress'; maps printed on one sheet, including 58 maps by John Speed; prints on one large sheet, including historical scenes and views of London by Canaletto; prints of Roman antiquities after Paulo Panini; views of Scotland by Sandby; views of Ireland by Tuder; views of European cities, most notably by Piranesi and Zocchi; seascapes; views of China and the Far East; prints by Wenceslaus Hollar; drawing books; copy-books; mezzotints; and a large selection of cheap prints on half a sheet of Fool's-Cap paper, "chiefly intended for children to play with".

The catalogue ends with an advertisement for wallpaper or "paper hangings for the adornment of rooms, stair-cases, and closets" produced by a new method of "colours in oyl". Although the originator of this new process is not named, he is said to have 20 years experience on the continent perfecting his art. The advert goes on to defend the artist against the accusation that the wallpaper "retains a bad smell being printed in oyl colours, and is not so bright as works performed by paper stainers". The advert ends with a list of chintz and stucco patterns, and states that if these prove popular the proprietors "propose to publish three new patterns anually". The artist who introduced this new printing process was John Baptist Jackson (c.1700-1770). Originally from London, Jackson was apprenticed to Jean Michel Papillon in Paris before settling in Venice by 1731. Disillusioned with the intricate engraving techniques then dominant, he determined to revive the bold chiaroscuro woodcut style of the early Northern European masters. He returned to London in 1745 and set upon his wallpaper venture, which turned out to be a catastrophic failure. This advert was one of the last throws of the dice.

We are only able to trace two institutional examples of the present work: an incomplete example housed at the Paul Mellon Centre (47 of 79pp.), and an example in University College Library, Oxford.


A
CATALOGUE
OF
Maps, Prints, Copy-Books, &c.
From off
COPPER-PLATES,
Which are Printed for, and Sold by
HENRY OVERTON,
At the
White-Horſe, without *Newgate, London:*
WHERE
All *Gentlemen, Merchants, City* and *Country-Shopkeepers,* and *Chapmen,* may be furniſhed at the *Loweſt* Prices, and *Beſt* Hand.
LONDON:
Printed in the YEAR M.DCC.LIV.

Müller's exceedingly rare work on the American War of Independence with an unrecorded third part

22 **MÜLLER, Johann Carl**

Geographische Belustigungen zur Erläuterung der neuesten Weltgeschichte ... Colonien in Nord-Amerika, nebst eien Plane von Boston [and] Geographische Belustigungen ... Karte von Long-Island [together with] Geographische Belustigungen ... Insel in Brasilien.

Publication
Leipzig, In der Johann Carl Müllerischen Buch-und Kunsthandlung, 1776 and 1778.

Description
Three parts, quarto (230 by 190mm), woodcut decorative vignette on title, woodcut headpieces, four engraved folding maps, all with original hand colour, one folding table on two sheets, stab bound.

References
Donald H. Cresswell, The American Revolution in Drawings and Prints (Washington: Library of Congress, 1975), 706; Alex Krieger and David Cobb, Mapping Boston (Cambridge and London: MIT Press, 1999), 181; Nebenzahl, Battle Plans, 18; Mary Sponberg Pedley, The Map Trade in the Eighteenth Century (Oxford: Voltaire Foundation, 2000), 27-30; John Sellers and Patricia van Ee, Maps and Charts of North America and the West Indies (Washington: Library of Congress, 1981), 924.

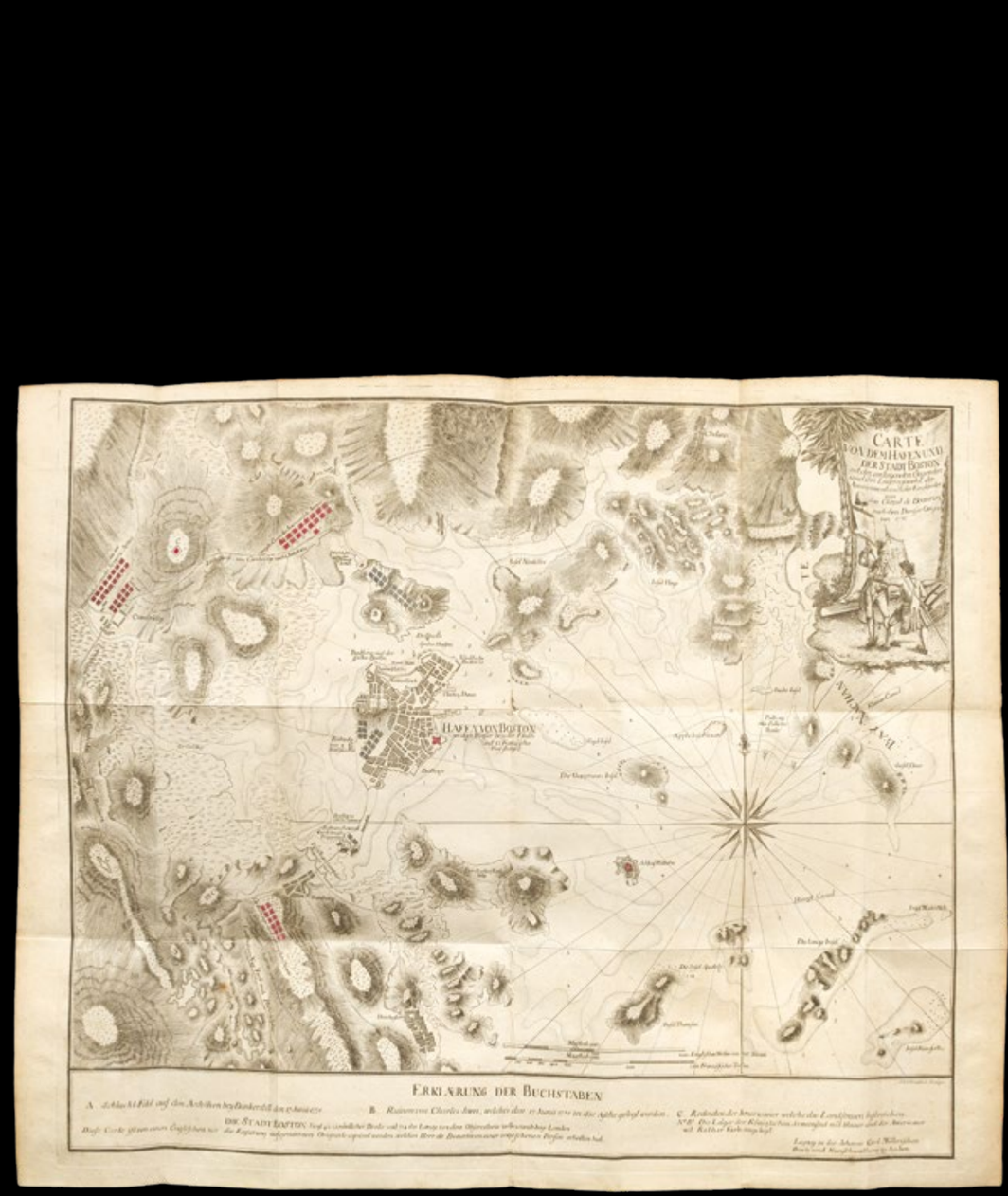
A fine copy of this fascinating work focusing on contemporary international affairs, including an unrecorded third part. As well as containing scarce maps including "the only German map of Boston [made] during the Revolutionary period" (Krieger and Cobb), it also includes a broadside detailing the most up-to-date sources on North America at the time. A primary source offering an opinion on the relevant merits of contemporary cartographic sources is exceptionally rare.

The text in the first two parts provides details of the history of the English in North America, followed by sections on British and French colonies and a brief summary of the origins of the American Revolution. The text in the third part, published two years later, provides information upon the Russo-Turkish War in the Crimea.

The first part contains a highly important map of Boston, based upon a map produced by the French royal geographer Jean de Beaurain in the same year, which drew in turn on the map of Boston prepared by J.F.W. Des Barres, a Swiss-born surveyor who made the famous 'Atlantic Neptune' on behalf of the British government in America. The map captures the beginning of the Siege of Boston, as the British army prepared to face George Washington's Continental forces. Boston's position on a narrow peninsula looked increasingly precarious. In an improvement over its French predecessor, the present edition makes a clear reference to the Battle of Bunker Hill (June 17, 1775), noting the "Ruinen von Charles=town [sic]" Around the city, the placement of the respective forces is depicted with unparalleled accuracy, with the British troop lines highlighted in blue and the Continental troop lines in red. Washington's forces are split into three divisions, with one placed at Cambridge, one at Charlestown Neck, and another above Roxbury. The observer will notice that the British commanders elected not to place troops atop Dorchester Heights. Washington later took this ground, giving him a distinct advantage over the British in the ensuing siege. The British were compelled to leave the city in March 1776.

The second part contains a map of Long Island, based on a map of the same area published by Thomas Jefferys in his West India Atlas of 1775, and another of North America, based on Rigobert Bonne's two sheet map, which has been updated to show the results of the American Revolutionary Wars. The 13 independent colonies on the east coast are separated from the remaining British possessions in the north by a faint red line; Spain's remaining territories, including Mexico, are outlined in yellow. It is accompanied by descriptions of each state's history, major towns, system of government, exports and natural features.

The third part contains a map of North America showing the theatre of the American Revolutionary Wars, with the 13 colonies outlined in red. At the lower left is a table showing the distance between major cities, with a text below providing details on the territories named



on the map. The second map is of the Crimea which was, at the time of printing, steadily coming under the control of Russia. It occupied a precarious position between the Russian and Ottoman Empires, and at the time of publication was struggling to form a supposedly independent government under Russian supervision. Five years after this map was published, Catherine the Great finally issued a manifesto annexing Crimea on the grounds that it had not provided the requisite spoils of war set out in previous treaties; in reality, it had become far too costly to prop up a puppet government in a strategically crucial state.

Finally, there is a very rare broadsheet, which lists details of British colonies in North America. The columns detail their geography, climate, exports, cities, and inhabitants, but of most interest is the final entry for each one. This lists the books and maps considered to be the most authoritative for that territory, suggesting the important role of cartography in the dissemination of information about current events. It is fascinating to compare contemporary opinion with well-known maps today and, in general, see that they have stood the test of time. On the American side, Müller advocates Joshua Fry and Peter Jefferson's map of Virginia and Maryland. Overall he recommends mainly British cartographers, including Captain John Montresor's map of New York and Thomas Jefferys' maps of New Jersey, Nova Scotia, and Florida, following his own advice by using Jeffery's map as a basis for his plan of Long Island. This is unsurprising, given the vested British interest in having accurate maps of the Americas in a period when boundaries of empire were fought over on paper as well as on the ground. However, Müller's choices also show that, in war, good cartography transcends the allegiance of its creator. The best map of Carolina is given as Henry Mouzon's 'Accurate Map of North and South Carolina'. Henry Mouzon was a surveyor whose family fought on the revolutionary side during the American War of Independence, and his map was used by George Washington. This did not, however, prevent Sir Henry Clinton, the commander of the British armies, from using Mouzon's map as well.

The first two parts, issued in 1776, are extremely rare. There are no auction records: Sabin notes the first part, but was evidently unaware of the existence of the second part; OCLC records only one example of this work, with both parts, in the New York Public Library. The third part is apparently unrecorded. We have not been able to trace either any institutional examples, or any examples coming to auction.

Bartolomeo's striking portolan of Europe

23 **OLIVES, Bartolomeo**

[Portolan Chart of Europe].

Publication
Mallorqui en Napols, 1550.

Description
Pen, ink, and wash colour on vellum, extending west to east from the Canary Islands to the Holy Land, and north to south from the Baltic Sea to the Red Sea, islands in blue and red, rivers in blue, mountain ranges in green, red and brown, heightened in gold and silver, numerous coastal place-names in red and sepia in semi-italic lettering, six large compass roses, the whole chart divided by red, green, and sepia rhumb lines, four scale-bars to upper and lower border, depiction of the Virgin and Child, north of the Canary Islands.

Dimensions
560 by 945mm (22 by 37.25 inches).

References
Richard L. Pflederer, Census of Portolan Charts & Atlases, (privately published, 2009); Pflederer, Finding Their Way at Sea: The Story of Portolan Charts, the Cartographers who Drew Them and the Mariners who Sailed by Them, (Houten: Hes & De Graaf, 2012), 98.

Fine and large portolan chart of Europe.

The portolan chart originated in thirteenth century Italy, as an aid to the pilots navigating their way across the often treacherous Mediterranean Sea. They are characterized by rhumb lines, lines that radiate from the centre in the direction of, often elaborate, wind or compass points that were used by pilots to lay courses from harbour to harbour. Generally drawn on vellum and often embellished in silver and gold, they were, at their height during the fifteenth and sixteenth centuries, some of the most beautiful examples of the mapmaker's art ever produced.

This particular portolan chart is the work of Bartolomeo Olives (fl.1538-1585), a senior member of a Mallorquin family of prominent early chart makers. He began his working life in Majorca, moving to Italy around the middle of the sixteenth century, and finally settling in Messina. Richard Pflederer records 15 examples of Bartolomeo's work in his census of portolan charts and atlases, ranging in date from 1538-1585.

The present chart is signed and dated 1550, and is the third earliest dated work by Bartolomeo: examples in the Museu Maritim, Barcelona, and Biblioteca Generale, Venice are both dated 1538. Another chart housed in The Hispanic Society of America in New York bears the date 1550, and the place of publication as Palermo, Sicily. Bartolomeo is believed to have moved to Italy from Majorca in around 1550. This is borne out by the present chart, which gives the place of publication as Majorca and Naples – the only chart by Bartolomeo to bear such an inscription.

A great deal of his work is typical of the so-called 'Catalan School', with the use of flags to denote dominions, vignettes of important ports, the use of elaborate wind or compass roses, and the Red Sea coloured red. Of the 15 institutional examples recorded by Pflederer, we have managed to consult six (Museu Maritim, Barcelona; Museo Correr, Venice; Bodleian Library, Oxford; Osher Library, Portland; Huntington Library, San Marino), and an example that appeared at Sotheby's in 2000, from which we can draw some tentative conclusion about Bartolomeo's style.

Bartolomeo's style would appear to be remarkably consistent throughout his career: a religious figure, usually the Madonna and Child, is depicted at the neck of the chart (the Barcelona example depicts God); in the Atlantic he places his name, place of production, and date, in gold; to the four corners are scale bars; he uses letters for the cardinal points on several of the wind or compass roses (northeast by the letter 'G' for the Griego wind, east with a Maltese Cross, southeast 'S' for the Syrroccho wind, south 'O' for Ostro, southwest 'A' for Africus, west 'P' for Ponente, and northwest 'M' for Maestro); the stylized depictions of ports and towns, most notably that of Venice and Genoa. In terms of colour

Bartolomeo tends to limit his palette to green, red, blue, and sepia, with highlights in gold and silver.

What is somewhat unusual about the present chart is the depiction of mountains and cities within the interior, with the Alps, the Atlas Mountains, and the Rock of Gibraltar drawn. Of the ten ports and cities on the present map, seven are common to several of the consulted charts: Porto, Lisbon, Valencia, Barcelona, Genoa, Venice, and Alexandria; the other three, although not named, can be tentatively assigned to Amsterdam (the name 'olanda' [Holland]), (?) Antwerp, and Vienna. Of the charts consulted, only Bartolomeo's atlas housed in the Huntington Library depicts cities within the interior.

We are only aware of one other portolan chart by Bartolomeo being offered for sale in the last 35 years: Sotheby's, 12 June 2000, lot 107.


Bartomeu oliues mallorqui en napols 1550

A sixteenth century Mediterranean portolan

24 **[OLIVA, Joan]**

[Plan des cotes de la mer mediterranee].

Publication
[?Messina, c.1595].

Description
Pen, ink, and wash colour on vellum, extending west to east from Cape Finisterre to the Holy Land, and north to south from the Adriatic to the north coast of Africa, islands in red,blue and gold, rivers in blue, numerous coastal place-names in red and sepia in semi-italic lettering, six large and small compass roses all with fleur-de-lys north points, heightened in gold, Christogram to neck, image of Calvary to the Holy Land, the whole chart divided by red, green, and sepia, rhumb lines extending from the compass roses, gilt borders, scale upper left, lower left and lower right, a few small holes right portion of chart, one to left portion.

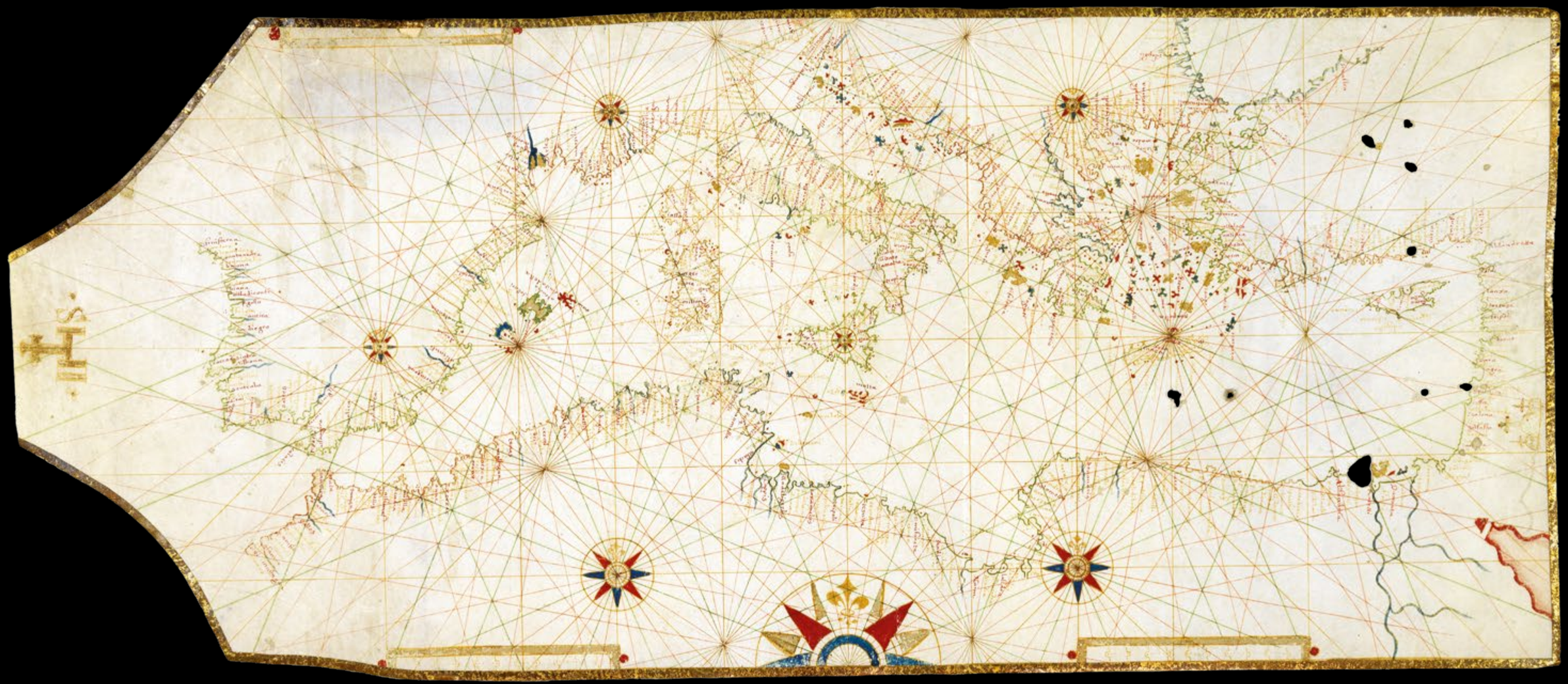
Dimensions
455 by 195mm (19 by 7.5 inches)

References
Richard L. Pflederer, Census of Portolan Charts & Atlases, (privately published, 2009); Pflederer, Finding Their Way at Sea: The Story of Portolan Charts, the Cartographers who Drew Them and the Mariners who Sailed by Them, (Houten: Hes & De Graaf, 2012), 98.

Finely drawn chart of the Mediterranean attributed to Joan Oliva.

The chart has been attributed to Joan Oliva (fl.1570-1614), a leading member of the Olives family, a cartographic dynasty who dominated portolan production in Europe during the sixteenth and early seventeenth centuries. Charts signed by no fewer than sixteen different members of the Oliva family are recorded between 1538 and 1673, and individual members apparently worked throughout the Mediterranean world, as their charts originate from Majorca, Messina, Naples, Livorno, Florence, Venice, Malta, Palermo, and Marseilles. The exact relationships of the various members is unclear, but Joan appears to have been one of the most prolific and highly regarded. The earliest of his charts were executed in Messina, but he is also recorded as living in Naples as well as Marseilles, where he is thought to have died.

The present chart is a fine example of his work, with liberal use of gold leaf to the compass roses, islands, river mouths, Christogram and border. The coastline and cursive script are all finely drawn, and the whole chart is criss-crossed with lightly drawn rhumb lines. The eastern half bears similar stylistic traits with a signed chart dated 1599, and housed in the Biblioteca Nazionale Marciana, in Venice. The rendering of both Crete and Cyprus is almost identical, as are the placement of the rhumb lines. In the Holy Land, Calvary is depicted in a similar fashion and there is a small bridge over the tip of the Red Sea.



A nation defined … an Elizabethan wall map by "the father of English cartography"

25 **SAXTON, Christopher**

The Travellers Guide being the best Mapp of the Kingdom of England and Principality of Wales Wherein are Delineated 3000 Towns & Villages more than in any Mapp yet Extent besides ye Notations of Bridges & Rivers &c. To which is added ye Direct and cross Roads according to Mr Ogilby's late Survey. Described by C. Saxton And now carefully Corrected with New Additions by Phillip Lea.

Publication
London, [1583, but c.1716].

Description
Engraved wall map, printed on 20 sheets, joined, with fine original full body colour.

Dimensions
1350 by 1710mm (53.25 by 67.25 inches).

References
Ifor M. Evans and Heather Lawrence, Christopher Saxton, Elizabethan map maker (London: Holland Press, 1979), 9-43; Shirley, British Isles, 137.

Christopher Saxton's wall map is a result of the first survey of the whole of England and Wales, and is the first map of those countries to give all the place names in English.

Saxton has been dubbed "the father of English cartography" (Skelton), see item 12 for a discussion of Saxton's life.

The idea of making a survey of the kingdom and its parts in a consistent format developed in the mid sixteenth century. Although the first English map of Britain, by Matthew Paris, had appeared in about 1250, it was not until the mid fifteenth century that the principles of mapping were fully understood. These techniques emerged, in part, as a result of the practical needs of military engineers: military surveyors were well able to draft plans and topographical maps to scale by the 1540s. Estate surveys also became increasingly popular, as the advent of enclosures necessitated the definition of land boundaries. Thus, a large number of treatises on surveying and the use of the cross-staff appeared. Such interest led to the construction of increasingly sophisticated surveying instruments, resulting in a new accuracy in mapping.

