CARTOGRAPHY IN THE EUROPEAN ENLIGHTENMENT

A map collector's view

Matthew H. Edney and Mary Sponberg Pedley

A little wager to begin. We are betting that a 'person who loves maps', presented with four or five maps, without author or date, could easily date each to the appropriate century, based only on style. Why are the odds in our favour? Because the 'person who loves maps' is a true *amateur*, someone with an attachment or taste for something. A prolonged and profound taste for maps has the inevitable effect of developing a connoisseur's eye for distinguishing styles of layout and design. The *amateur* reading this magazine will find much to satisfy the inner connoisseur in *Cartography in the European Enlightenment*, Volume Four of *The History of Cartography*.¹

A matter of taste

This encyclopedic volume explores all aspects of mapping in Europe, Europe's colonies and the Russian and Ottoman empires in the period from around 1650 to 1800. In particular, Volume Four examines issues surrounding taste and maps through entries on the Art and Design of Maps; Color and Cartography; Iconography, Ornamentation and Cartography; the Cartouche; and Landscape, Maps and Aesthetics. From these essays, we learn something about how eighteenth-century mapmakers, critics and consumers assessed maps and understood their artistic qualities. Their contemplation of these subjects informed a sense of taste and manifestation of styles that today's *amateur* will quickly recognise.

At a glance our *amateur* of maps will recognise the map in Figure 1 as an eighteenth-century product. Its conic projection is surrounded by an unadorned rectangular frame marked by longitude and latitude; it leaves areas blank; colour is restrained if present at all; it lacks any decoration around the multiple scales; there is minimal text within the map; its engraving is elegant and clear. A map from a century earlier would have filled the empty spaces of land and sea with human and animal figures; would have inserted the surrounding frame with vignettes of cities, local costumes, events or

natural features; would be highly coloured; and would have employed baroque strapwork around the scales. A map from a century later would replace frames with simple line boxes, would colour the regions more fully, would place explanatory text in its own box marked 'Explanation' or its equivalent. Such stylistic features were decisions of taste and could determine a printed map's success in the marketplace or its inclusion in a collection. Geographers and mapmakers of the eighteenth century felt as strongly as their consumers about what constituted a successful map.

The author of this map, Jean Baptiste Bourguignon d'Anville (1697–1782), devoted three pages of his work on map composition solely to the question of the writing and placement of names.² After discussing projection, scale and assessment of sources, d'Anville declared the aesthetics of lettering to be of equal importance to the preceding subjects and emphasised that a map should be 'agreeable to the eye'. To this end, he averred, letters should be spaced equally and in proportion to the place or thing named. To always write place names strictly horizontally risked becoming fastidiously monotonous, even fatiguing to the viewer, and would not emulate Nature's variety and disarray.

For d'Anville, eminent geographer of the eighteenth century, design quality was an equal, if not stronger, criterion for the distinction of a 'good' map than was 'accuracy'. Accuracy was too slippery a concept, difficult to judge on sight alone without recourse to an accompanying memoir or explanation of construction.

To judge a map on its aesthetic virtues emphasises that maps in the eighteenth century were considered a type of visual knowledge that fell under the heading of 'Art', even though maps resulted from the practice of 'Science'. The editors of the grand *Encyclopédie*, Jean d'Alembert and Denis Diderot, distinguished between 'Art' and 'Science' not by their logical ends – both aimed to better understand Nature – but by their form and practice. To paraphrase Diderot's explanation in his article on ART in the *Encyclopédie*, the **thing**

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executed by a human to represent an understanding of Nature was Art while the **process** of observing and recording the understanding of Nature was Science.³ Thus understanding cartography as both the art of the map and science of mapmaking helps to emphasise why the criteria of taste, proportion and pleasure were so important for maps.

Other mapmakers were equally concerned with the application of taste to their products. Property owners enjoined surveyors to use the same style in creating maps of each of their land holdings. Military mapmakers aimed to represent relief by remembering that 'if they are not rendered with good taste, they have no effect or are only disagreeable to view'. Determining what constituted good taste was the subject of many treatises and essays, perhaps most succinctly expressed by Charles Louis de Secondat Montesquieu in his *Essai sur le gout* (Essay on Taste) of 1757, in which he maintained that a product like a map provided 'a visual whole that is rich, varied, and ordered, easy to grasp visually, and easy to read'.⁴

The vast array of maps published during the long eighteenth century demonstrates that mapmakers interpreted ideas of 'rich, varied, and ordered' in many ways. Maps, for example, produced by the Homann publishing house in Nuremberg were deeply coloured, endowed with highly decorative cartouches and employed illustrative material to further enhance the map's content (Fig. 2). Such maps eschewed the spare aesthetic of a d'Anville (Fig. 1). Yet Homann's maps, as well as those of his German counterparts in the related publishing houses of Seutter, Lotter and Probst, were as popular and reached as many collections as the French maps. To our twenty-first century eye, they may offer quite a different 'look' but by eighteenthcentury standards they succeeded by being easily grasped and readable.