Saxton's wall map dates from 1583, and was published separately from his atlas of 1579. Only two copies of the first state of the map are known to exist: one in Birmingham Public Library, printed on paper with watermarks consistent with the date on the map; the second example is bound in atlas form in the British Library and is probably a reprint from the original plates by William Web, dating from c.1642. "After the Restoration, Saxton's map was reissued on several occasions by publishers who made considerable alterations to the plates" (Shirley). Of these, only the second state, published by Cade and Morgan in 1678, is known to have been issued as a 20-sheet wall map. The others were printed in a travelling "portmanteau" format by Philip Lea. However, "the excellence of the engraving and the rich style of the Elizabethan decoration can only be appreciated fully when the map is seen as a single work" (Shirley). The present example, however, was issued once again in the intended wall map format. It bears the imprint of Philip Lea, but with the "Fleet Street" address of his widow, Anne. It is, therefore, according to Skelton, the seventh state of the map and dates from 1716-1720.

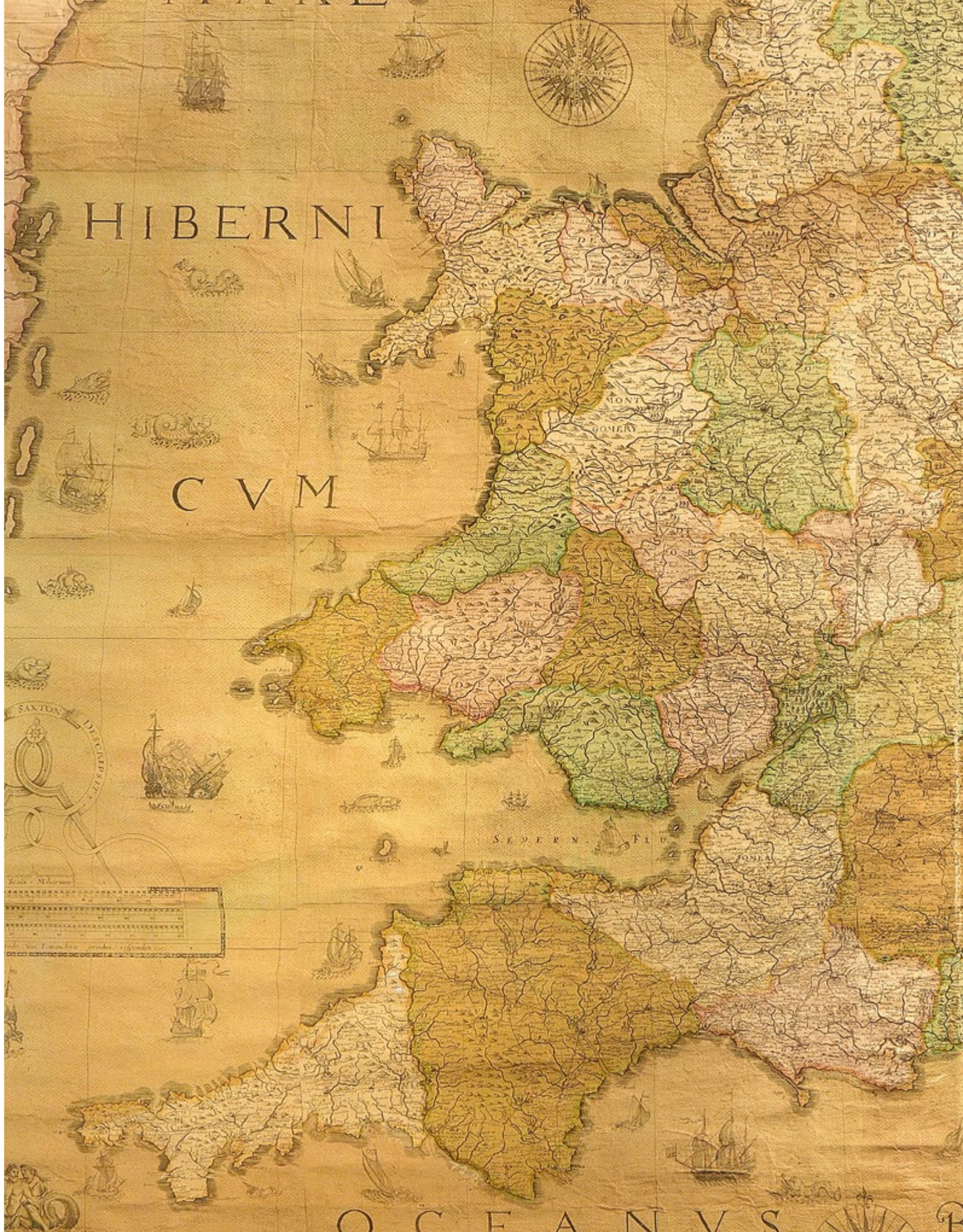
The map does not include the name of an engraver, but it is generally accepted that it is Augustine Ryther, who engraved Saxton's earlier map of England published in his county atlas. Ryther was the most accomplished of a team of seven English and Flemish engravers who worked on the county maps in the atlas. Comparison with the county maps shows that Saxon has modernised the spelling of several of the place names and redrawn the Isle of Wight. Bodies of water, vegetation, settlements and notable buildings are all identified. Hills and mountains are also pictorially defined; the "aim was to convey an impression of topography rather than to provide precise information on


SCOTIÆ PARS
MARE
HIBERNI
CVM
OCEANVS
GERMA
NICVS
GAL:
LIÆ
PARS
OCEANVS BRITANNICVS
The Travellers Guide
being the best MAPP of the
KINGDOM of ENGLAND
and PRINCIPALATY of WALES

the location and altitude of individual summits" (Evans and Laurence). Saxton has used the old English mile of ten furlongs, as the eight furlong mile was not instituted until 1593.

Saxton's depiction was adopted subsequently by Mercator, Speed, Blaeu, and Jansson, and was recognised internationally as the standard representation of England and Wales until the second half of the eighteenth century.

Examples of Saxton's map, in any form, rarely come to market. We are only aware of one example selling at auction in the past 50 years: a later version by Thomas Bowles from around 1720 at Sotheby's New York on 12 November 1968, lot 28A.



One of the earliest maps to depict Drake's circumnavigation

26 **[after VAN SYPE, Nicolas]**

La heroike interprinse faict par le Signeur Draeck d'avoir cirquit toute la terre.

Publication
[?Antwerp, c.1590].

Description
Engraved world map, hand-coloured, printed on paper watermarked with a bunch of grapes with the letters "IG' (conforming to Gravell Watermark Archive GRP.073.1, dated 1590).

Dimensions
243 by 445mm (9.5 by 17.5 inches).

References
Hans P. Kraus, Sir Francis Drake: A Pictorial Biography (Amsterdam: Nico Israel, 1970), 48; Shirley, World, 149 and 151; Henry R. Wagner, Sir Francis Drake's voyages around the world (San Francisco: John Howell, 1926), 424-434.

This separately published broadside map is one of the earliest to record Drake's celebrated voyage. The voyage was the first by an Englishman and only the second after Magellan, and as such was of huge significance. It challenged Spain's hegemony of the New World at the same time that England was confronting her power over Europe. The circumnavigation was also good business, with a return on the original investment of 4,600%. The Queen's own share, according to John Maynard Keynes, was enough to pay off England's foreign debt, leaving enough to finance a new venture, The Levant Company.

The map highlights the voyage's importance with the path of the ships marked by three bold dotted parallel lines. Five ships are shown leaving the English Channel on 13 December 1577 and making their way to the first stop, the Cape Verde Islands. Drake then sailed across the Atlantic to the Río de la Plata ("R. del plato") then down to Port St Julian ("S. Jiliaen"), where they wintered for two months. The passage through the Straits of Magellan was treacherous: the last of the three small boats was lost, and Drake was separated from the 'Elisabeth', which headed back through the straits and returned home. Drake's passage though the straits provided evidence that the fabled 'Terra Australis' did not come as far north as had been previously supposed. His solitary ship is depicted sailing up the west coast of the Americas, where he plundered several Spanish outposts. Drake also explored the coast of upper California, naming it Nova Albion (as shown on the map). He is believed to have sailed as far as Vancouver Island, most probably in a vain search for the Northwest Passage. The map then shows him crossing the Pacific and heading for the Philippines. His arrival at the island of Ternate in the East Indies is depicted in the lower left cartouche, where he gained a valuable cargo of cloves from the island's ruler. Drake's voyage almost came to an end when the Golden Hind hit a reef near Celebes after leaving Ternate, depicted in a vignette to the lower right. Fortunately, he managed to break free and continue his journey, sailing across the Indian Ocean, around the Cape of Good Hope and arriving at Plymouth on 26 September 1580: a journey of almost three years.

The present map was most likely derived from the 'Whitehall map', which Drake had prepared for Elizabeth in 1581. The map was described by Purchas in his 'Voyages' as hanging in the "Gallerie at White Hall, neere the Privie Chamber". It was destroyed by a fire in 1698. There are three known extant derivatives of the original Whitehall map. The first is the so called Drake/Mellon map, a manuscript copy, bearing the exact same title but with the addition of Drake's voyage to the Caribbean in 1585-1586, which is believed to be the most faithful representation of the original and held by the Yale Centre for British Art. The second,"One of the greatest cartographic treasures of the Elizabethan era", is by Nicolas van Sype (Kraus), and was published at

some point between 1580 and 1584. This is probably the earliest extant map to show Drake's circumnavigation. Sype's map bears the title 'La Herdike Enterprinse aict par le sigeur Draeck' and includes a cameo of Drake, giving his age as 42, and the line "Carte veuee et corige par le dict siegneur drack" (map seen and corrected by the aforesaid Sir Drake). Was this line a clever piece of marketing by van Sype? Or did he actually seek Drake's approval? We will never know. The cameo, if we take the accepted date of Drake's birth as 1540/41, does provide us with an approximate date of 1582/3 or later for the map.

The present map is an example of the third derivative, which has been extensively redrawn in comparison with the van Sype and Mellon maps: the cartographer's name has been removed, as has the description of Drake's landing in California, which has been replaced with a new northern Arctic continent above Canada ("Terae Orma"), Greenland has been extensively revised, and Nova Zemlya has been added. Drake's portrait appears in a circle, rather than an oval. In van Sype's original, Elizabeth I's coat-of-arms appeared on Tierra del Fuego but is absent here, and the land masses are filled with stylised mountains and cities.

There are two variants of this third derivative, each known only by a single copy. The earlier issue is held in the Huntington Library and has fewer toponyms. This is the second issue, the only other known copy of which is held in the New York Public Library. This is dated by Wagner to sometime after 1587, because the map names California, one of the first European maps to do so. Wagner suggests that it was modelled on Ortelius's world map of 1586, which would also account for the changes made in the Arctic Circle.

LA HEROIKE INTERPRINSE FAICT PAR LE SIGNEVR DRAECK D'AVOIR CIRQVIT TOVTE LA TERRE

Septentrio.

Beschryvinge van Reyse gedaen by Francoys Draeck mee 5 schepen. Waer af 2 verbrande en in de Straet en een verginck is Seylende Wyt Engelant den 13. Decembr. 77. Naeden westen om die Ganse Cloot des Aertriex int Oost wederom op te comende ende also In Engelant Den. 26. September 1580.

Comme le Cap.ne Draeck singlant d'Angleterre a cercui Entre l'an 77. et 80 toute la terre.

TERA FORMA

ASTOTELANT

TERRA NOVA

NOVA ALBIA

NOVA FRANCIA

FLORIDA

NOVA HISPANIA

DEL NORTE

OCEANVS

DENTALIS

INDIA OCCI

Quivira

Quinsai

Tournés p la cauſſe De La gliſſe

Cuba

Hispaniola

Mexico

C. de California

Guatimala

Nicaragua

Moluche

Helena

S. Iuan

Tierra del Fuego

Pnambouru R.e

Groen Iant

Islande

NOVA ZEMBLA

Colgoie

Pascoara

NORWEGIA

SVEG

RVSSIA

TARTARIA

Manji

Cataio

Cabola

Tangut

ASIA

Cambalum

PERSIA

TVRCHITON

Babilonia

Ormus

INDIA ORIENTALIS

CHINA

Goa

Calecut

Salem

Bata

Iaua minor

Pera

Pyscora

Cane

Co Colmegro

ARMENIA

MARE CASPIVM

ASIA MINOR

Trabe

Ierusalem

Iafo

EGIPTVS

BARBARIA Trypoli

AFRICA

C. de Verde

Canarie Pico

I. de Sal

S. Iacobo

Sierra Liona

Mynne

Genes

NVBIA

ARABIA

Mecha

MELINDE

Manicongo

S. Helena

S. Mauri

Ascen

S. Iuca

Las Roperas

Rouce de retoue

MARIN

AETHIOPICVS

OCEANVS

Priemere

SVR

CIRC. ÆQVINOCTIALIS

NOVA GVINEA

MAR DEL

Pedima

PERV

ICV TIA REG

BRESILIA

Arata

Chili

CHICA REGIO GIGANTVM

R. del Plato

S. Iuliaen

S. Elisabet

ESTRECHO DI MAGELLANES

Dat ghedeelte deel Dan Magellano d'en Draeck oock Quetten en sin nice dan Eylande Waer af t'ghedeelte by hem genaem S. Elysabet La partie meridionalle Magellanes ne sçeu qu'elle

SCALA MILIAR

17½ 200 300 400 500 600 700 800 900 1000

Die seerlicke Gheschenisse en Inbalinge Den Draeck beneffens sijnen Cooplieden Mattelosen mee 4 galeien en 18 cleine groote Tot voor de Majestaet 26 Augusti Lanmerckinge Reception dat ray des Maluques ghelic als dat Draeck

Beschrijnge vant Schip van Draeck Stoot ende 20. vren Lanck te gheren Schip die de heere daer naemen Verlies Comme le Vaisseau du Cap.ne Draeck Courut grand peril 20. Iours de long

Meridies.

4

Quad's rare map of the Danubian Lands

27 **QUAD, Matthias**

Celeberrimi Tractus Danubiani pars Praecipua ab Austrie Vienna Constantinopolim usque se Protendens Ungariam Transilvaniamqs Complectens.

Publication
Cologne, Peter Overadt, 1596.

Description
Engraved map on three sheets, joined.

Dimensions
480 by 1150mm (19 by 45.25 inches).

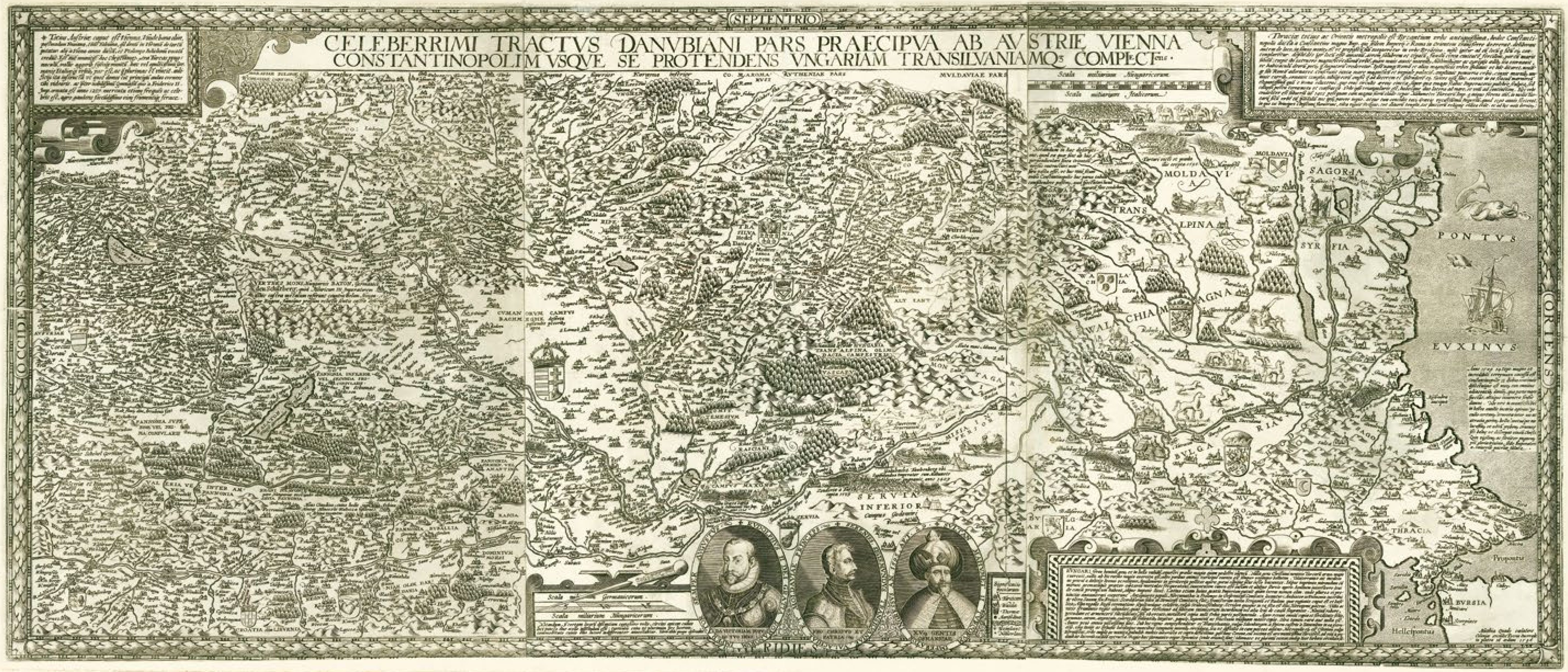
References
Peter Meurer, "The Cologne Map Publisher Peter Overadt", Imago Mundi 53 (2001): 28-45.

Rare separately published map of the Danubian Lands.

The map stretches from Vienna in the west to Constantinople in the east, and charts the course of the Danube from Vienna to the Black Sea. A key to the map shows Ottoman towns marked with a crescent, baths marked by a wooden tub, Weinland marked by an arrow, and Nosnerland marked by a star. There are numerous battle scenes along the banks of the Danube, including the Battle of Varna in 1444. A triumphant inscription at the upper right marks the defeat and plunder of the Tartars in battle near Iasi (Iassi) in 1595: "Tartari victi et praeda illis erepta". There are three cartouches in the corners containing text about Austria, Thrace (the Ottoman possessions in Europe), and Hungary. To the far right, above Constantinople, is a text block referring to the earthquake that hit the city in 1509, known to contemporaries as the Lesser Judgement Day. The map was published during the Thirteen Years War (1591-1606) fought between the Ottomans and the Hapsburg Empire for control of the Balkan states. In the bottom section of the map are portraits of the three principal combatants: Rudolf II, Holy Roman Emperor, King of Hungary, Croatia, and Bohemia; Sigismund Bathory, Prince of Transylvania; and the Ottoman Sultan Mehmed III (incorrectly marked as Mehmed II).

The map was the work of Matthias Quad (1557-1613), a German engraver who had learnt his trade from several Dutch masters, including Joannes and Lucas van Doetecum. He engraved maps for the 'Civitates Orbis Terrarum' (see item 11). The present work was made in partnership with the Cologne publisher Peter Overadt, based upon the 1567 map of the Danubian provinces by Gerard de Jode.

Rare. We are only able to trace four institutional examples: the Bibliothèque Nationale de France; Darmstadt; Göttingen University Library; and Würzburg University Library.


SEPTENTRIO
CELEBERRIMI TRACTVS DANVBIANI PARS PRAECIPVA AB AVSTRIÆ VIENNA
CONSTANTINOPOLIM VSQVE SE PROTENDENS VNGARIAM TRANSILVANIAMQ COMPLECTens.
Scala milliarium Ungaricorum
Scala milliarium Italicorum
OCCIDENS
ORIENS
PONTVS
EVXINVS
MOLDAVIA
TRANS ALPINA
WALACHIA MAGNA
BVLGARIA
SERVIA INFERIOR
THRACIA
SAGORIA
BVRSIA
Hellespontus
Propontis
CROATIA
Scala milliarium Germanicorum
Scala milliarium Ungaricorum

“Amsterdam at a singularly momentous point in its history”

28 **BAST, Pieter**

Amstelodamum Urbs Hollandiae Primaria, Emporium Totius Europae Celeberrimum.

Publicayion
Amsterdam, Claes Jansz. Visscher, [c. 1618].

Description
Engraved map on four sheets, joined.

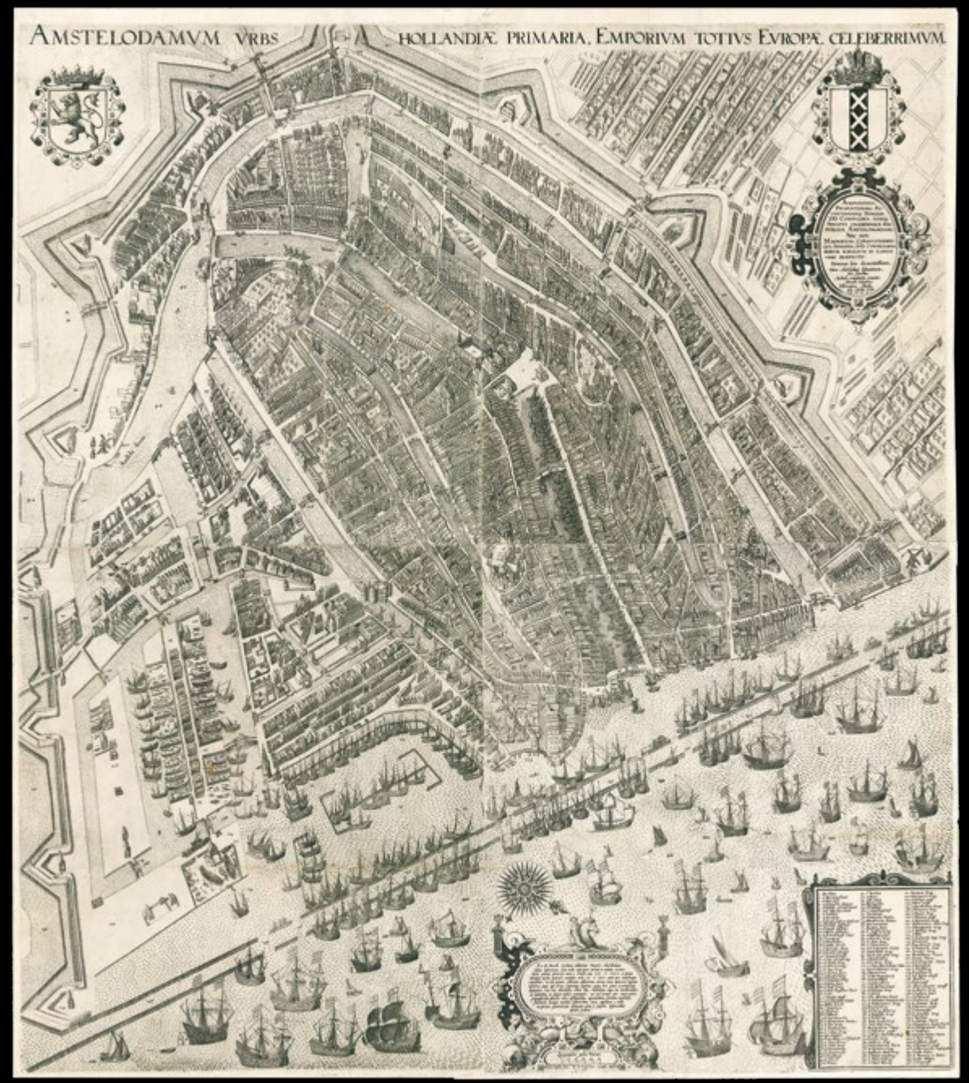
Dimensions
940 by 825mm (37 by 32.5 inches).

References
Antoine Everard d’Ailly, Catalogus van Amsterdamsche plattegronden (Amsterdam: Maart, 1934), 96; C.P. Burger, “Amsterdam in het einde der zestiende eeuw: studie bij uitgaaaf van den grooten plattegrond van 1617”, Jaarboek Amstelodamum 16 (1918), 1-101; W. Hofman, Historische plattegronden van Nederlandse steden, (Alphen an den Rijn: Canaletto, 1978) I, 27-28; Bodel Nijenhuis, De Leidse Graveur Pieter Bast (Leiden: Brill, 1872), 93-96; not in IKAR.

The final state of one of the most famous and influential maps of Amsterdam, first published in 1597. Pieter Bast (c.1550-1605) produced the first town plan of Amsterdam for half a century, updating Cornelis Anthonisz’s woodcut view of 1544. He may also have drawn on Braun and Hogenberg’s view of Amsterdam from ‘Civitates Orbis Terrarum’ (1572) (see item 11). It became the standard “for the critical period to 1625, the year of Balthasar Florisz van Berkenrode’s celebrated ground plan. During these three decades prior to 1625 Amsterdam evolved from a provincial emporium to a world capital ... Bast recorded the appearance of Amsterdam at a singularly momentous point in its history ... Bast’s print is no mere representation; it is a portrait” (Keyes).

As the primacy of Antwerp in the Low Countries slipped away at the end of the sixteenth century, Amsterdam moved to take its place. The city took in religious refugees and economic migrants alongside a growing native population, absorbing their skills and wealth. When Bast first made the map, the total area of the city remained the same as it had been a century before, while the population had quadrupled over the same period. The map shows the extensive building required by the expanding population: Anthonisz’s 1544 plan had 52 bridges, but Bast’s has twice that number. It also shows the source of the wealth driving Amsterdam’s expansion, through the fleet of ships bobbing in the harbour. At the lower left, the shipyard has been brought within the city walls, a reflection of the importance of the industry in Amsterdam’s East Indies trade after the foundation of the Dutch East India Company (VOC) in 1602.

The first edition of 1597 was followed by Herman Allard’s edition of 1599, which was considerably altered, including the addition of the title and Allard’s dedication to the burgomasters. After Pieter Bast’s death in 1605, Claes Jansz. Visscher probably acquired the plates, producing a new edition around 1606 in which the medieval walls were replaced by a “gracht” (large canal) encircling the city on the landward side. He would also use Bast’s work to create a ‘Profile of Amsterdam’ in 1611, combining a panoramic view of the harbour with text. The present edition includes several innovations, the most important being Hendrick de Keyser’s famous stock exchange, the first in the world, finished in 1611. It has a key to 150 numbered locations. Under number 100 it lists “d. niewe waegh” (the new weigh house). The weigh house was moved into the Sint Anthonispoort (Saint Anthony’s Gate) in 1617-1618, suggesting that the present edition of the plan was printed in or after 1618, but certainly before 1625, the year in which Balthasar Florisz van Berkenrode published a new plan, superseding Bast’s.



The Marriage of the Sea

29 **SCOLARI, Stefano and Giovanni MERLO**

Vero e Real Disegno Della Inclita Cita di Venetia.

Publication
Venice, Giovanni Merlo, 1660.

Description
Engraved plan on six sheets joined, right margin reinforced on verso, a few short tears, repaired on verso.

Dimensions
770 by 1585mm (30.25 by 62.5 inches).

References
Moretto, 82 state 1.

A large and impressive plan of Venice.

This plan of Venice on six sheets renders the city and the surrounding islands in great detail. In its size and grandeur it is reminiscent of Jacopo de Barbari's great plan of 1500. All major public buildings and churches are named. Gondolas can be seen on the Grand Canal, with a great flotilla of boats to the south. At the flotilla's centre is the "Bucintoro" (Bucentaur), the Doge's grand barge. The boats signify Venice's most important festival: the "Marriage of the Sea", which took place every year on Ascension Day. After a procession of boats sailed out from San Marco into the lagoon, led by the Bucentaur, the Doge would drop a consecrated ring into the water, a ceremony that symbolically wedded Venice to the sea for the coming year. The lion of St Mark stands above the plan, the symbol of the Venetian republic. To the upper left is an extensive dedication within a decorative drape, surrounded by cherubs. It bears the Correr coat-of-arms, a distinguished family of Venetian nobility. Angelo Correr (1326-1417) was Pope Gregory XII, and later, the great collector Teodoro Correr (1750-1830), would donate his collection to the city, with the works forming the core of the now famous Correr Museum. To the upper right is an epigram by Joanne Merula.

Stefano Scolari (fl.1643-1695) was an engraver and publisher working in Venice during the second half of the sixteenth century.

VERO E REAL DISEGNO DELLA INCLITA CITTA DI VENETIA

TRAMONTANA

PONENTE

LEVANTE

CANAL GRANDE

CANALE DELLA GIVDECHA

LA GIVDECHA

ARSENALE

MVRAN

ALL. ILL.mo ET ECC.mo SIG.r ANGELO CORNER
E.r ET PROCVRATOR DI S. M.ta

1666

The first accurate map of the moon

30 **CASSINI, Jean-Dominique**

Carte de la Lune.

Publication
Paris, Jean-Dominique Cassini, 1787.

Description
Engraved map.

Dimensions
557 by 567mm (22 by 22.25 inches).

References
Albert van Helden, 'The Telescope in the Seventeenth Century', ISIS 65 (1974); Helge Kragh, The Moon that Wasn't, (New York: Springer, 2008); Françoise Launay, 'The moon maiden of Cassini's map', Astronomy and Geophysics 44 (2003); Françoise Launay. "The leading lady of the map of the moon Cassini: A declaration of love", Astronomy 117 (2003); Scott L. Montgomery, The Moon and the Western Imagination, (Tucson: University of Arizona Press, 1999); Ewen A. Whitaker, Mapping and Naming the Moon (Cambridge, 2003); Ewen A. Whitaker, 'Selenography in the Seventeenth Century' in R. Taton and C. Wilson, Planetary Astronomy from the Renaissance to the Rise of Astrophysics (Cambridge: Cambridge University Press, 2003).

The first state of Cassini IV's reissue of his great-grandfather's rare and "elegant" lunar map.

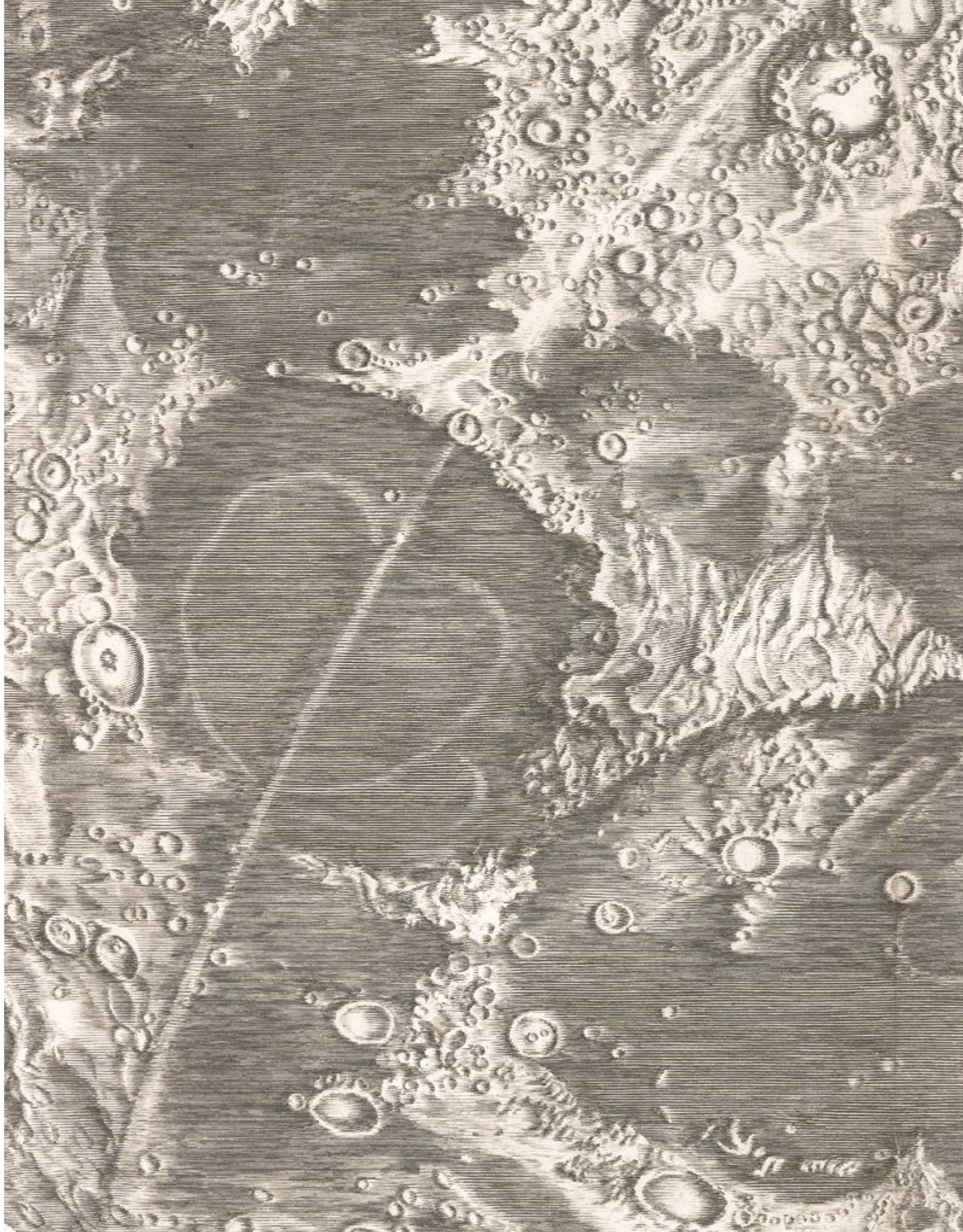
Jean-Dominique Cassini, known as Cassini IV (1748-1845), was born at the observatory in Paris which his great-grandfather, also called Jean-Dominique Cassini (1625-1712), had founded. The elder Cassini was born in Liguria, and studied at the Panzano Observatory under Giovanni Battista Riccioli and Francesco Maria Grimaldi. In 1669, he moved to France on the invitation of Colbert to help set up and become the first director of the new Paris Observatory. Cassini ordered a 34-foot telescope from the great instrument maker Giuseppe Campani for the new observatory, which would prove to be crucial in the creation of his lunar map.

Cassini made approximately 60 drawings of the moon between 1671 and 1679, with the assistance of the artists Sebastien Leclerc and Jean Patigny. The observations took place, when possible, during lunar eclipses, which provided unusual light patterns and a clearer view of the surface. 57 of these drawings remain in the library of the Paris Observatory. The copperplate for the map, engraved by Claude Mellan, was created with the help of the drawings. Both the technology and the observations made were so exciting that a manuscript map of lunar features appears in a 1680 painting at Versailles by Henri Testelin, showing Colbert introducing members of the Academy of Sciences to Louis XIV.

The three-dimensional quality given to the lunar features by Patigny and Mellan remained unsurpassed until the advent of photography. It was the first accurate map of the moon, completely "overshadowing" the contributions of Cassini's predecessors, which were highly stylised and lacked interior detail. Contemporary observers commented on their simplicity: Robert Hooke compared the portrayal of the lunar formation Hipparchus by Johannes Johannes Hevelius and Cassini's teacher Riccioli to show the relative paucity of information they provided.

Cassini's map, however, shows a level of detail visible only through a telescope of twenty feet in length or longer. The dimensions and positions of the major features are reasonably accurate, but the map's real strength lies in the wealth of verifiable information given on the lunar limb. The moon is oriented to the south, but with the lunar axis rotated about 30-45 degrees clockwise.

As well as representing a scientific advance, Cassini's map also staked a claim in a religious dispute. The moon had long been associated with the Virgin Mary, and an analogy drawn between the supposed purity of its surface and her chastity. Observations of the moon from Galileo onwards, however, had shown that the moon's surface was, in fact, far from perfect. It was covered with mountain ranges and pitted



with craters. Cassini's map was another firm rebuttal of the theory of the immaculate moon: despite this, Catholic astronomers only gave up the concept at the end of the seventeenth century.

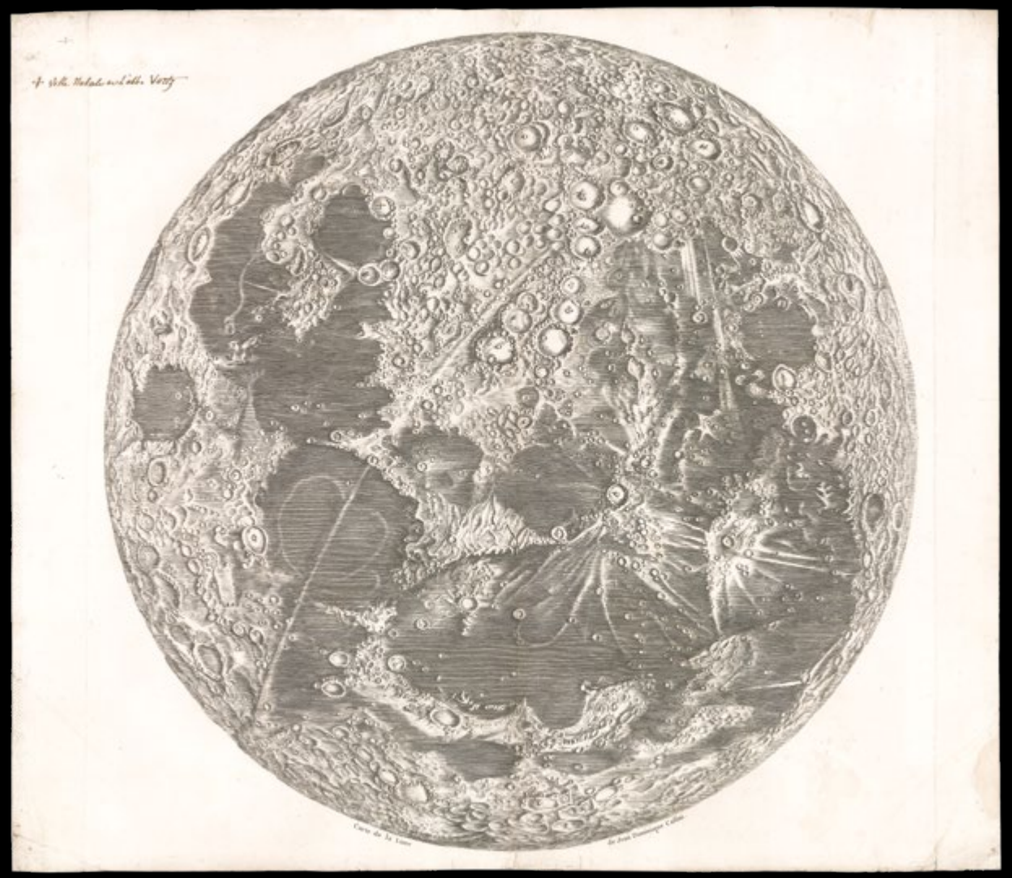
The map has two charming features which are widely supposed to have been included as a reference to the wives of the men involved. In the lower half, on the mountain range Promontorium Heraclides along the Gulf of Rainbows, is a woman's head in profile, with long flowing hair. It is based on a real lunar structure, but is supposed to have been modelled after Cassini's wife, Geneviève de Laistre. Cassini commissioned a pen-and-ink portrait of his wife from Patigny's son the year before the map was published, so the identification may be correct. The other is the marking shaped like the Greek letter phi (ϕ) which appears in the Sea of Serenity. As well as being shaped roughly like a heart, it also begins the Greek word philos, meaning love or affection.

Cassini IV was also an astronomer, and succeeded his father as director of the Paris Observatory in 1784. In 1787, he found the original copperplate of his great-grandfather's lunar map in the Observatory's archive and reissued it. This second edition is identical to the first, aside from the addition of 'Carte de la Lune … de Jean Dominique Cassini' to the lower edge. Cassini IV also published his own reduced version the following year. After the French Revolution in 1789, friction between Cassini IV and the National Assembly caused him to resign his post as Director. The following year he was briefly imprisoned before retiring to Thury, where he lived and worked for the rest of his life.

There is an interesting manuscript addition of a small cross in one of the craters in the upper half of the moon, keyed to an inscription that reads "Ville natale au l'abbe Vurtz". This appears to be a reference to Abbé Jean Mendel Wurtz (1760-1826), a relatively unknown cleric who attracted public attention in France after he published several mystical texts, one of which condemned the French church and another of which identified Napoleon as the Antichrist. Contemporary histories describe his ideas as "productions d'une imagination malade", and he was regarded as an ultimately harmless eccentric. Situating his birthplace on the moon may be a reference to one of his books, or might be playing on the cultural link between the moon and insanity to insinuate that he was mentally ill.

Rare. WorldCat records three examples: BNF; ETH-Bibliothek Zurich; Utrecht University Library.

See also items 18 and 40.



Louis XIV's scorched earth policy

31 **WIERING, Thomas von**

Entwurff des edlen Rhein-Strohms, sambt angrenzenden Ländern, Städten und Vestungen, von Basel biss in die See, nebst ihrer Beschreibung, sonderlich aber derer Oerter, welche bey dem Einbruch der Franzosen ins Reich Ao. 1688 und hernach am meisten gelitten, und von denselben mit Feuer und andern erschreckligen Drangsalen ruiniret und verwüstet worden.

Publication
Hamburg, Thomas von Wiering, 1689.

Description
Engraved map on two sheets joined, 48 engraved views pasted to upper and lower border, text to left and right border, slight loss to text.

Dimensions
370 by 970mm (14.5 by 38.25 inches), [including views and text] 830 by 1230mm (32.75 by 48.5 inches).

Large engraved plan of the Rhine and the surrounding countryside from its mouth to Basel.

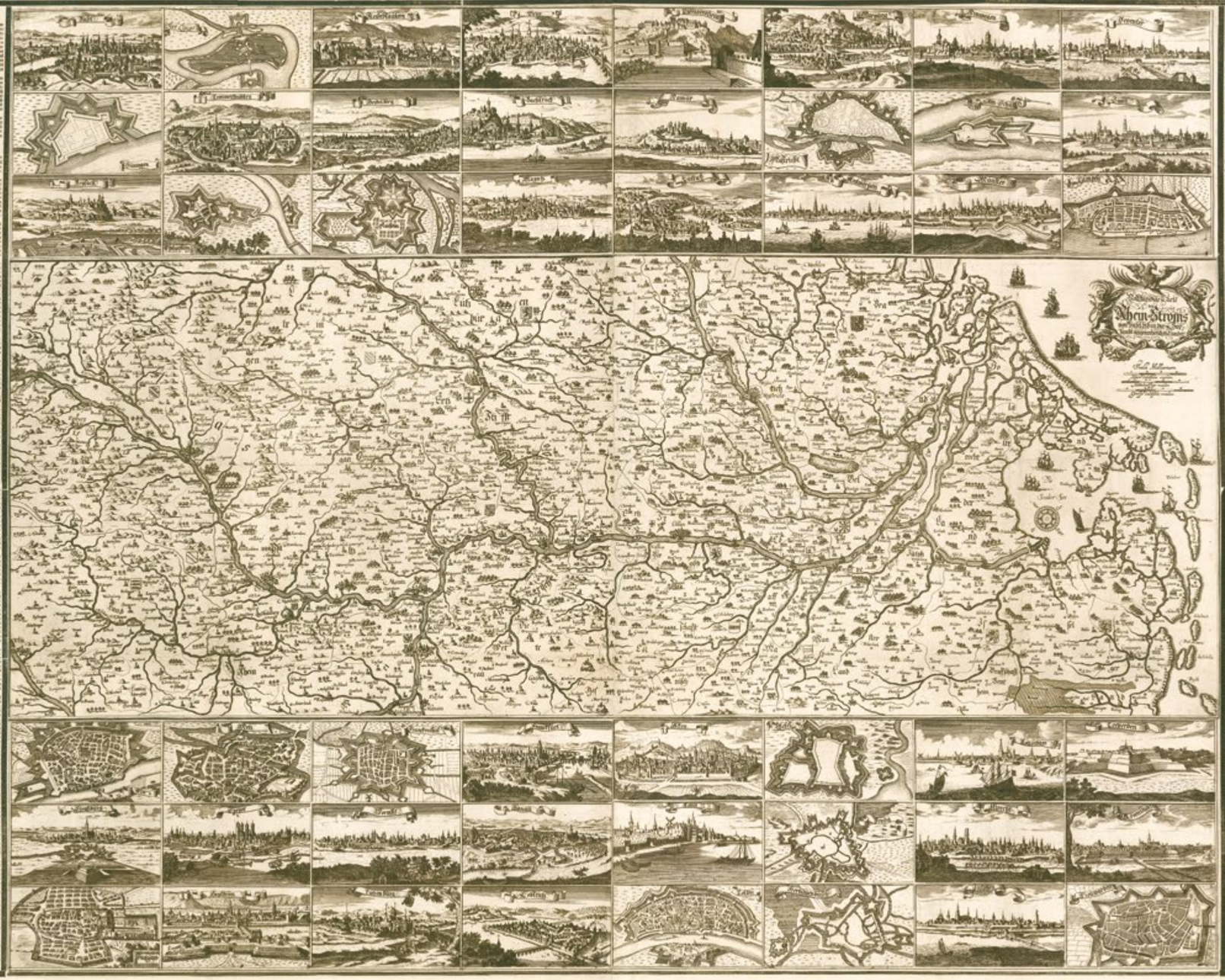
Surrounding the map are 48 bird's-eye views of towns and cities within the Rhineland and its environs, together with two columns of text to the left and right margins, providing information upon the towns and cities. The work was produced during the early years of the War of the Grand Alliance, fought between Louis XIV and a European coalition trying to quash his territorial ambitions. It marks the moment when Louis's army crossed the Rhine as a prelude to invading Philippsburg, the key post between Luxembourg (annexed in 1684) and Strasbourg (seized in 1681), and other Rhineland towns. This pre-emptive strike was intended to intimidate the German states into accepting his conditions, set out in his 'Mémoire de raisons', while encouraging the Ottoman Turks to continue their own struggle with the Emperor in the east.

The action was initially successful: Louis took control of the Rhineland from south of Mainz to the Swiss border. However, rather than capitulating, his actions galvanised the League of Augsburg into action. Louis soon realised he would not gain a short sharp victory, and so decided to put a scorched earth policy into effect in the Palatinate, Baden, and Württemberg instead. The aim was to deny enemy troops local resources and prevent them invading French territory. By 20 December 1688, Louis had selected all the cities, towns, villages, and châteaux intended for destruction. On 2 March 1689, the Count of Tessé torched Heidelberg; on 8 March, Montclar levelled Mannheim; Oppenheim and Worms were finally destroyed on 31 May, followed by Speyer on 1 June and Bingen on 4 June. In all, French troops burnt over 20 substantial towns as well as numerous villages. The destruction wrought by the French forces is explicitly mentioned in the title of the present map, and within the text to the right and left border.

Thomas von Wiering (1640-1703) was a publisher working in Hamburg.

Rare; we are able to trace only one institutional example: Norrköpings Stadsbibliotek, Sweden.

Entwurff des edlen Rhein-Strohms / sambt angrentzenden Ländern / Städten und Vestungen / von Basel biß in die See / nebst ihrer Beschreibung / sonderlich aber derer Oerter / welche bey dem Einbruch der Frantzosen ins Reich A°. 1688 und hernach am meisten gelitten / und von denenselben mit Feuer und andern erschrecklichen Drangsalen ruiniret und verwüstet worden.



Rotterdam during the Dutch Golden Age

32 VOU, Johannes de [and] Romeijn DE HOOGHE

Rotterodamum Rotterdam met al sijn gebouwen, net op haer maet geteekend en gesneden als Borgermeeteren waren gewoon, de Heeren; Mr Isaac Vethuysen... Anno 1694 door Joannes de Vou.

Publication
Rotterdam, [door Jan Notemans], 1694.

Description
Large engraved map, on six sheets joined, mounted on board, fine original colour.

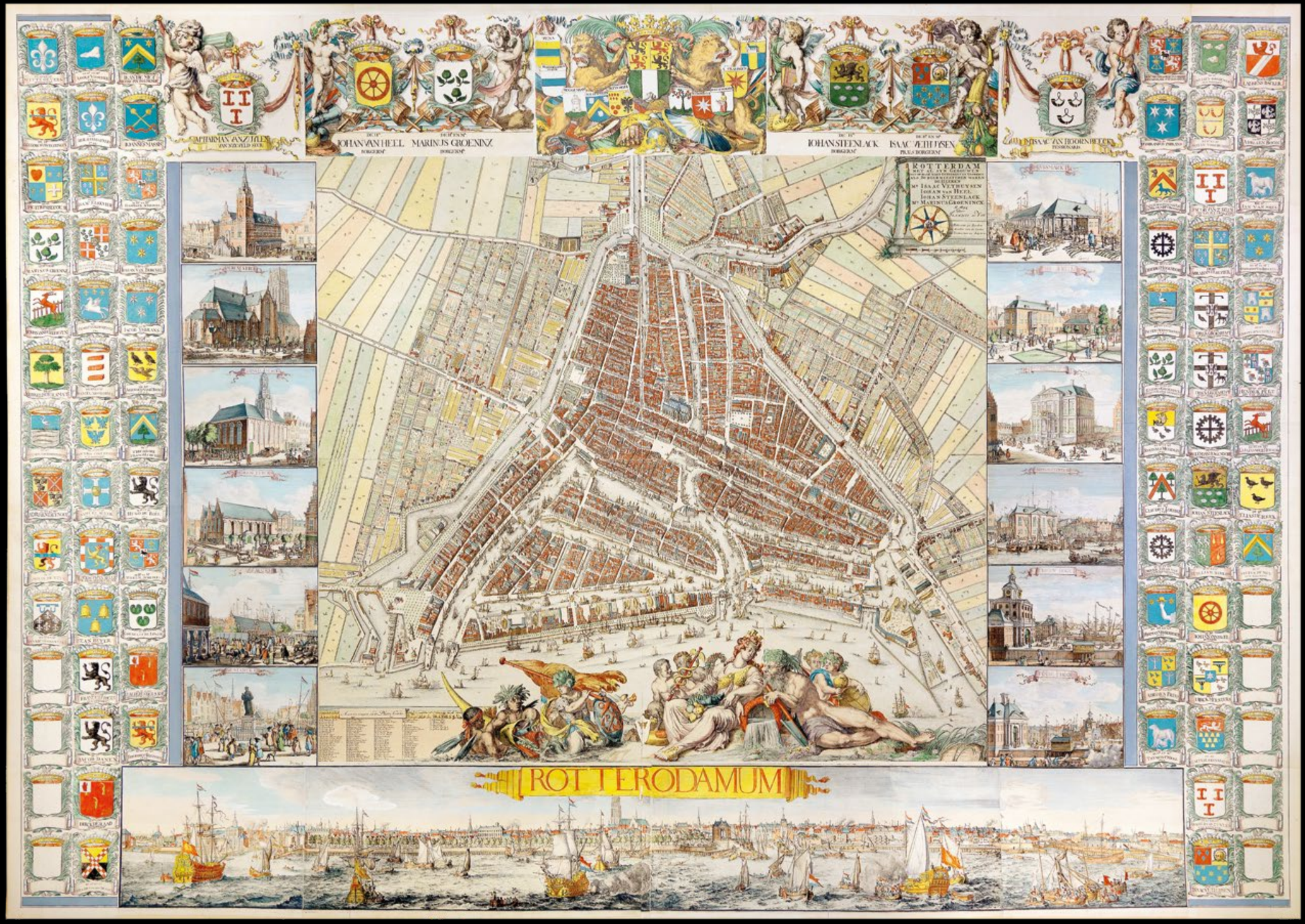
Dimensions
1650 by 2340mm (65 by 92.25 inches).

References
Rotterdam Illustratum, (Rotterdam: Wed. P. van Waesberge & Zoon, 1868), 40; A.C., "De kaart van de Vou: een Rotterdamsche monument van cartografie en prentkunst", Nieuwe Rotterdamsche Courant, 31 December, 1939, 124-125; Piet Ratsma, Prospecten van Rotterdam: Gezichten op de Stad, 1500-2000 (Alphen aan den Rijn: Canaletto, 1997), 90-92.

The celebrated 'Atlas de Vou', the largest and most ornamental plan of the city, at the apex of its flowering as the second port of the Netherlands during the Dutch Golden Age.

After successfully completing his plan of Haarlem in 1688, Romeijn de Hooghe was commissioned by the burgomasters of Rotterdam to publish a plan of their city. He carried out the survey with the collaboration of Johannes de Vou. Their initial efforts were met with disappointment from the burgomasters, who wrote to de Hooghe on 11 January 1692 asking him to return to the drawing board. Their second attempt met with the burgomasters' satisfaction and forms the present work. De Hooghe was well remunerated for his efforts, to the tune of 2000 guilders. However, his partner De Vou only received one hundred guilders.

De Hooghe was responsible for the central bird's-eye plan of the city. There is a beautiful illustration at the lower edge of a female personification of Rotterdam, wearing a turreted crown mimicking the city walls and holding a caduceus, a sign of virtue. She is accompanied by a river god, representing the Rotte. Fittingly for a port city, they are surrounded by sea gods. A laurel-crowned boy to the right of the river god points to a pair of globes, signifying the mastery of navigation which made the city rich through maritime trade. To the left, the two water spirits carrying a large cornucopia represent Africa and America, offering up their goods for the wealth of Rotterdam. The upper border is formed by the coat-of-arms of the city in the middle, flanked by the arms of the burgomasters, to whom there is a dedication at the upper right of the plan. The burgomasters' arms are backed by fasces, the symbol of strong government. Johannes de Vou contributed the prospect of the port at the lower edge and the city views bordering the bird's-eye plan, finely etched to show Rotterdam bustling with life.


IOHAN VAN HEEL
BORGEMR
MARINUS GROENINX
BORGEMR
IOHAN STEENLACK
BORGEMR
ISAAC VETTEWSEN
PRAS BORGEMR
ROTTERDAM
ROTTERODAMUM

A patriotic map of Switzerland

33 **BODENEHR, Johann Georg**

Helvetia Rhaetia, Valesia = Das Schweitzerland : ein von Gott gesegneter Freyheit- und Friedenssitz und der Mit-Verpu ündten Vatter-land.

Publication
Zug, [Heinrich Ludwig Muoss], 1698 [?but 1770].

Description
Hand-coloured engraved map, 52 views of Swiss cities pasted to borders.

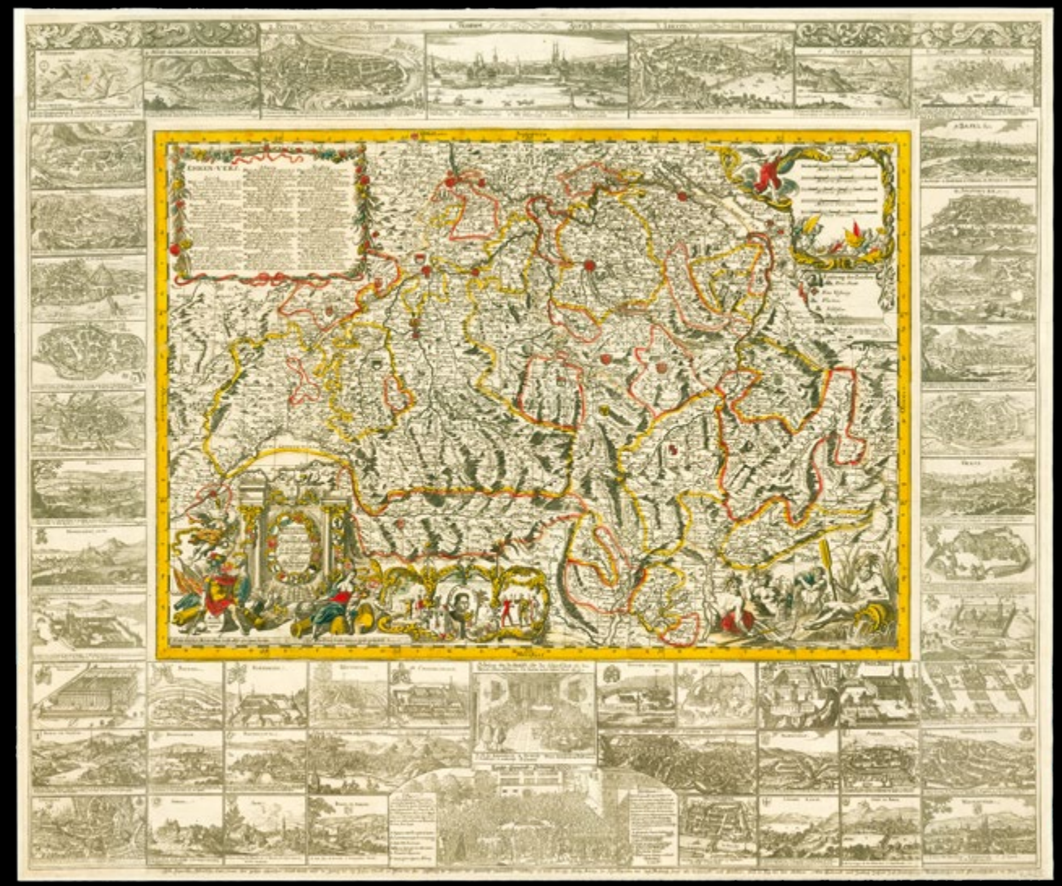
Dimensions
540 by 760mm (21.25 by 30 inches); [including border] 870 by 1030mm (34.25 by 40.5 inches).

A fascinating item showing a patriotic view of Swiss heritage in the dying years of the Old Confederacy. Little is known of the mapmaker, Johann Georg Bodenehr (1631-1704), save that he was from a family of engravers and publishers working in Augsburg. The map itself bears an elaborate title cartouche with a wreath incorporating the arms of the cantons, supported by personifications of war and peace. The inscription underneath is taken from Luke 11:21: "Cum fortis armatus custodit atrium suum, in pace sunt ea quae possidet", or "When a strong man armed keepeth his palace, his goods are in peace". To the upper left is a table providing information on each canton, with a key below. To the right of the cartouche is a cameo of William Tell, the fourteenth century Swiss folk hero, with four scenes from his life. From left to right, the pictures show the famous incident in which he was challenged to shoot an apple off the head of his son with a crossbow by a despotic local ruler; his subsequent imprisonment and escape; his assassination of that ruler with the same crossbow; and finally, his acclaim by his countrymen.

The large border surrounding the map contains 52 views of Swiss towns and villages. There are two depictions of climactic battles in the history of the Swiss Confederacy: the Battle of Morgarten in 1315, in which the Swiss defeated a larger and better organised Habsburg army; and the Battle of Sempach in 1386, which broke Austria's hold on Swiss territory permanently and which is seen as a milestone in the formation of the Swiss nation. The Battle of Sempach inspired so many commemorative songs that there is a whole genre in Swiss music called Sempacherlied. The achievements of these battles are represented at the centre of the lower border: the Swiss system of government, comprising the federal diet at the top, at which each of the cantons were represented, and a local council shown underneath.

The Swiss cantons formed a confederation during the fourteenth century, and successfully fended off invasion while maintaining neutrality during the long wars which racked Europe. Towards the end of the seventeenth century, however, a treaty of protection with France and internal religious conflict weakened the confederacy, and this pattern continued until it was eventually invaded by Napoleon in 1798. The map itself was issued around 1698, but the border of views was added in a later edition printed around 1770. This implies that the original map, already patriotically decorated, was reissued with a border which showed further evocative incidents of national pride. The warning inscription beneath the title cartouche suggests an attempt to remind the warring cantons of their shared history, and their rapidly decreasing independence.

OCLC only records one institutional example of this edition of the map in Basel University Library, although Zurich and Bern University Libraries have copies of the c.1698 edition.



A previously unrecorded state of De Wit's monumental wall map of Europe

34 **WIT, Frederick de**

Nova et Accurata Totius Europae Tabula.

Publication
Amsterdam, Frederick de Wit, 1700 (engraved ca. 1660/63).

Description
Engraved wall map printed on six sheets, joined, letterpress description of Europe in Spanish at foot, incorporating a decorative woodcut initial, xylograph Latin title in a panel on slips at the top decorative border at the sides, fine original hand-colour, some restoration, a few repairs to tears and small holes.

Dimensions
1210 by 1660mm (47.75 by 65.25 inches).

References
Holstein LIII, De Wit 83; J. Werner, Inde Witte Pascaert: Kaarten en Atlassen van Frederick de Wit uitgever te Amsterdam ca. 1630-1706 (Amsterdam: Universiteitsbibliothek, 1994) 19 (same copy; see also pp. 22-24 and 66); Frederik Caspar Wieder, ed., Monumenta cartographica (The Hague: Martinus Nijhoff, 1925-1933), 73, map 90 [1672 edition].

Third edition of a rare and magnificent wall map of Europe, Turkey, and the entire Mediterranean Sea, at a scale of about 1:5,000,000, beautifully decorated and with 18 smaller views and maps (nine on each side, each approximately 120 by 180mm) showing the cities Rome, Seville, Prague, London, Copenhagen, Cracow, Cologne, Lisbon, and Madrid (on the left), and Amsterdam, Paris, Venice, Gedansk, Stockholm, Frankfurt am Main, Antwerp, Constantinople, and Moscow (on the right). Madrid and Moscow (at the foot on either side) are plans, while the others are profiles or bird's-eye views.

Hollstein records only one other example of the present edition; a different issue, with the text in Latin and with views of Nürnberg and Vienna instead of the maps of Madrid and Moscow. Hollstein locates two copies of the 1672 edition, but it would appear that no example of the first, 1660/63, has survived. The decorations for the present map have been extensively revised from the 1672 edition, with a different title-strip and drapery instead of garlands for the geodesic cartouche, to which De Wit has added putti, coats-of-arms, and supporting figures below. De Wit's additions also show some revisions to the cartographic content, for example in the eastern Arctic. The other known example of the 1700 edition is rather damaged and is lacking de Wit's signature at the end of the title, and the title to the view of "Cracovia".

Frederick de Wit (1629/30-1706) and Nicolas Visscher took over Blaeu and Janssonius's roles as the leading Dutch cartographers in the last quarter of the seventeenth century. His wall maps in particular have been called "the most beautiful of the seventeenth century" (Werner). The present map shows the coats-of-arms of "Germania" (oddly represented by the Imperial eagle with the impaled arms of Austria and Castile), Spain (represented by the arms of the long-dead King Charles I, that is, the Holy Roman Emperor Charles V), France, "Anglia" (with the arms of England quartered with those of Scotland and Ireland), Denmark, Sweden, Poland, and Portugal. All of these decorative shields were added for this edition.

The map owes its basic concept, approximate format, stereographic projection, and note on geodesy to Willem Jansz. Blaeu's 1608 'Nova et Acurata Totius Europæ', which was published in at least seven editions prior to 1657 however, De Wit's first edition was more directly based on Joan Blaeu's 1658/59 'Europæ Nova Descriptio', which Blaeu printed from the revised plates of Hondius' map of 1613 or later and which did not copy the cartographic content of the 1608 map. All three show a grid of parallels and meridians, with the prime meridian running through Tenerife. De Wit's map extends further north (to about 75° N latitude) than Blaeu's of 1608, including even Bear Island (Bjornoya) in Svalbard. The city views and maps are not based on Blaeu's. De Wit is believed to have first published his series of four continental maps c. 1660/63 (to accompany his world map), but revised them in 1672, and again for the present third edition in 1700. De Wit's title cartouche with figures, at the foot of the main map, is wholly independent of his predecessors, and he made other changes in the decoration and cartographic content, as noted above. The present example, and that at the Amsterdam University Library, are both dated 1700 (at the foot of the main map), and we have noticed no differences in the six map sheets, title strip, or the four half sheets with sixteen city views. However, the letterpress description of Europe in Latin in the Amsterdam example is replaced here with a Spanish translation (drop-title "Nueva Descripcion de la Europa" and imprint "En Amsterdam, en casa de Frederico de With, vive en el Calver-Straat ... en la emeña del Pascaart Blanco"). Moreover, the letterpress text in the Amsterdam copy is flanked by views of Nürnberg and Vienna (printed on separate pieces of paper mounted below the four half sheets with the other 16 views, eight on each side), while the present copy has instead maps of Madrid and Moscow (all four appeared in at least some copies of the 1672 edition). De Wit printed numerous city maps and views in this style, with six or eight to a sheet, matching egg and dart borders on the sides, and matching corner decorations. However, some of the plates were apparently adapted for use with the present wall map, because the maps of Madrid and Moscow are found at the top of a sheet of six, while their corner decorations in the present map are designed for their position at the foot of the column of views (in both versions, the map of Moscow departs from the style of the others in the placement of its name and panel).

NOVA ET ACCURATA TOTIUS EUROPÆ TABULA. emendata a F. de Wit

Ughi's monumental map of Venice

35 **UGHI, Lodovico**

Iconografica Rappresentatione della Inclita Citta di Venezia Consacrata al Reggio Serenissimo Domino Veneto.

Publication
Venice, Ludovico Furlanetto Sopra el Ponte dé Baretteri, [c.1739].

Description
Large engraved wall map on eight sheets, title to banner at top, 16 views of Venice to left and right borders, text below, joined and mounted on linen, edged in green silk.

Dimensions
1500 by 2080mm (59 by 82 inches).

References
Susan Filter, "Historic Intent: Lodovico Ughi's Topographical Map of Venice; A Large Wall Map as an Historic Document, a Work of Art, and a Material Artifact", The Book and Paper Group Annual 13 (1994); Moretto, 152.

One of the largest maps of Venice ever published, and the first map of the city based upon accurate field surveys.

Lodovico Ughi's topographical map is a landmark in the cartographic history of Venice. Over the centuries, Venetian map makers in general copied one another and did not significantly alter the appearance of the city from year to year. Among the exceptions are Jacopo de Barbari's magnificent bird's-eye view of Venice printed in 1500 and Ughi's map of 1729. Not only are they two of the largest printed maps of Venice, but they served for centuries as models for all subsequent plans made of the city.

To the side of the map are 16 views of the city: the Piazza San Marco, the Doge's Palace, the Basilica di San Marco, the Arsenal, the Rialto Bridge, the church of San Giorgio Maggiore, the church of Santissimo Redentore, and the church of Santa Maria della Salute. The views have been tentatively assigned to the Venetian artist and engraver Francesco Zucchi (1692-1764). The engravings themselves are after Luca Carlevarij's 'Fabriche e Vedute di Venetia', 1703.

To the lower left is the coat of arms of Francesco Morosini, surrounded by putti and military equipment. Francesco Morosini (1619-1694) was the last of the "warrior Doges". He is most famed for his victories over the Ottomans during the Morean War (1684-1699), in which he captured most of the Morea. For this he was awarded the honorary title "Peloponnesiacus", and was the first Venetian citizen to have a bronze bust placed during his own lifetime in the Great Hall, with the inscription "Francisco Morosini Peloponnesiaco, adhuc vivendi, Senatus".

To the upper left is a personification of Venice with the lion of St Mark at her feet, surrounded by sea gods and dolphins representing her marriage to the sea and the riches she derives from it. The image is taken from a drawing by the Venetian painter Sebastiano Ricci (1659-1734), now housed in the library of Anton Maria Zanetti. To the upper left is an elaborate wind rose, with the cardinal points adorned with the heads of putti.

The cartouche at the bottom right holds a dedication written by Lodovico Ughi Alvise Mocenigo, the Doge in 1729. He expounds on "... the glorious city of Venice, blessed by the Virgin, divine, Queen of the Adriatic, always envied, a constant sustainer of the Catholic religion, known throughout the world for her justice, feared by her enemies, defended in all times by her sons who have sacrificed their lives, ... your most humble servant Calviai. Lodovico Ughi." Below the map is a long text panel providing information about Venice.

Examples are held at: Bibliothèque Nationale de France; Houghton Library, Harvard; Zentralbibliothek Zurich (map only); Leiden University Library; Dresden University Library.

Gyger's rare map of the Canton of Zurich: "the earliest relief map in existence"

36 **GYGER, Hans Conrad**

Nova descriptio ditionis Tigurinae, regionumq[ue] finitimarum = Neüe Beschreibung der Landschafft Zürich.

Publication
Zurich, Hans Georg Gyger, 1685.

Description
Woodcut map on six sheets joined, hand-coloured in outline.

Dimensions
930 by 980mm (36.5 by 38.5 inches).

References
Eduard Imhof, Cartographic Relief Presentation (ESRI Press: Redlands, 2007), 7; Samuel Wyder and Hans-Uli Feldmann, "Die Karten der Schweiz (1620-1657) von Hans Conrad Gyger" Cartographica Helvetica 43 (2011): 3-18.

Large and detailed map of the Canton of Zurich.

Hans Conrad Gyger (1599-1674) was the leading Swiss cartographer of the seventeenth century. He originally trained under the glass painter and draughtsman Josias Murer (1564-1630). He became interested in cartography, and produced ten military maps of the Zurich countryside between 1644 and 1660. His most important work, which took some 38 years to complete, was a map of the Canton of Zurich upon a scale of 1:32,000. He used improved surveying equipment and graphic triangulation to create a map of unprecedented topographical accuracy. It was the first time that that relief was "deliberately depicted in the plan view". It was finished in 1667, and is "the earliest relief map in existence" (Imhof). Unfortunately, the map was so advanced, that it was kept a well-guarded secret by the Swiss for much of the next century. The map's accuracy, however, would not be bettered for 200 years.

The present map was issued by Gyger's son, Hans Georg, the only one of Gyger's five sons to follow him into the trade, and is a direct reduction of Gyger's great work. It was deliberately made on a smaller scale to prevent its use by hostile interests, but Gyger's groundbreaking use of shading to depict relief is still visible. The top border is broken by Zurich's coat-of-arms, flanked by two Arcadian scenes. The side borders contain 14 vignette views of towns in the canton, with an inset map of a valley to the lower right. There are a further two town views on either side of a collection of small shields with coats-of-arms. At the lower border is a prospect of Zurich below, flanked by locals in traditional dress.

Rare. We are only able to trace three institutional examples of the map: Zurich University Library; Basel University Library (with border); Bibliothèque Nationale de France (with border, but uncoloured). The Basel example is coloured in the same way as the present copy.

A plan of Rio de Janeiro by the Comte de Breteuil, the last prime minister of pre-revolutionary France, together with one of the earliest manuscript prospects of the city

37 **BRETEUIL, Louis Charles Auguste le Tonnelier, baron de Breteuil, baron de Preuilly**

Vüe de Rio de Janeiro [together with] Plan de la Baye de Rio Janeiro et de ses Deffense, 1757.

Publication
[1757].

Description
Manuscript plan of the bay of Rio de Janeiro in pen and ink with wash, signed "Breteuil fecit" [together with] a pen and ink prospect of Rio de Janeiro, both dissected and mounted on canvas.

Dimensions
Plan: 535 by 735mm (21 by 29 inches); View: 290 by 790mm (11.5 by 31 inches).

References
Pedro Corrêa da Lago and Ruy Souza, Brasiliana Itau (São Paulo: Capivara, 2009); Thomas Arthur de Lally, Memoirs of Count Lally, (London, 1766), 183.

A detailed map of Rio de Janeiro made in 1757 by the Comte (later Baron) de Breteuil, together with a prospect of the city.

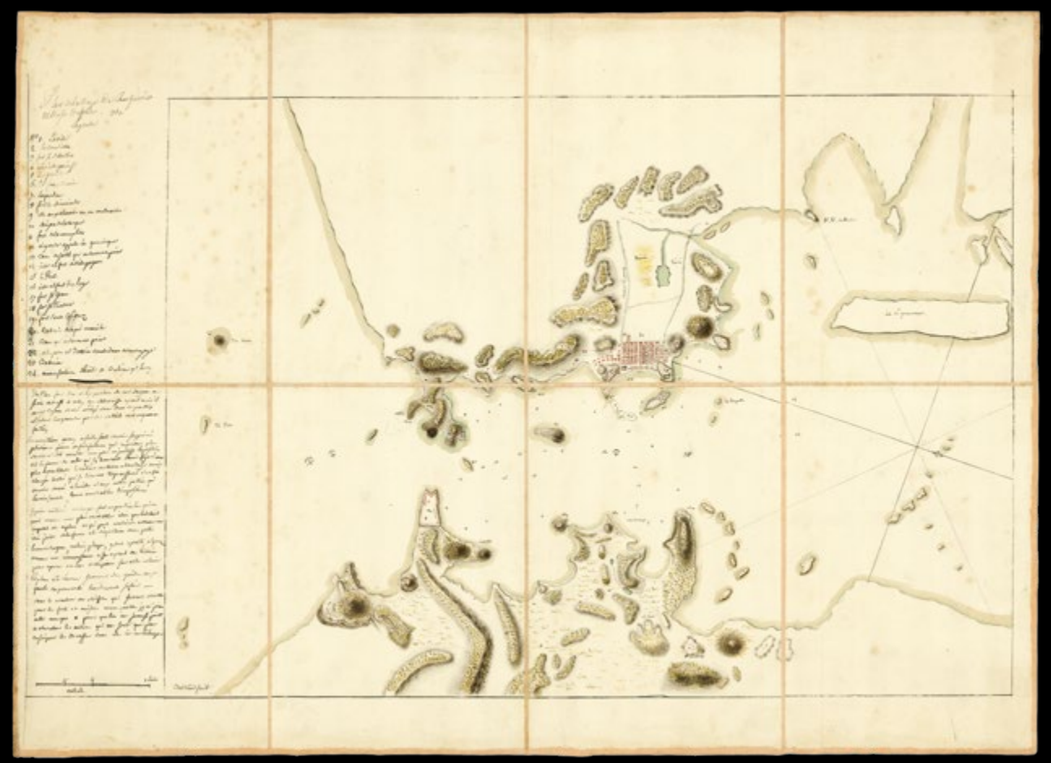
Louis Charles Auguste le Tonnelier, baron de Breteuil, baron de Preuilly (1730-1807) was a French aristocrat, diplomat and statesman. He was the last Prime Minister of France to serve under the Bourbon monarchy, appointed by Louis XVI only 100 hours before the storming of the Bastille.

Breteuil was born in 1730 at the château of Azay-le-Ferron into a well-connected aristocratic family. He was educated in Paris before joining the army, where he served under Thomas Arthur, comte de Lally, baron de Tollendal (1702-1766) in his ill-fated command of the French forces in India during the Seven Years' War against England. With orders to join the French forces in India, Lally and Breteuil sailed from France on 2 May 1757 under the command of Vice Admiral Anne Antoine, Comte d'Aché (1701-1780). During the voyage, an epidemic forced the fleet to put in at Rio de Janeiro for six weeks. The Portuguese, neutral in the conflict between France and England, initially refused access to the city. This, quite possibly, was a result of the fact that the French had sacked Rio in 1711 under René Du Guay-Trouin, a former corsair who took the supposedly impregnable city with a force half the size of the defending garrison. It is likely that the present plan and prospect were drawn up during this hiatus, perhaps in contemplation of emulating Du Guay-Trouin's previous exploits. Indeed, the text states that the map is based upon a plan made during the expedition of "Mr Duguay", together with corrections. It also indicates that the plan was made in conjunction with a prospect of the city (presumably the accompanying view offered here) and states that the plan and its companion view may be relied upon as accurate.

The plan is titled 'Plan of the Rio de Janeiro Bay and its Defenses', and is signed in at the bottom right "Breteuil fecit". A manuscript legend towards the right of the plan lists the following:

1. The City; 2 The Benedictines; 3. Fort St Sebastien; 4. The Parish City; 5. The Jesuits; 6. The Franciscans; 7. The aqueduct; 8. Fort Mercy; 9. Island of the goats and snakes; 10. Bishop's residence; 11. Fort Conception; 12. Aqueduct; 13. Submerged sand bank; 14. Island and fort of the city of Gagnon; 15. The harbour; 16. Island and Fort Delage; 17. Fort St Jean; 18. Fort St Theodore; 19. Fort Santa Cruz; 20. Battery Delapre Vermek; 21. Submerged sand bank; 22. Chapel and Battery of Notredame of her travels; 23. Battery; 24. Oil Manufacture of Baleine Pt Leroy.

The prospect, or view, is itself inscribed "realised for the Comte de Breteuil", thereby reinforcing the pairing of the two images, and the text towards the lower right of the image remarks: "This Bay has 8 deep-water anchorages. Two link the Fort Santa Cruz to Rio de Janeiro. Our troops and our crew are camped in San Domingo, which faces that city.

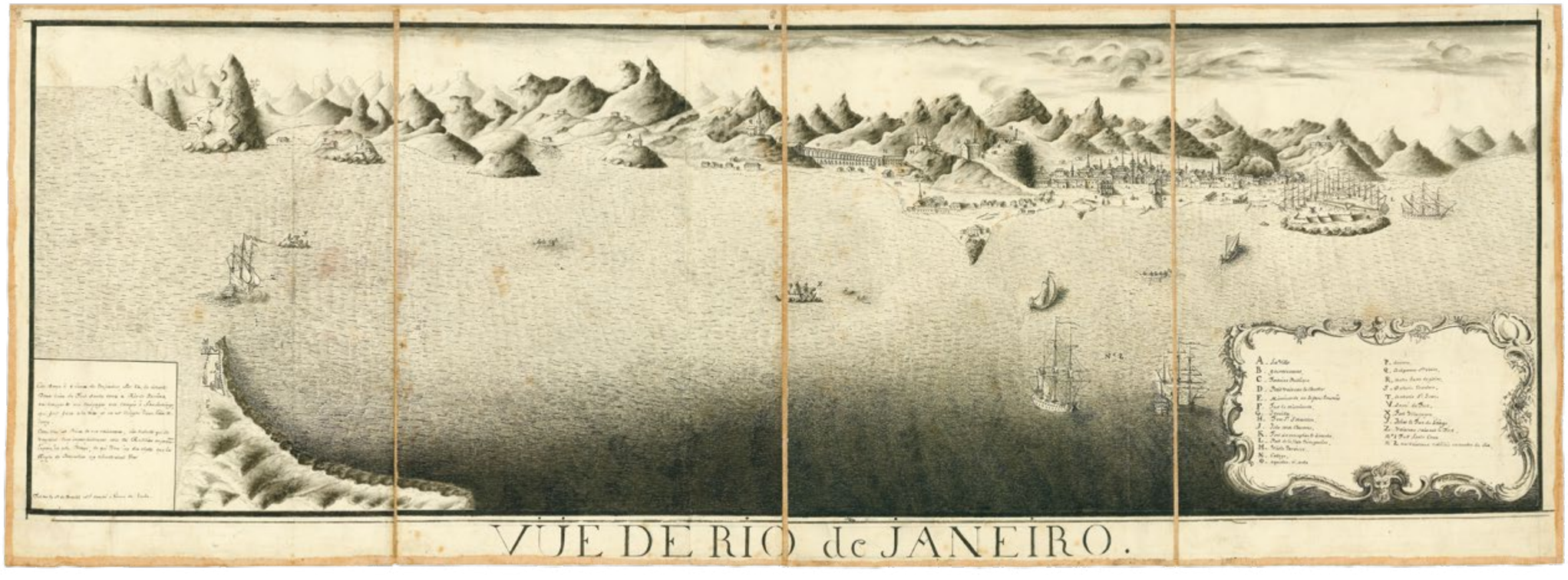


This view is busy with our vessels. The parts that went imperfectly have been corrected while travelling through the Bay, placing here objects that perspective wouldn't admit."

Inside a large text box at the lower right, the following are identified: A. The City B. Government C. Public Fountain D. Small Vessel in Construction E. [Orphanage] "Mercy to the Found Children" F. Fort of Mercy G. Jesuits H. Fort St Sebastian J. Island of the Goats K. Fort of the Conception and Levesche L. Anchorage of the Portuguese Fleet M. Old Parish N. College O. Aqueduct P. Customs Q. St Claire R. Notre Dame de Gloire S. Batterie Theodore T. Battery St Jean V. Fort X. Fort Villegayen Y. Island and Fort of Laage Z. Vessel greeting the Fort n1 Fort Santa Cruz n2 The six vessels of the French fleet.

Correa do Lago includes a chapter dedicated to drawings and watercolours in his catalogue of the collection of Olavo Setuval. In this he describes a 1760 prospect of the city by Blasco ('Propescto da cidade do Rio de Janeiro vista da parte norte da Ilha das Cobras') as "the most detailed and complete panorama of the eighteenth century". The present drawing predates Blasco's work by some three years. The next oldest prospect in the Setuval collection is dated 1795. Furthermore, no comparable prospect can be found in the Coleção Brasiliana Fundação Estudar (part of the Oscar Americano collection).

Provenance
Bibliothèque des ducs de Luynes, Château de Dampierre, France.



Rare early plan of Mexico City

38 **LOPEZ, Tomas**

Plano Geometrico de la Imperial noble y leal Ciudad de Mexico, Teniendo por extremo la Zanxa y Garitas del Resguardo de la Real Aduana: Sacado de orden del Señor Don Francisco Leandro de Viana Conde de Tepa, Oydor que fue de la Real Audiencia de México, y hoi del Consejo y Cámara de Indias; Por D. Ignacio de Castera, año de 1776. Dale á luz Don Tomas Lopez, Geógrafo de los Dominios de S.M. Madrid año de 1785.

Publication
Madrid, 1785.

Description
Engraved map, printed on four sheets, joined.

Dimensions
860 by 1100mm (33.75 by 43.25 inches).

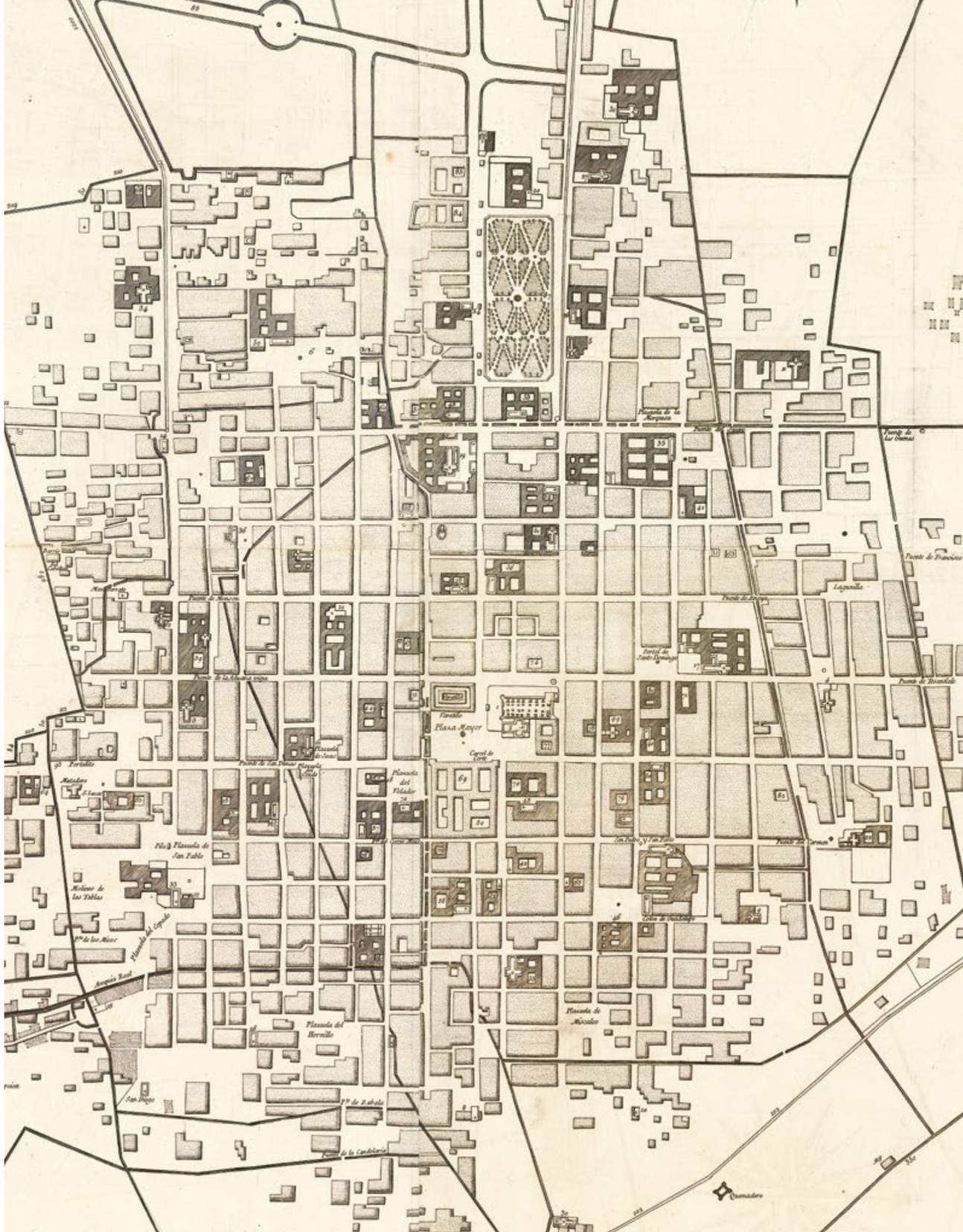
Referencest
Miguel Fernández Félix and Bernardo Esquinca, El Criollo en su Reflejo: Celebración e Identidad (Fomento Cultural Grupo Salinas, 2011); Richard V. Francaviglia, Mapping and Imagination in the Great Basin: A Cartographic History (Reno: University of Nevada Press, 2005), 35; Antonio López Gómez and Carmen Manso Porto, Cartografía del siglo XVIII: Tomás López en la Real Academia de la Historia, (Madrid: Real Academia de la Historia, 2006); Richard L. Kagan and Fernando Marías, Urban Images of the Hispanic World 1493-1793 (Yale: Yale University Press, 2000), 94-5; David F. Marley, Historic Cities of the Americas: An Illustrated Encyclopedia (California, Colorado and Oxford: ABC-CLIO, 2005).

Tomas Lopez de Vargas Machuca (1731-1802) was a Spanish publisher and the leading cartographer of the age. He studied with Jean-Baptiste Bourguignon d'Anville in Paris before returning to his native Madrid in 1760, where he established the only independent cartographic publishing house in Spain. He began making maps for the Bourbon kings and became Royal Geographer to King Carlos III in 1780. He was even authorised to create a geographic agency for the secretary of state in 1795.

Lopez's map follows the one made by Ignacio de Castera Obiedo y Peralta (1750-1811), a Mexican architect and cartographer. Castera gained the favour of Archbishop Nuñez Haro de Peralta and Viceroy Guemes Pacheco, which allowed him to participate in the construction of important buildings in the City of Mexico. Castera's map, however, appears never to have been published until this reproduction by Lopez. It is cartographically similar to "Plano Ignografico de la Nobilisima Ciudad de Mexico, hecho en el año 1776 por D. Ignacio Castera, Mro. De Arquitectura y Agrimensor de tierras, aguas y minas por S. M. y aumentado en el de 1778", indicating that he made at least two separate maps between 1776 and 1778.

Lopez had already published a 1758 map of Mexico City, a plain orthogonal plan of the type created by military engineers. His work was typical of late eighteenth century Spanish attempts to assert control of their empire through cartorgraphy. Spain's reluctance at the beginning of the eighteenth century to make public claims on their American territories via maps and sparse settlements "encouraged Spain's European rivals, France and Britain, to engage in real and cartographic "filibustering' campaigns in the region" (Reinhartz). Although Castera and Lopez's map supposedly presents a detached view, it is still fraught with ideology. Mexico City was a vital part of New Spain: the capital of the viceroyalty, the seat of the bishopric and a trading centre with links to both Asia and Europe. Carlos III, king at the time this map was made, was determined that the reforms he initiated in Spain should be copied throughout the Spanish empire, and that Spanish colonial possessions should reflect European cultural values. Protestant critics dismissed Spain's empire as an "intellectual backwater". This plan counters these claims by displaying it in the style of a European city view: well-planned, geometric, and modern. It addresses contemporary ideas which equated the physical order of a state with its political efficacy, reflecting the political, social and urban modifications resulting from the reforms carried out by the Bourbon kings in the second half of the eighteenth century. In this sense, it is the first printed map to show "modern" Mexico.

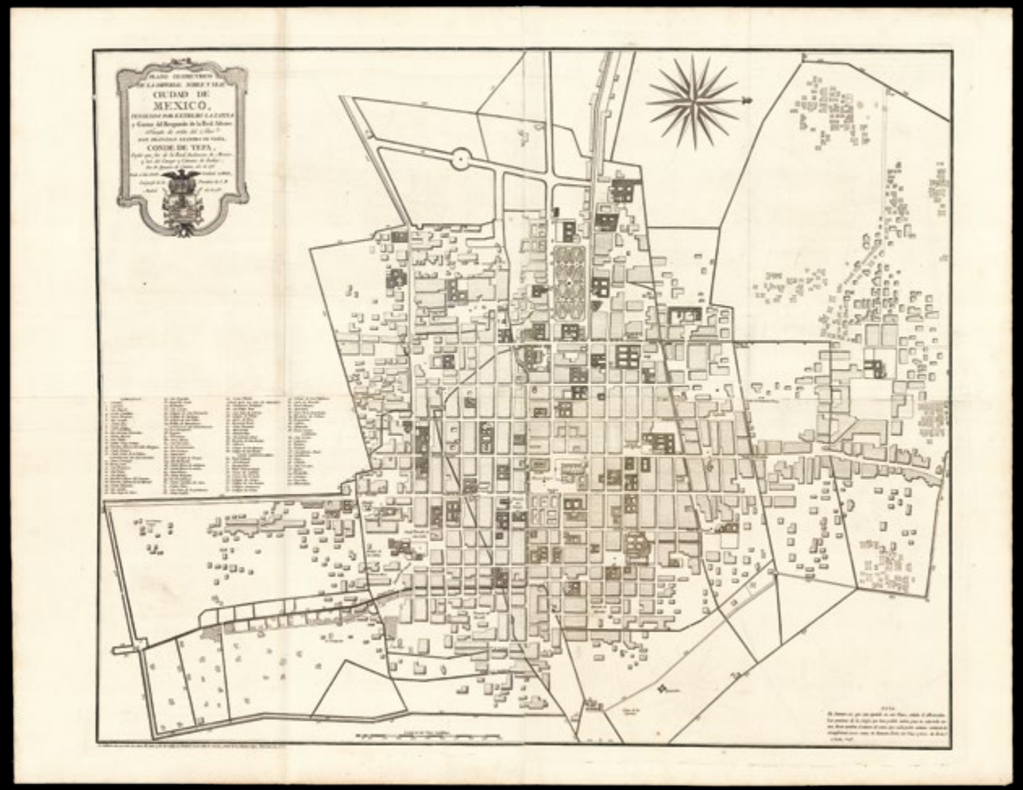
To the lower right of the plan is a key listing districts, monastic houses, convents, non-religious buildings, public buildings, and canals. The plan clearly shows the Alameda Park, the Zócalo (Plaza Mayor), and the Cathedral of the Assumption of Mary. To the lower left is a note



stating that the street names were taken from a manuscript map of the city provided by Don Francisco Xavier Machado y Fiesco.

The plan is dedicated to Don Francisco Leandro de Viana, Count of Tepa (1730-1804). Viana was active in the colonial administration of the Spanish Empire, and made his reputation protecting the interest of natives in the Philippines. He would eventually settle in Mexico after marrying into the Mexican nobility and was appointed alcalde de crimien (criminal judge) and oidor (royal judge) there, two of the highest-ranking judicial positions that could be held in the Spanish empire.

As Lopez's maps were all issued separately, they are comparatively rare on the market, and his works on the New World even more so.



The "Blue Map" of China

39 **HUANG, Qianren**

[Complete Geographical Map of the Everlasting Unified Qing Empire].

Publication
[China, 1811].

Description
Large woodcut map printed in 16 sections on eight sheets.

Dimensions
1320 by 2230mm (52.25 by 87.75 inches).

References
Richard A. Pegg, Cartographic Traditions in East Asian Maps (Hawai'i: Maclean Collection and University of Hawai'i Press, 2014), 18-27; Yan Ping et al., China in Ancient and Modern Maps, (London: Philip Wilson for Sotheby's Publications, 1998), 141.

An extraordinarily rare cartographic document that is based on research originally presented to the Qianlong emperor by Huang Qianren (fl. 1760-70) in 1767. The title of the map is as much a political programme of the Qing as it is a geographical record. It shows China at the height of the Qing empire, celebrating the "unified status of all of Chinese borders" (Pegg).

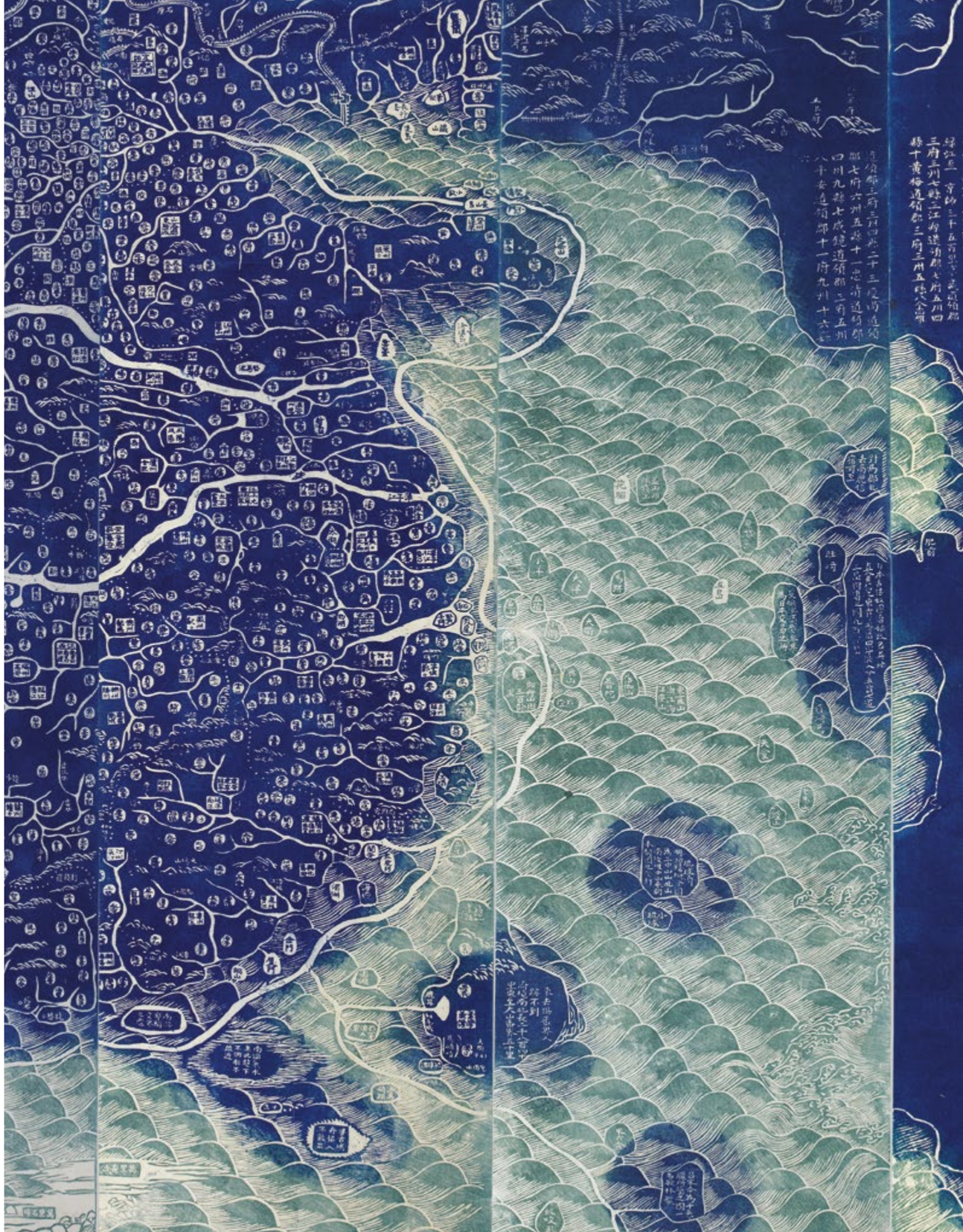
"[This] 'complete' map minimizes the European notion of a map of the world, its centralized and marginalizing construct confirming the Qing/ Chinese notion of the Central Kingdom" (Pegg).

The map was designed to act not only as a grand political statement of the Kingdom's place in the world, but also as an administrative tool. Its surface is dotted with provincial capitals (sheng), a square with a small rectangle on top; prefectures (fu), a square; independent district magistrates (zhilizhou), a square with a triangle on top; departments (zhou), a vertical rectangle; sub-prefectures (ting), a diamond; districts (xian), a circle; frontier passes (guan), a small building; local headmen or western tribute states (tusi), a triangle; with the name appearing within each pictogram. The borders of each province are denoted by dotted lines.
As well as administrative areas, the map depicts topographical and geographical information. Much attention is given to the waterways: the source of the Yellow River is correctly located in the Bayan-har mountain and is accompanied by an expansive explanatory note; the Minjiang River is given as the source of the Yangtze. Mountain ridges and the Great Wall are depicted in elevation, and desert areas are stippled. Several neighbouring countries are marked including Russia, India, Siam, Vietnam, Japan, and, most notably, Korea, who, as the chief vassal state, receives a great deal of commentary. To the upper left of the map are both the Mediterranean or "Small Western Ocean", and Atlantic or "Great Western Ocean", with Holland and England depicted as islands in the Atlantic.

One of the more striking aspects of the map is that the "intentionally vague geopolitical lines of the [empire's] frontiers and beyond clearly indicate the Qing's perception of the world around them ... [when] ... all foreign entities simply inhabited the fringes of the empire" (Pegg). This together with the empire's size reaffirms the status of the kingdom as the geographical, political, and cultural centre of the world.

The map which the present example is based upon was first produced in 1767 for the Qianlong Emperor to celebrate the unification of the Qing empire. No example of the original survives. However, a painted copy of the map was produced in 1800 by Huang Zhengsun, and now resides in the Beijing National Library.

The map was then revised and enlarged in around 1811, resulting in the present work. This version was printed in two colours: blue and white, and black and white. There are examples of this version in the Maclean Collection in Chicago, the Library of Congress, and the Beijing National Library.



大清萬年一統地理全圖

"You have cost me more territory than all my enemies!"

40 CASSINI de THURY, Cesar Francois

Carte de France dite Carte de Cassini...

Publication
Paris, [c.1815].

Description
182 engraved maps, with fine original hand-colour, dissected and mounted on linen, housed in 30 red morocco pull-off slipcases, lavishly gilt.

References
Brotton, 294-336.

A complete set of Cassini's map of France housed in full red morocco slipcases. The first scientific survey of France, the first road "atlas" of France, and the map that, in 1682, some 133 years before its completion, caused Louis XIV to lament that it "cost me more territory than all my enemies!".

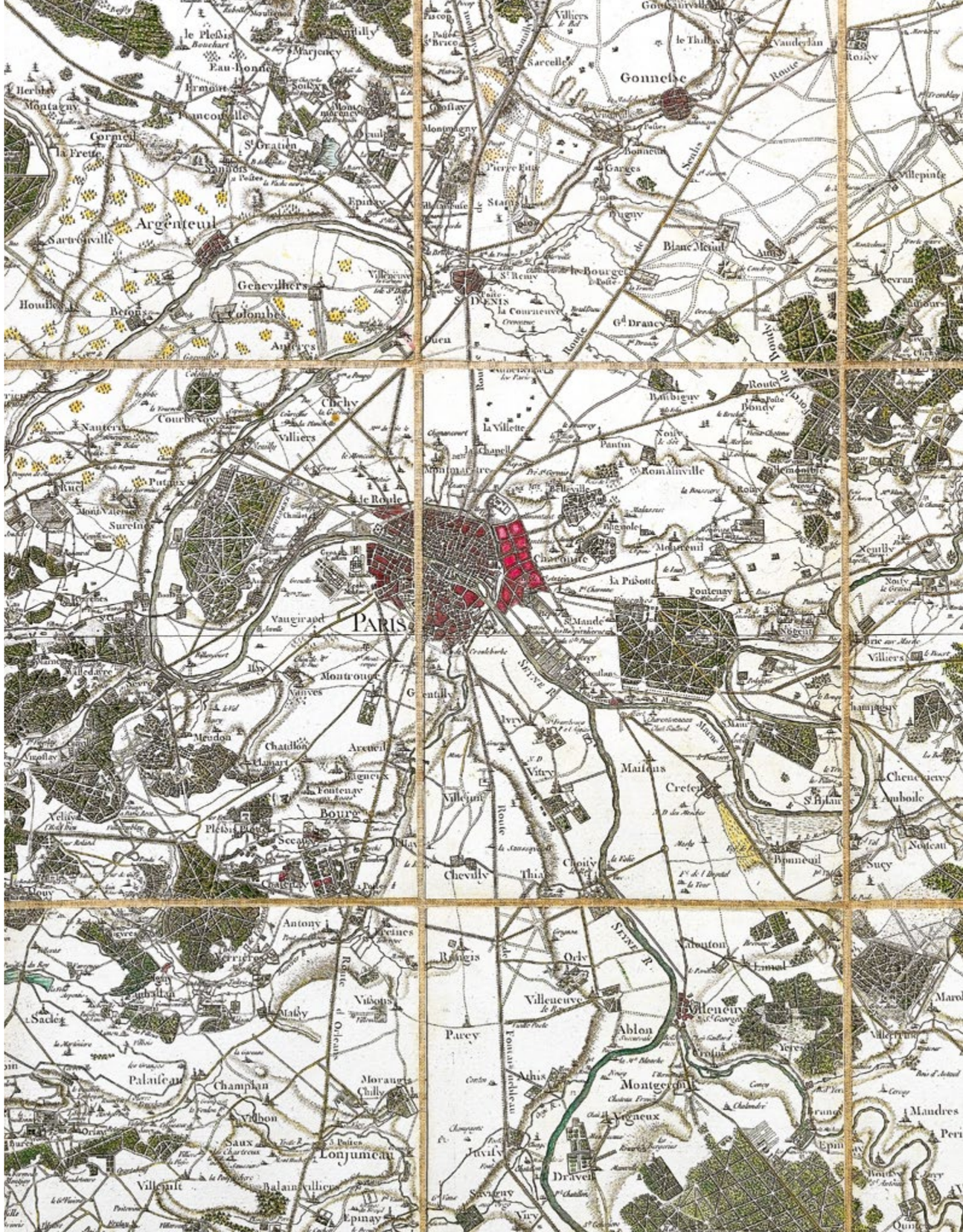
The great project began in the early 1660s, and would consume four generations of the Cassini family - Jean-Dominique Cassini, or Cassini I (1625-1712); Jacques Cassini, or Cassini II (1677-1756); César-François Cassini, or Cassini III (1714-1784); and Jean-Dominique Cassini or Cassini IV (1748-1845) - for the next 150 years.

The map was the brain-child of Jean-Baptiste Colbert, who was minister of finance from 1665 to 1683 in Louis XIV's reign. He envisaged a detailed map of the whole of the royal estate to improve its management and potential revenue. He turned to the newly formed Académie de Sciences for help, and principally to the services of Jean-Dominique Cassini and the surveyor and astronomer Abbé Jean Picard. The survey was carried out using astronomical observations (care of Cassini) to ascertain the precise longitude and hence the accurate measurement of a baseline. Once an accurate baseline had been measured, the surveyors began the trigonometrical survey. These intricate interlocking triangles would become the survey's skeleton, which in turn would be fleshed out by the use of more traditional techniques. Picard outlined his method in his work 'Mesure de la terre' of 1671. "The Carte de Cassini ... was the first general map of an entire nation based on geodetic and topographical measurements ... [and] transformed the practice of mapmaking over the next 150 years into a verifiable science ..." (Brotton).

The first map in the survey 'Carte particulière des environs de Paris', was completed by Picard in the late 1660s, and published in 1678 on a scale of 1:86,400 (the standard scale for the whole survey). Picard then turned his attention to surveying the French coast. One of the most startling results of the coastal survey, published in 1684, was that it reduced the overall size of France from 150,000 square kilometres to 120,000 square kilometres. It was this dramatic change that caused the outburst from Louis XIV quoted at the head of this description.

Following the publication of the coastal survey, everything was in place for the mapping of the nation to begin. However, Louis' numerous military campaigns had begun to starve the project of funds and, with the death of Cassini in 1712, the project lost its figurehead. It would not be until 1733 that Philibert Orrey, Louis XV's controller general, would order Jacques Cassini (Cassini II), to resume the triangulation of the entire nation. Jacques was joined in his endeavour by this son Cassini de Thury (Cassini III), and, by 1744, the triangulation of the country was complete.

With the framework complete, in 1746 Louis charged Cassini III with fleshing out the survey's bare bones. Cassini calculated that



the survey would take 18 years to complete, and consist of 180 maps at a cost of 4,000 livres each. Unfortunately, Cassini's estimates were woefully optimistic. By 1754, only two maps had been published, and Cassini received the news that Louis was to end the financing of the survey. This forced him to turn to the private sector, and with Louis' backing he set up the 'Société de la Carte de France', which consisted of 50 shareholders, each of whom was asked to contribute 1,600 livres annually. This, combined with a public subscription in 1758, and a royal proclamation of 1764, demanding that unsurveyed regions contribute to the survey's costs, kept the project on a secure financial footing. Although Cassini III had secured the map's future, he would not see its completion. In 1784, at the age of 70, he died of smallpox. The completion of the great project was left to his son Jean-Dominique, Comte de Cassini (Cassini IV).

By 1790 all of France had been surveyed, and only 15 maps were left to be published. However, the shareholders would not see any profit from the enterprise. The National Convention nationalized the survey in September 1793, with the regional maps taken out of circulation and the plates confiscated by the Dépôt de la Guerre. This left the project in limbo, and it was not until the intervention of Napoleon Bonaparte in 1804, that the project would finally be resumed. In 1815, the final sheets of Brittany were completed, thus bringing an end to one of the greatest surveys in history. The map would not be superceded until the publication of the military staff map of 1866.

See also items 18 and 30.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. I.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. II.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. III.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. IV.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. V.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. VI.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. VII.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. VIII.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. IX.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. X.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XI.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XII.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XIII.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XIV.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XV.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XVI.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XVII.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XVIII.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XIX.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XX.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXI.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXII.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXIII.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXIV.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXV.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXVI.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXVII.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXVIII.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXIX.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXX.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXXI.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXXII.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXXIII.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXXIV.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXXV.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXXVI.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXXVII.

CARTE GEOGRAPH. DE LA FRANCE PAR Mrs CASSINI

TOM. XXXVIII.

“The Map that Changed the World”

41 **SMITH, William**

A Delineation of the Strata of England and Wales, with Part of Scotland; exhibiting the Colleries and Mines, the Marshes and Fen Lands originally overflowed by the Sea, and the Varieties of Soil according to the Variations in the Substrata, Illustrated by the most descriptive Names. [together with] A Memoir to the Map and Delineation of the Strata of England and Wales, with part of Scotland. By William Smith, Engineer and Mineral Surveyor.

Publication
London, John Cary and J. Wyld, 1815.

Description
First edition, folio (560 by 370mm), signed and numbered by the author to the lower right corner of sheet VI, third issue (the “a” series), key map, large engraved map on 15 sheets, fine original hand colour, original half calf over marbled paper boards, rebacked and recornered, original calf label lettered in gilt to upper board, spine lettered in gilt; [together with] Quarto (260 by 210mm), title, dedication to Joseph Banks, list of subscribers, contents, 50pp., two tables providing information on the strata upon his large map, original blue wrappers, title on pink paper oval label, pasted to upper cover.

Scale
5 miles to one inch.

References
J. Challinor, “The Beginnings of Scientific Palaeontology in Britain” Annals of Science 6 (1948): 46-53’ Joan M. Eyles, “William Smith”, in Dictionary of Scientific Biography (vol.12), ed. Charles Coulston Gillesppie (New York: Scribner, 1970-80) 486-492; Eyles, “William Smith: A Bibliography of his Published Writings, Maps and Geological Sections” Journal of the Society for the Bibliography of Natural History V (1969); H.D. Horblit, One hundred books famous in science: based on an exhibition held at the Grolier Club (New York: Grolier Club, 1964), 94; Ruth A. Sparrow, Milestones of Science: Epochal books in the history of science as represented in the Buffalo Society of Natural Sciences, (Buffalo: Buffalo Society of Natural Sciences, 1972), 180; Simon Winchester, The Map that Changed the World (London: Harper Collins, 2001).

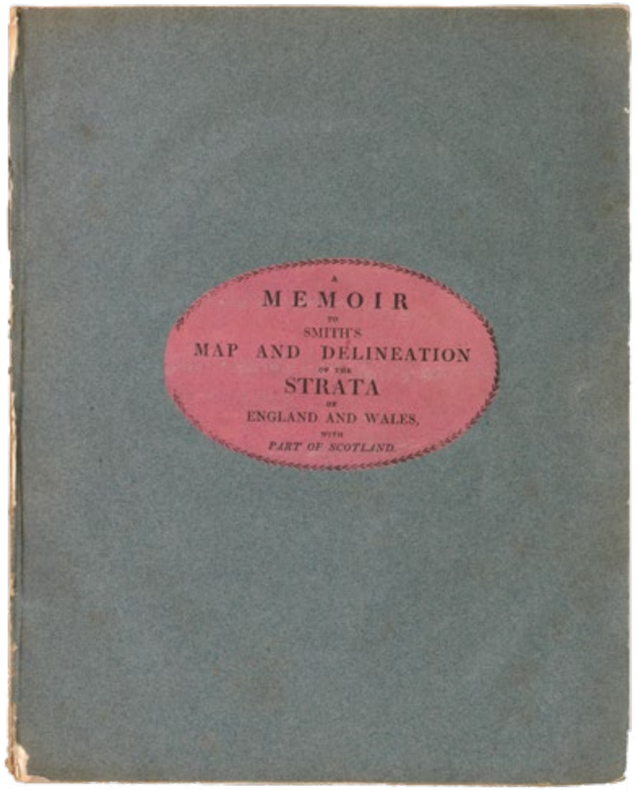
The first large scale, detailed scientific geological map of any country: “A major cartographic and scientific achievement” (Eyles, DSB). Smith’s triumph in executing this, his subsequent fall and then final recognition is the stuff of scientific legend: “he was imprisoned for debt, turned out of his home, his work was plagiarised, his wife went insane and the scientific establishment shunned him” (Winchester). However, Smith’s overwhelming contribution to the science of geology was his recognition, as outlined in the Memoir, “that each stratum is also possessed of properties peculiar to itself, has the same exterior characters and chemical properties, and the same extraneous or organised fossils throughout its course”. It was this theory, developed as early as 1796, that enabled Smith to “accurately predict, and therefore map, the geological composition of Britain” (Challinor). The connection between strata and their fossils was noted by the Danish scientist Nicolas Steno in his 1669 work ‘De Solido’, but it was Smith who first understood that the principles of stratigraphy could be applied on a national scale. His development of the mechanisms of superposition (the theory that geological strata are formed in order), placed palaeontology as a fundamental part of geology and lent credence to the theory of deep time, leading to a better understanding of the age of the earth. His great map is astoundingly accurate, and modern versions have made only relatively minor modifications to his work.

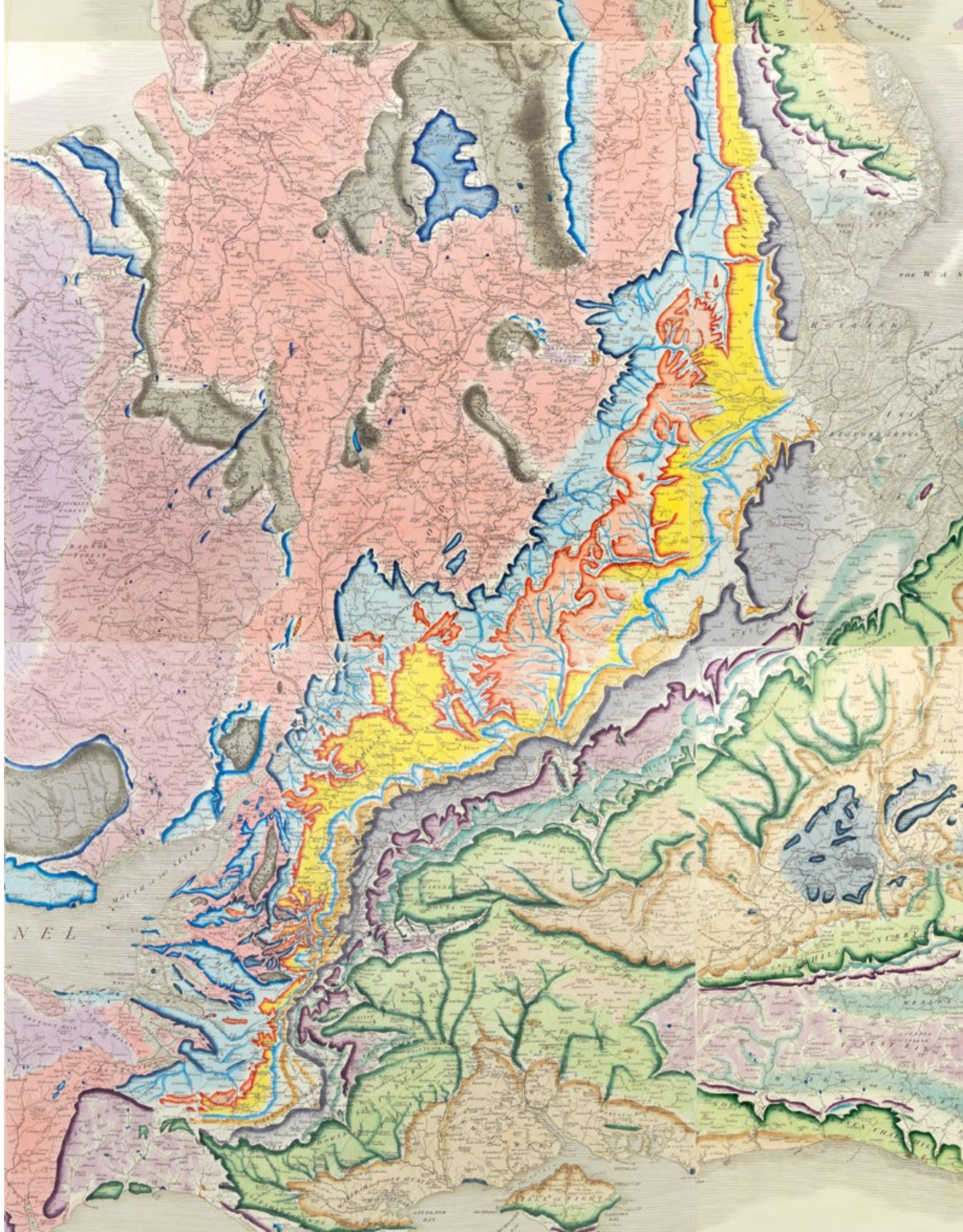
Five states of Smith’s work have been identified: an early unnumbered state (known in only a few copies); a series numbered 1-100, which Smith signed between 2 November and 17 December 1815; a series numbered a1-100 (the present example is of this series), signed between 17 December 1815 and 23 January 1816; a series numbered b1-100, signed after 23 January 1816; and an unnumbered series probably issued in 1823 or later (watermarks are dated 1823).

The present copy has been signed and numbered by the author in ink on the lower right corner of the sheet VI “Wm: Smith - a,77”, and is additionally numbered by him in ink “a77” on the lower left margin of the title sheet.

“The map was supplied either in sheets [usually bound as an atlas - as in the present example], or mounted on canvas and rollers, or fitted in a case for travelling” (Eyles, Bibliography). Eyles suggests that a possible 400 copies of the map were contemplated, but it is most probable that due to the economic situation in 1815, sales were small and no more than 100 copies were produced. This is reflected in library holdings, with OCLC only recording eight copies; RLIN duplicates Yale and Linda Hall and adds another three in Cornell, Brown, Stanford; KVK adds copies in Staatsbibliotheks Berlin and Zurich.

To have both the map and the explanatory text together is exceedingly rare; in fact, the British Library online catalogue suggests that they have only the accompanying Memoir text, and not the map itself.





Half a tent is better than none ...

42 **CROSS, Joseph**

Chart of Part of New South Wales, with Plans of the Harbours. Respectfully dedicated to Major Mitchell, Surveyor General of New South Wales by his most Obedt. Servant J. Cross.

Publication
London, Engraved and published by Cross, 18 Holborn (opposite Furnivals Inn), 1834.

Description
Engraved map with fine original hand colour, dissected and mounted on linen with green cloth covers, two tears to folds, original green cloth slipcase with publisher's label.

Dimensions
940 by 610mm (37 by 24 inches).

References
James Bonwick, Discovery and Settlement of Port Phillip: Being a History of the Country Now Called Victoria, Up to the Arrival of Mr. Superintendent Latrobe (Melbourne: George Robertson, 1856), 21-23; Thomas Henry Braim, A History of New South Wales from its Settlement to the Close of the Year 1844, vol.2, (London: Richard Bentley, 1846), 56; William Hilton Hovell, Reply to 'A Brief Statement of Facts, in connection with an Overland Expedition from Lake George to Port Phillip, in 1824' (Sydney: Thomas Daniel, 1855), 23; H.S., "The Discovery of the Murray", The Argus (Melbourne), 19 April, 1924, 7; "The Late Hamilton Hume, The Explorer", The Sydney Morning Herald, 24 April, 1873.

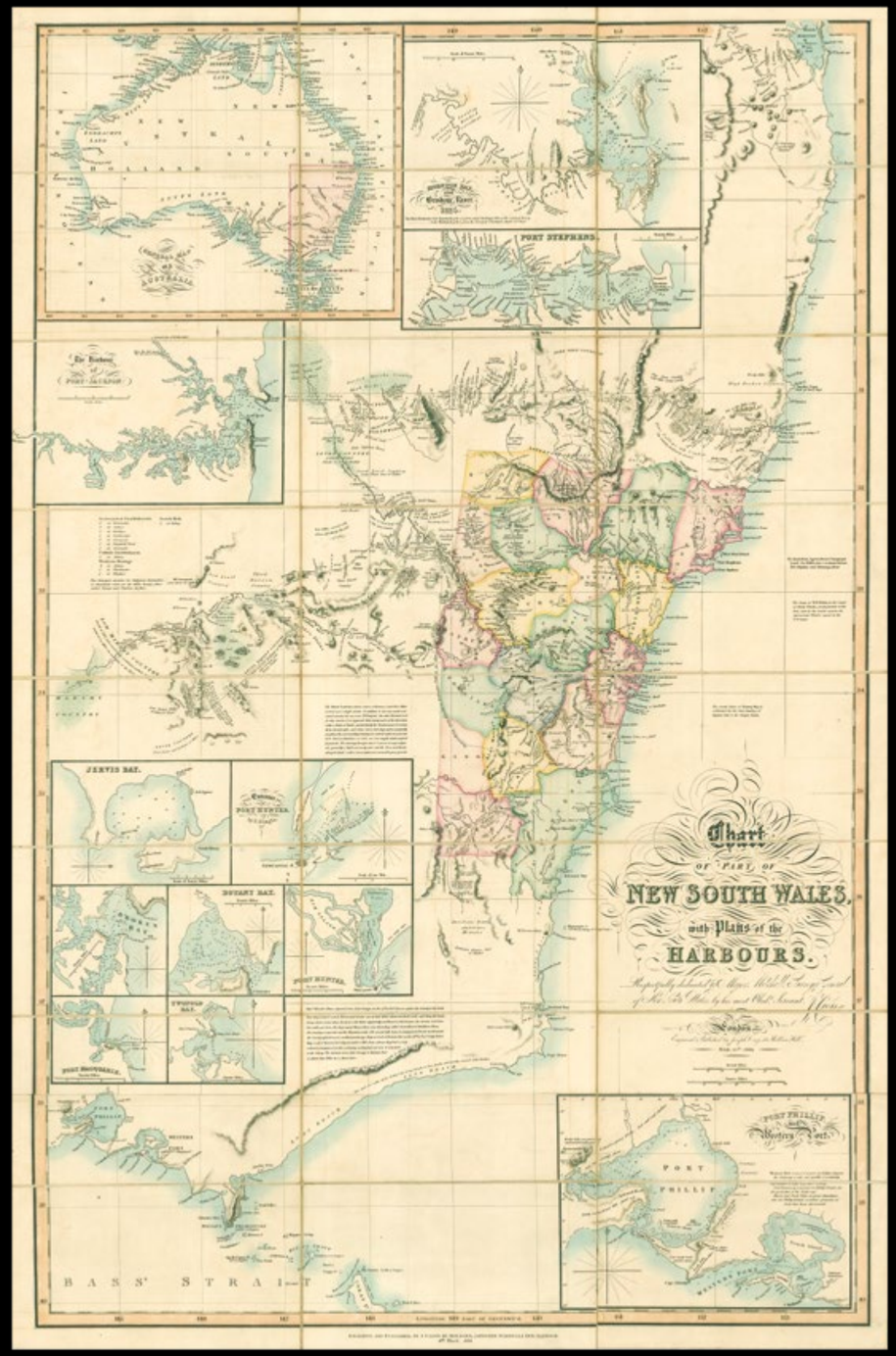
A map of the colony of New South Wales. The various inset maps show ports and harbours around the territory: Port Philip and Western Port, Botany Bay, Jervis Bay, Port Hunter, Broken Bay, Port Macquarie, Twofold Bay, Port Stephens, Morton Bay and Brisbane River, Port Jackson, and one larger map of the whole continent.

New South Wales was the site of the first British settlement in Australia. It started life in 1788 as a convict colony, but immigration rocketed in the early nineteenth century after early settlers found that the land was perfect for cultivating meat and wool, and after the British government's decision in 1831 to sell crown land in the colonies instead of granting it to convicts. By the 1830s the main exports were wool, fish oil, and whale products. Text at the right hand side records that "The Coast of N.S. Wales is the resort of Black Whales, at all periods of the Year, and in the winter season the Spermiceti Whales repair to the N.E. Coast."

The annotations on the map reflect the gradual progress of the exploration of the Australian interior. The note near Botany Bay records that it is "celebrated for the first landing of Captain Cook and Sir Joseph Banks" in 1770. 60 years later, when this map was published, huge swathes of the interior remained unknown. An inscription on the south coast records the expedition of Alexander Hamilton Hume and William Hovell, who aimed to find new grazing grounds and follow the paths of westward flowing rivers to see where they finished. The Australian Hume and Englishman Hovell were at odds with each other from the beginning, racing each other to each new landmark and quarrelling over who should name them. Their animosity came to a head when they disagreed on which direction to take, resulting in the split of the expedition. While dividing up the supplies, which even included cutting their single tent in two, Hume and Hovell ended up tussling over a frying pan: each left with half (Bonwick). After their return some glorious mudslinging ensued in the Australian press, with Hovell accusing Hume of "paltry vanity" and "morbid egotism" (Hovell).

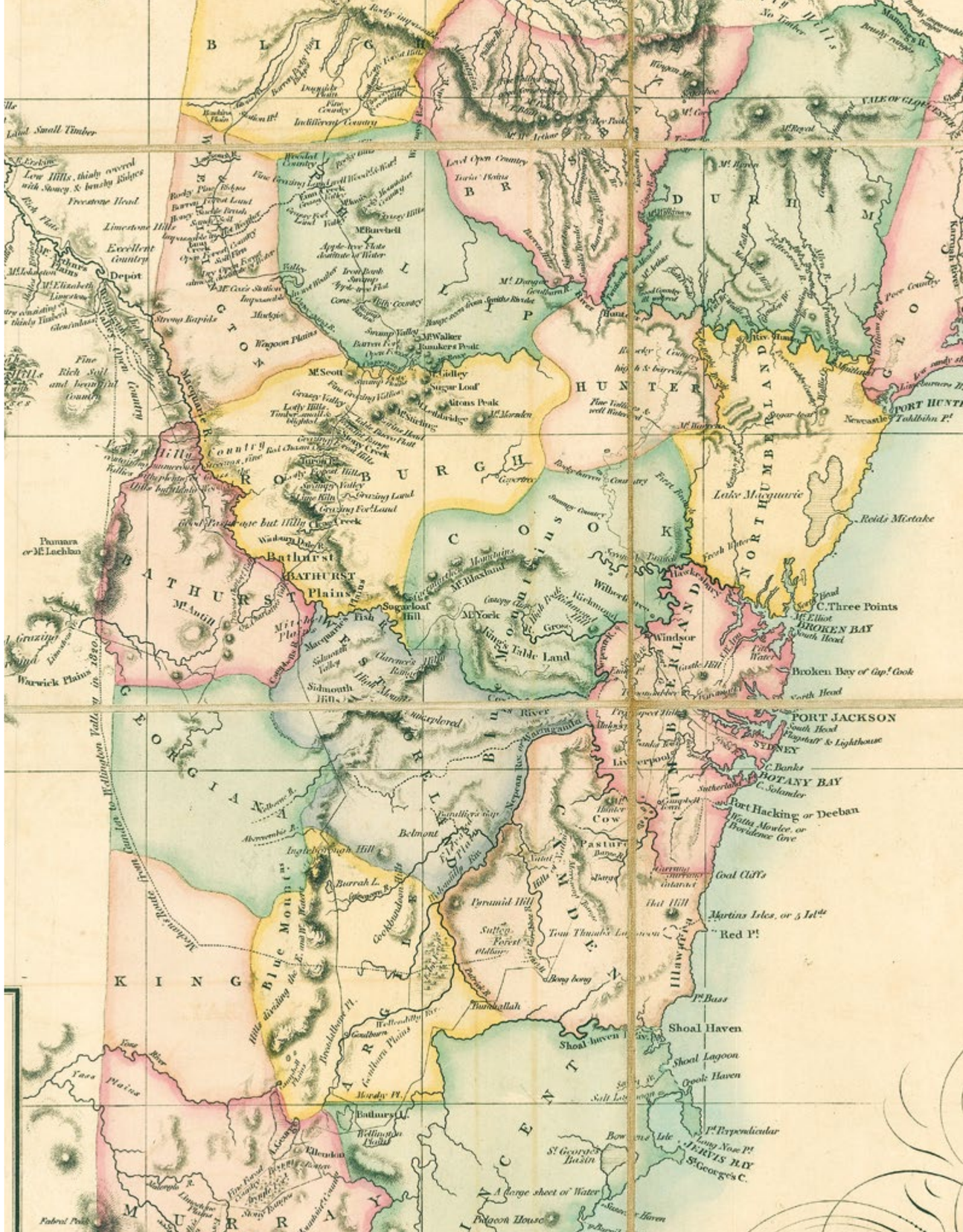
The Brisbane River, shown in the inset map at the upper edge, had only been discovered nine years before, and named after the Commissioner at the time, Sir Thomas Brisbane. The map also records the lands held by the Australian Agricultural Company, formed in 1824, the largest business of its kind. The shareholders were granted one million acres of land in New South Wales on which to raise sheep and cattle, and were wildly successful. The Company was headed at the time by the polar explorer Sir William Parry.

It is dedicated to Sir Thomas Mitchell, who became Surveyor-General of New South Wales in 1828, holding the position until his death. Mitchell's long career included four expeditions into Australia's interior to map uncharted territory, which earned him a knighthood in 1838. He was also the last man in Australia to challenge anyone to a duel. His opponent



was Stuart Donaldson, who had refused to retract a public criticism of the expenditure of Mitchell's government department. Three shots were exchanged without injury (although one went through Donaldson's hat) and Donaldson went on to become the Premier of New South Wales.

We have only been able to trace two institutional examples of this edition, in the University of Cambridge Library and the National Library of Australia.



Victoria during the Gold Rush

43 **WINDSOR, G.A. and William SLIGHT**

Map of Victoria Constructed and Engraved at the Surveyor General's Office, Melbourne. Published by authority of the Government. Under the direction of A.J. Skene, MA Surveyor General, The Hon. J. J. Casey, President, Board of Land and Works & Comr. of Lands & Survey.

Publication
Melbourne, August 15th 1872.

Description
Lithographed map with outline original colour, dissected and mounted on linen, folding into green cloth covers with gilt tooling and lettering.

Dimensions
1310 by 1990mm (51.5 by 78.25 inches).

References
NLA MAP RM 1945.

A detailed map of the state of Victoria. At the time of printing, Victoria was a relatively new colony, established in 1851. The discovery of gold near Ballarat and Bendigo a few months later set off one of the largest gold rushes in history, as settlers poured in to seek their fortunes. The map reflects the colony's source of population and wealth, showing how settlements cluster around the gold fields.

The map was commissioned and overseen by Alexander Skene and the Hon. J. J. Casey. Alexander Skene was a Scottish surveyor who had a prominent role in land distribution and regulation in Australia. The Hon. J. J. Casey was the Commissioner for Victoria at the time, a colourful figure who went on to become Minister for Justice. A contemporary newspaper reports in 1878 that Casey had complained that someone without a title had preceded him into dinner at the Paris Exposition Universelle, and had told the Prince of Wales himself that Victoria should be given more land. While his manner may have been distasteful, Casey's claim was built on a solid foundation. Gold exports from Victoria enabled Britain to clear all foreign debts by the end of the century, and the explosion in population, particularly in Melbourne, meant that it was one of the most successful new colonies. However, the growth in population also initiated demands for agricultural and political reform, policies aided by the accurate surveying and mapping of Victoria, and the ultimate aim of this map.

We could trace only two institutional copies of this edition, in the National Library of Australia and Cambridge University Library.

Rare large-scale plan of Singapore with connections to an important colonial official

44 MCCALLUM, Capt. H.E.

Map of Singapore Town Shewing Building Allotments & Registered Numbers of Crown Leases. His Excellency Sir Frederick A. Weld K.C. M.G.Governor of the Straits Settlement 1881. Singapore, Surveyor General's Office, H.E. Mccallum, Capt. H.E. Acting Colonial Engineer and Surveyor General.

Publication
London, Stanford Geological Establishment, 1881.

Description
Engraved plan on three sheets, joined dissected and mounted on linen, extensive manuscript annotations.

Scale
20 inches to 1 statute mile.

Dimensions
970 by 1830mm (38.25 by 72 inches).

The map is orientated with west at the top and stretches from north to south from Kallang River to Tanjong Pagar, and west to east from Cairn Hill to the Esplanade. The most prominent geographical feature is Singapore River, which can be traced to beyond present day Zion Road. All the major geographical features and public buildings are marked, including hills, rivers, parks, law courts, police stations, hospitals, and barracks. Notable buildings include St Andrew's Cathedral and Fort Canning. It was in the bunker of Fort Canning that General Percival decided to surrender British-held Singapore to the Japanese in 1942 during the Second World War.

To the left of the title is the manuscript signature of H.T. Haughton, indicating that it was his personal copy. Haughton took a leading role in the administration of the Straits Settlements, a British colony comprising Singapore; the Malaysian islands of Malacca, Dinding and Penang; and the Christmas and Cocos Islands. He became a Justice of the Peace in Singapore in 1883, and acted as Collector of Land Revenues from 1885. By 1896 his roles included Acting Assistant Colonial Secretary, Clerk of Councils, Official Assignee and Registrar of Deeds. Alongside his role in colonial government, he also wrote on Singaporean culture for the local journal of the Royal Asiatic Society, including a piece on the etymology of Singaporean street names. The extensive manuscript additions to the map, including the extension of the street system to the lower left, suggest that it may have been used during research for the piece. His stellar career was cut short by a premature death in 1897.

The surveyor, Captain Henry Edward McCallum, was in the early days of his colonial career. McCallum was appointed acting colonial engineer and Surveyor General in 1881. After working in the Straits, he went on to succeed Sir Herbert Murray in Newfoundland, and like his predecessor, clashed with the Newfoundland Government. The Newfoundland Premier, Sir Robert Bond, asked McCallum to dissolve the House of Assembly. McCallum's refusal eventually resulted in his recall. He also served as the Governor of Lagos, Natal and Sri Lanka (Ceylon). While in Singapore, McCallum designed the Raffles Library and Museum on Stamford Road (today's National Museum of Singapore), which was opened in 1887. McCallum Street, in downtown Singapore, is named after him.

The map is dedicated to Sir Frederick Weld, who became Governor of the Straits Settlements in 1880. His distinguished colonial career included serving as Premier of New Zealand, Governor of West Australia and Governor of Tasmania. Two roads are named after him in modern day Singapore.

Rare; we are able to trace only one institutional example: that in the National Library of Singapore.

MAP OF

SINGAPORE TOWN

SHEWING BUILDING ALLOTMENTS & REGISTERED NUMBERS

OF CROWN LEASES.

H.E. LIEUTENANT GEN. SIR FREDERICK A. WELD, K.C.M.G.

Governor of the Straits Settlements.

1881

The Hull-House Wage and Nationality Maps

45 **ADDAMS, Jane, Ellen GATES STARR, and Samuel Sewell GREELEY**

[The Hull-House Maps] 1. Wage map no. 1, Polk to Twelfth [together with] 2. Nationalities map no. 1, Polk to Twelfth.

Publication
[New York, Thomas Y. Crowell 1895].

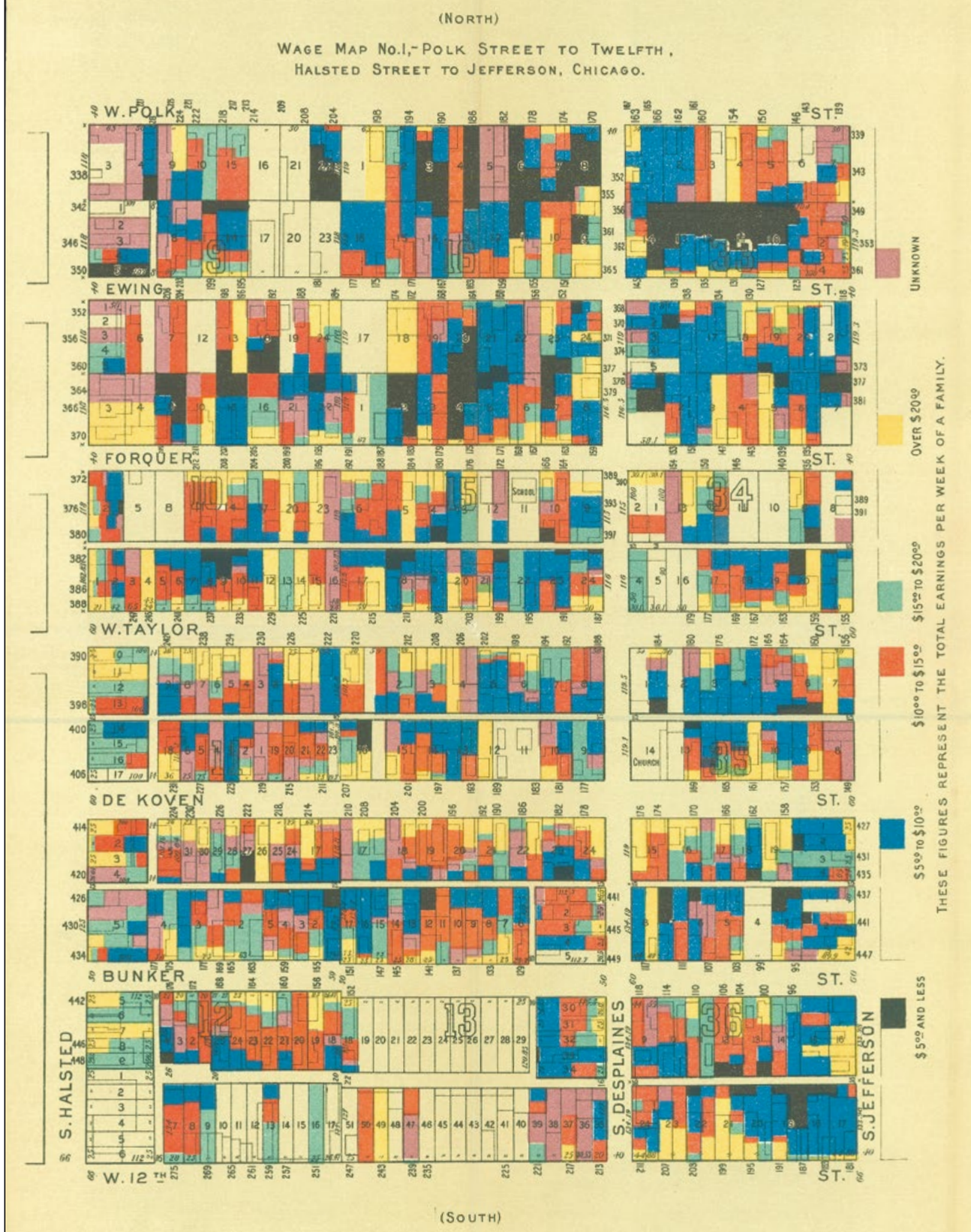
Description
A pair of lithograph maps, printed in colours, a few areas of discolouration at folds.

Dimensions
360 by 1120mm (14.25 by 44 inches).

References
Robert Holland, Chicago in Maps, (New York: Rizzoli, 2005), 160-163.

The maps from this series are among the first to document a range of socio-economic data from slum neighbourhoods in the midst of third wave immigration into the United States. When impoverished Europeans fled to America in search of financial security, the rapid rate of immigration and lack of housing that awaited them led to atrocious conditions of decay and overcrowding in industrial centres. The first four of the wage maps detail the area from Polk Street to West 12th Street Chicago, known now as Little Italy, for the mass influx of Italian immigrants to the area during the late nineteenth century.

The Hull House Maps and Papers project was led by Florence Kelley and colleagues at Hull House, a settlement house at 335 South Halsted Street, Chicago. First opened by Jane Addams in 1889, Hull House acted as a residential facility as well as a community centre for newly arrived immigrants. A place where integration into American society was taught through various skills and language classes, Hull House illustrated the burgeoning social concerns circulating throughout the late nineteenth and early twentieth centuries.



(North)

Nationalities Map No.1-Polk Street to Twelfth, Halsted Street to Jefferson, Chicago.

(South)

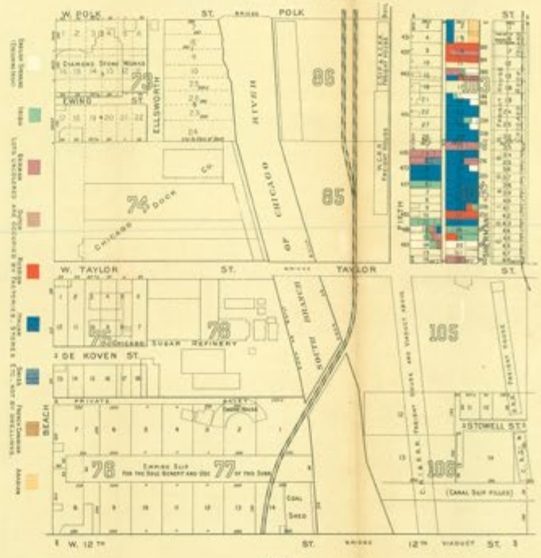
(North)

Nationalities Map No.2-Polk Street to Twelfth, Jefferson Street to Beach, Chicago.

(South)

(North)

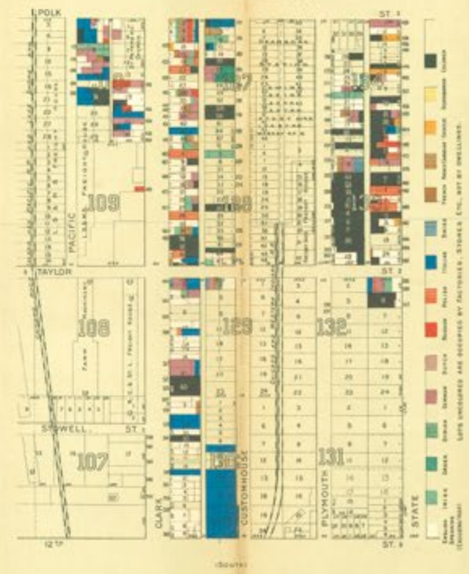
Nationalities Map No.3-Polk Street to Twelfth, Beach Street to Pacific Avenue, Chicago.



(South)

(North)

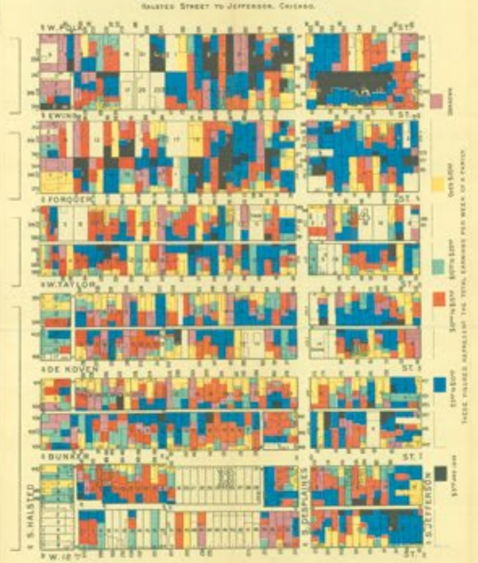
Nationalities Map No.4-Polk Street to Twelfth, Pacific Avenue to State Street, Chicago.



(South)

(North)

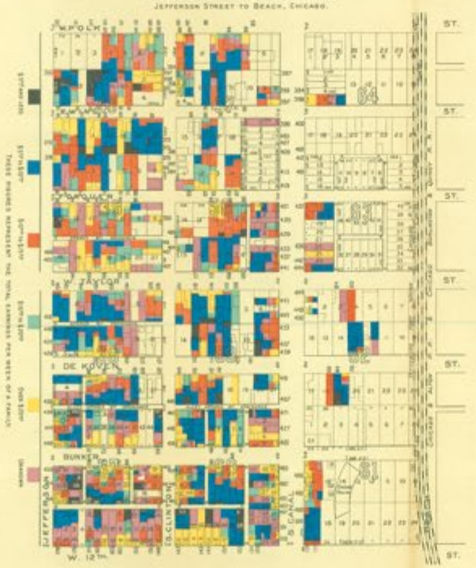
Wage Map No.1-Polk Street to Twelfth, Halsted Street to Jefferson, Chicago.



(South)

(North)

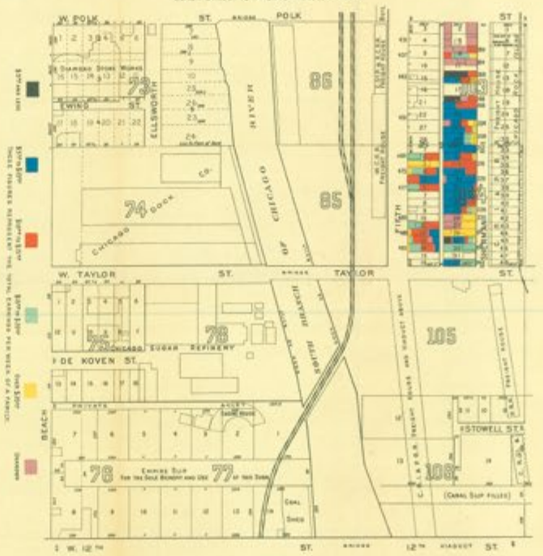
Wage Map No.2-Polk Street to Twelfth, Jefferson Street to Beach, Chicago.



(South)

(North)

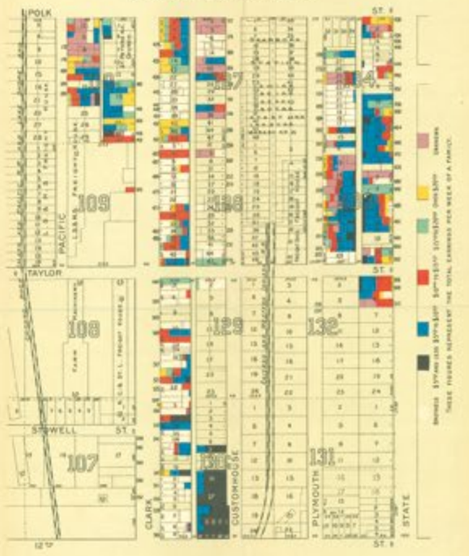
Wage Map No.3-Polk Street to Twelfth, Beach Street to Pacific Avenue, Chicago.



(South)

(North)

Wage Map No.4-Polk Street to Twelfth, Pacific Avenue to State Street, Chicago.



(South)

The apotheosis of the Golden Age of Dutch cartography

46 **BLAEU, Willem**

[A pair of Globes - Terrestrial and Celestial] Globus Orbis Terrae.

Publication
[Amsterdam, Joan Blaeu, c.1645-48].

Description
Each globe with a diameter of 680mm (26 inches) composed of 36 hand-coloured engraved half gores and two polar calottes pasted on to a plaster sphere, rotating on brass pinions within brass meridian ring with graduated scale, set into a seventeenth century Dutch wooden base with an engraved horizon ring adumbrating scales, calendar, almanacs etc, minor nicks and scratches to several parts of the printed surface, as is inevitable for a globe of this scale and period. A remarkable survival in very fine condition.

References
Elly Dekker, Globes at Greenwich (Oxford: Oxford University Press, 1999), GLBO 130; Peter van der Krogt, Globi Neerlandici: The Production of Globes in the Low Countries (Utrecht: HES, 1993), BLA V, 176-187 and 509-523; Krogt, The Most Magnificent and Largest Globes of Blaeu, the World's Greatest Globe Maker ('t Goy-Houten: HES, 2001).

Willem Janszoon Blaeu's 26-inch globes are the apotheosis of Golden Age Dutch cartography. Their size and grandeur stand as testimony to the confidence and wealth of a great maritime and trading nation at the height of its powers.

"These globes were not merely the largest globes ever made in Amsterdam, and even the world's largest up to that time, and virtually until the end of the seventeenth century, they were also representations of enormous human achievement - an extraordinary record of an extraordinary period of geographical discovery. During the preceding century, more than half of the known world, including the entire Western Hemisphere, had been charted and, more recently, during Blaeu's own time, large portions of the Pacific were being explored. Spanish, Portuguese, Italian and French explorers had contributed the lion's share of what was known, but during Blaeu's generation the Dutch themselves had taken up the mantle as masters of the sea and changed the face of the world with their voyages of discovery. What better way for a small seafaring nation with large ambitions to express its pride than to construct a symbol of its achievement in such a quintessentially representative form; a three-dimensional model of the world that would fill a room with its mass; a magnificent statement of what the Dutch had achieved and were achieving with every new fact and update added by Blaeu over the course of the Globe's transformation, through four states from 1617 to 1645/48?" (van der Krogt, Globus Neerlandici).

Terrestrial globe
Blaeu intended the globe to be a luxury item aimed at wealthy merchants and noblemen. However, it was also the most advanced cartographic document of the age: it was a monument and tool; to be used as much as admired. The 'Globus Orbis Terrae' of 1617 was the first dated printed documentation of Hudson's first voyage and the first to give the name "Nieu Nederland" to the area now known as New York, Manhattan and Long Island. It was also the first depiction of Schouten and Le Maire's discovery of a navigable passage around Cape Horn (named after Schouten's hometown of Hoorn); a revelation of such economic importance that Blaeu's globe was initially suppressed by the States General following a dispute between the Dutch East India Company (V.O.C.) and Schouten and Le Maire's 'Australian Company'. Schouten and Le Maire's voyage was undertaken in order to circumvent the monopoly held by the V.O.C. on all trade with the East via the Cape of Good Hope or through the Straits of Magellan. By discovering a route to the Pacific via Cape Horn, the Australian Company changed cartographic orthodoxy by rendering the existence of a great southern landmass contiguous with Tierra del Fuego impossible. Blaeu obtained this information from undisclosed sources, as the documentation

of Schouten and Le Maire's voyage was sequestered by the V.O.C., and sought to publish it in a book featuring maps of their discoveries. However, in an ultimately unsuccessful effort to obtain a charter to publish his voyage, Le Maire pressed for an injunction on Blaeu's book. Blaeu, with more than a little cheek, kept his globe from becoming outdated with the simple device of removing the old, incorrect information and replacing it with… nothing! In due course the injunction was lifted and Blaeu was able to publish his globe with the new shape of Tierra del Fuego and a reduced southern continent of Magellanica. After Willem Blaeu's death in 1638, his son, Joan Blaeu (1596-1673), undertook a major update of the globe to incorporate new discoveries. These were carried out with a combination of re-engraving the plates and printed overlays pasted on to the relevant portions of the globe. The most drastic of these updates involved the erasure of an entire dedication and cartouche bearing the "Advice to Reader" in order to make room for the findings of Abel Tasman's voyages and to show Australia. Other areas of re-engraving included changes to Canada to show the discoveries of Thomas Button (1612-13), William Baffin (1616), and others; alterations to the coast of Greenland; and the removal of the name and diminution in size of the mythical island of Frisland. The printed overlays allowed Joan to alter Japan to incorporate the discoveries of Maarten de Vries in 1643, and to shift the entire coast of North America approximately 20 degrees eastwards and show California as an island. North of California, however, he became less sure of himself and retained his father's delineation. Here any attempt at a western coastline is abandoned, replaced instead by a large decorative cartouche surrounded by beavers and Native Americans. The various attempts of Gaspar and Michael Corte Real, Sebastian Cabot, Hugh Willoughby, Martin Frobisher, John Davis, Willem Barentz, Jan Huyghen van Linschoten, and Henry Hudson to find a northwest and northeast passage are described, ending with the hope that Hudson's discovery of a "huge and wide open sea" would result in the long sought-after route.

Celestial globe

Astronomical details on the sphere include a magnitude table close to the North Pole. The Milky Way and Magellanic Clouds are labelled. Close to the North Pole, there are two tables in a cartouche, one explaining the astrological symbols marked on the sphere and the other explaining the precession with a table based on a constant precession rate. There are novae with explanations in Cassiopeia, Cygnus, and Ophiuchus, with the first and last observed positions marked. A total of 83 stars and up to eight star groups are named; some of the stars are also named in Arabic script. The 48 Ptolemaic constellations and four of the non-Ptolemaic constellations are drawn. The 12 southern constellations of Plancius are also drawn. The nomenclature for some of the Ptolemaic

constellations is extensively detailed and some of them are given in Greek, followed by the name in Arabic script. The constellations are said to be in the tradition of Mercator, but this is not the case. For this globe Blaeu relied on the style used by Johann Bayer in his 'Uranometria' of 1603.

Publication History
Peter van der Krogt has identified four states, with three variants of the first state and two of the second. These may be summarized as follows:

First state, 1617.
1a. First edition.
1b. [May 1617] Tierra del Fuego removed.
1c. [c.1618] Re-engraved to show Cape Horn, Le Maire Strait, revised coastline for New Guinea and numerous newly discovered islands in the Pacific.

Second state, [1622].
In the "Advice to the Reader", "In ista quam", the signature and date are changed to: Guiljelmus Caesiius Auctor. Anno MDCXXII. If the original dedication is visible, two variants may be distinguished.
2a. The name "Ianssonius" is changed to "Caesius".
2b. The name "Caesius" is changed to "Blaeuw".

Third state, [between c.1622 and c.1645].
In the "Advice to the Reader", "In ista quam", the signature is changed to: "Guiljelmus Blaeu Auctor. Anno MDCXXII". Although the date is unaltered, judging by other publications, the spelling of "Blaeu" indicates that this state dates from after c.1630. In the charter, "Ianssonij" is changed to "Blaeuw".

Fourth state, [c.1645/48].
The cartography is heavily revised by Joan Blaeu.

Provenance
From the collection of Schloss Baldern, owned by the Princely House of Oettingen-Wallerstein, and home to one of the largest private collections of weapons in Germany.

A portable orrery

47 JONES, W. & S.

A New Portable Orrery Invented and Made By W. Jones and Sold by him in Holborn London.

Publication
London, W. & S. Jones, 30 Holborn, January 1st, 1794.

Description
1½-inch globe, twelve hand-coloured engraved gores, brass twilight pointer, held above an angled ring to alter the height of the ivory moonball, a secondary ring graduated with zodiac signs, disc showing the phases of the moon, on a functional multi-wheeled geared mechanism, central brass sunball mounted on central axis, two ivory planets on brass arms, brass index pointer; detachable ivory handled crank handle, mahogany horizon plate with hand-coloured engraved paper, graduated around the red-painted edge with days of the month and signs of the zodiac, compass directions and degrees of amplitude and azimuth, raised on three short baluster-turned legs [and] brass planetarium, hand-coloured engraved paper dial, brass arms supporting seven ivory planets, one with ivory ring, and fourteen moons, mahogany horizon plate with hand-coloured engraved paper, red-painted edge; both contained in original locking mahogany case.

A fine example of Jones' 'Portable Orrery'.

William (1763-1831) and Samuel (1769-1859) Jones were the sons of an optical instrument maker and bookseller, John Jones. William studied under Benjamin Martin, a well-known instrument and globe maker. They founded their scientific instrument firm, W.& S. Jones, which became one of the greatest in London in the early nineteenth century. It was well known for its portable orreries – Thomas Jefferson bought one in 1792 – and William wrote a guide for their use, 'The Description and Use of a New Portable Orrery' (1812). They were also known for marketing globes by William and Thomas Bardin.

In his guide, William Jones wrote that this type of orrery was particularly suited for education, and consisted of two parts: a "tellurian and planetarium". The tellurian demonstrates the relationship between the sun, moon and earth, and the planetarium shows the solar system. The tellurian part can be used to show the progression of day and night, the change of the seasons and eclipses. The engraved base is crammed with information. A pair of cherubim hold banners acting as trade cartouches on either side of the mechanism. The pink and green table supported by two figures in classical drapery, one leaning on a globe, gives information on the six planets nearest the sun for the year 1794. It outlines their distance from the sun, the length of their solar year, their diurnal rotation, diameter, greatest elongation and parallax. Two other tables provide the orbits and distances of the satellites of Jupiter and Saturn.

The planetarium attachment was used to show the motion of the planets around the sun, and to give an idea of their relative size. The engraved base features calendrical and zodiacal scales, giving the seasons, solstices and equinoxes, as well as the relative sizes of the planets.

Dedicated to Sir Joseph Banks and Neville Maskelyne

48 **BARDIN, William**

[A pair of globes - Terrestrial and Celestial]. To the Rt. Honorable Sir Joseph Banks BARt. K.B. President of the Royal Society This New British Terrestrial Globe [WITH:] To the Rev Nevil Maskelyne D.D. FRS. Astronomer Royal This New British Celestial Globe.

Publication
London, 1799 [additions to 1807].

Description
Pair of 18 inch floor standing library globes, turned and reeded legs, spheres covered with plaster coating, two sets of 12 engraved and hand-coloured half gores on each globe, varnished.

Of note on the terrestrial globe is the sea "seen by Mr Here in 1771" and the "sea seen by Mc[...]kenzie 1789". Australia is labelled "New Holland", although its south coast is not outlined. "Van Diemans Land" is shown as an island, tracks of Cook's voyages are shown and a note on his death on 14 Feb 1779 appears on Hawaii ("Owhyhee"). The celestial globe includes 48 Ptolemaic constellations and the non-Ptolemaic constellations: Coma Berenices, Antinous, Crusero, Columba Noachi; all 12 southern constellations of Plancius, Camelopardalis, Monoceros, Cor Caroli, Robur Caroli; all those of Hevelius, Tarandus; those of Lacaille and Taurus Poniatowski.

The Bardin family were among the greatest globe makers in London from the late eighteenth through the early nineteenth century. The patriarch of the family, William Bardin (d. 1798), began globe production in the 1780s. The origin of Bardin's globes is thought to be traceable to the early eighteenth century globes of John Senex. 15 years after Senex's death, the copper plates for his globe gores were sold to James Ferguson.

In 1757, Ferguson transferred his globe trade, including his Senex globe gores, to the scientific instrument maker and lecturer Benjamin Martin (1704-1782). One of Bardin's earliest globes refers directly to Ferguson: "A New, Accurate, and Compleat Terrestrial Globe... originally laid down by the late Mr. James Ferguson, F.R.S... 1783". William Bardin's connection with Ferguson is thought to be through Gabriel Wright (1740-1803), an apprentice of Benjamin Martin. Wright went to work for the Bardin family and assisted Bardin with his first globe in 1782.

In 1790, William Bardin's son, Thomas Marriott Bardin, completed a seven-year apprenticeship and immediately joined ranks with his father, the firm thereafter trading as W. & T.M. Bardin. In 1798, the father and the son team began publication of their 'New British Globes'. The 18-inch globes include dedications to the scientist Sir Joseph Banks, President of the Royal Society (terrestrial) and astronomer Neville Maskelyne (celestial), and were frequently marketed by the scientific instrument makers and dealers W. & S. Jones. The skill required for the production of these 12- and 18-inch globes was much admired by the Bardin's contemporaries. Following T.M. Bardin's death in 1819, his daughter, Elizabeth Marriott Bardin, continued the family's globe production until 1832, at which time the company's title was passed to her husband, Samuel Sabine Edkins.

Rare geographical playing cards

49 **HODGES, Charles**

[Playing Cards] New Geographical Cards.

Publication
London, Published by C. Hodges, Stationer 27 Portman Street, 1827 [but 1828].

Description
Set of 52 playing cards each with original outline hand-colour, a.e.g., 18pp. booklet with entries on each card, all housed in original green morocco pull-off slipcase, lettered in gilt.

Dimensions
95 by 65mm (3.75 by 2.5 inches).

Fine example of Charles Hodges' geographical playing cards.

The suits of spades, hearts, diamonds, and clubs represent the Americas, Europe, Asia and Africa respectively. Each suit carries a map of the entire continent on the ace, and maps of individual countries or areas on the number cards. The picture cards are a mixture of historical and fantastical figures. George IV, Caroline of Brunswick, and the French Revolution politician Robespierre appear as the king, queen and jack of hearts. Robespierre tramples the symbols of monarchy underfoot, hoisting a Phrygian bonnet, the revolutionary symbol of liberty. The artist's opinion of the Revolution is shown by the snake, dagger and corpse to the left. In the American suit, George Washington is the king of spades.

The pack also marks a change in the history of printing cards. It was first issued in 1827, but this example dates from 1828, when the duty ace of spades was introduced. The ace of spades had been required to show the insignia of the printing house since the seventeenth century, but in 1828 it also had to show that a duty of one shilling had been paid. This additional standard card has the imprint of Stopforth & Son, a London engraving and printing firm, which probably produced and printed the plates for Hodges.

ASIA

JAPAN

TIBET

TATARIA

ARABIA

TURKEY IN ASIA

SIBERIA

HINDOOSTAN

PERSIA

CHINA

AFRICA

SOUTHERN OCEAN

CANARY ISLES

SOUDAN OR NIGRITIA

INTERIOR OF AFRICA

UPPER GUINEA

LOWER GUINEA

ABYSSINIA

MAROCCO

BARBARY

EGYPT

EUROPE

NETHERLANDS

PRUSSIA

TURKEY

ITALY

SPAIN & PORTUGAL

AUSTRIA

FRANCE

RUSSIA IN EUROPE

BRITISH ISLES

AMERICA

COLOMBIA

BUENOS AYRES

CHILI

BRAZIL

PERU

GUYANNA

MEXICO

CANADA

UNITED STATES

Waywiser

50 **DIXEY, C. W. & Sons**

Waywiser.

Publication
London, 3 New Bond Street, [c.1850].

Description
Signed to dial Dixey & Sons, London, with engraved brass dial divided for furlongs, miles, poles and yards, six-spoke wheel with steel rim tread, square brass fork body with hinged side for wheel removal, straight handle, on modern mahogany stand.

Dimensions
(height) 930mm (36.5 inches).

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Donald W. Engels, Alexander the Great and the Logistics of the Macedonian Army (California: University of California Press, 1992).

The origins of mechanically measuring and recording distance can be traced speculatively to 336-323 BC when Alexander the Great employed bematists for his campaign into Asia. As Donald W. Engels theorises, the accuracy of the measurements implies that the bematists used a sophisticated mechanical device for measuring distances, undoubtedly an odometer such as the one described by Heron of Alexandria.

The reintroduction of this process in the seventeenth century, with the development of the waywiser, accounted for an influx of cartographic accuracy, and paved the way for the large-scale surveys of the eighteenth and nineteenth centuries. Each revolution of the wheel measured a set distance, while a counter kept track of the number of revolutions, thus allowing the surveyor to walk from one place to another and gain an accurate measurement of the distance in between.

C.W. Dixey & Sons was first established by William Fraser in 1777 as an optical and mathematical instrument company. Fraser's talent was recognised by King George III of England and Royal Warrants and commissions followed. However, the business declined when an assistant, Mr Grice, used the premises as a gambling den.

It was rescued in 1824 when Charles Wastell Dixey and his uncle acquired the business. Over the next century the family proudly served as optician to the monarchs of England and created one of London's most distinguished companies.

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Daniel Crouch Rare Books LLP
4 Bury Street
St James's
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+44 (0)20 7042 0240
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