Aesthetic standards were employed not only by mapmakers but also by their critics. A public discourse surrounding maps may be found in the periodicals and pamphlets that advertised and analysed recently published maps. In addition, separate works aided the map buying public by providing complete lists of maps available for all regions of the globe. Two in particular have come down to us: Johann Gottfried Gregorii's Curieuse Gedancken von den vornehmsten und accuratesten Alt- und Neuen Land-Charten (1713) and Nicolas Lenglet du Fresnoy's Méthode pour étudier la géographie (1716 and several later editions). Gregorii gives his reader over five hundred pages that summarise the lives of



Fig. 1 Southern Section of Jean Baptiste Bourguignon d'Anville, 'Afrique' (Paris, 1744), engraved by Guillaume Delahaye. Copper engraving, 48 × 98 cm. Courtesy of the David Rumsey Collection; www.davidrumsey.com.

mapmakers and their products, ranging from the sixteenth-century geographers Ortelius, de Jode and Mercator, to contemporary names such as Delisle, Schenck and Mortier. He also provides a list of available maps by region, noting their size by the number of their sheets. Lenglet du Fresnoy's six-volume work offers a broader sweep of the geography of regions, and his first volume closes with a 'Catalogue des meilleures cartes geographiques': 252 pages that list maps by both region and author. Lenglet du Fresnoy frequently remarks on map quality: 'bonne carte', 'assez belle carte avec explications', 'belle carte et d'une grande netteté', 'carte originale' or 'carte copiée'. His use of

'good, beautiful, neatness' speaks to aesthetic rather than content-based criteria, and his taste is adamant. He contrasts two maps of the same region thus: 'Guillaume SANSON, le Royaume de Hongrie, en deux feuilles, **médiocre**, 1708. Jean-Baptiste NOLIN, le Royaume de Hongrie, en quatre feuilles, Carte **très-bonne & très-estimée**'. 5

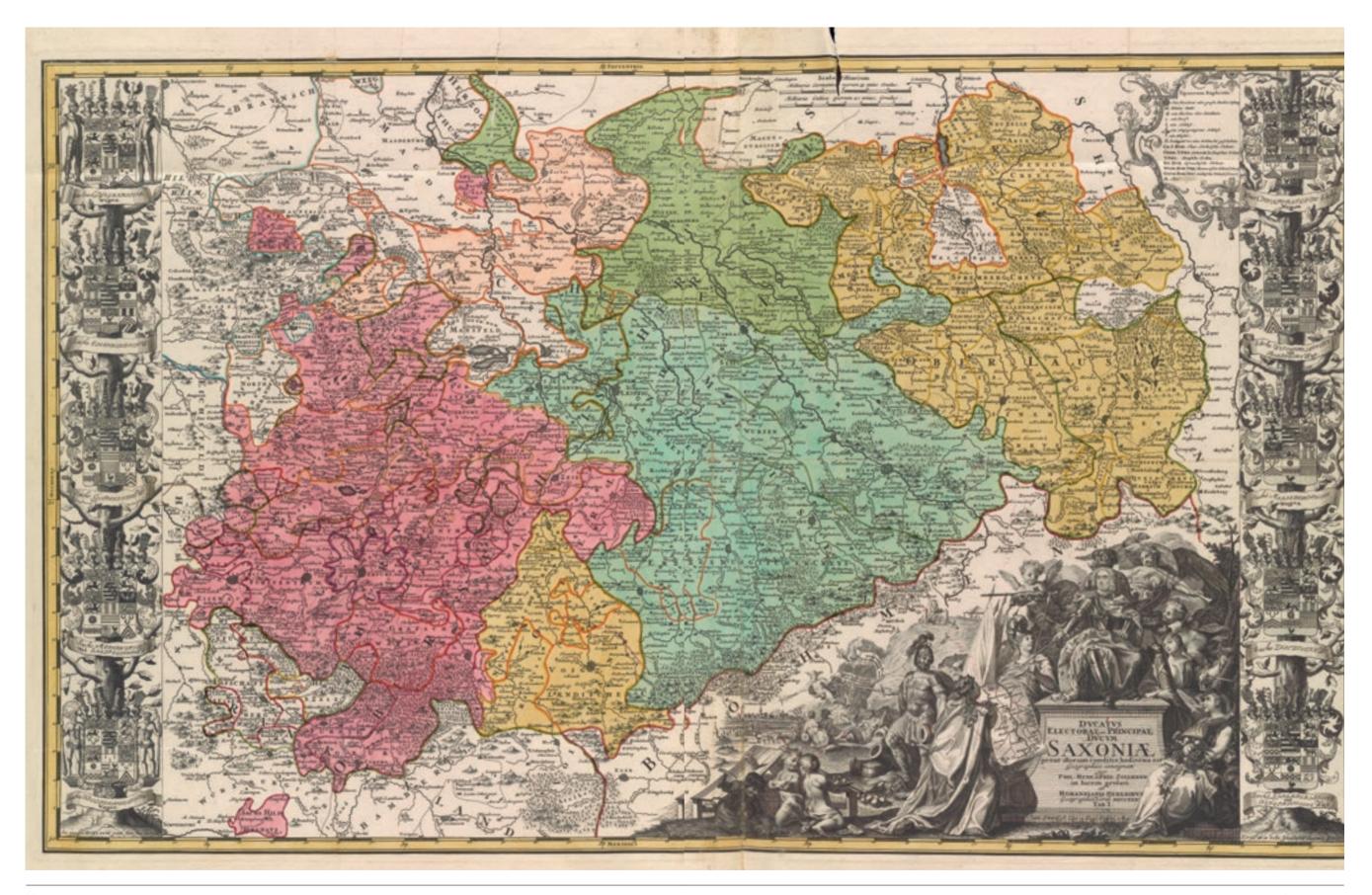
Later in the century, in 1763, the Paris map dealer and publisher, Roch Joseph Julien issued a 'new catalogue' of the maps available in his capacious shop. He, too, noted maps by size (number of sheets) and author. He continued Lenglet du Fresnoy's succinct analyses and occasionally provided historical commentaries. For example, in describing one of the city plans by Jean (John) Rocque ('Plan de la Ville de Lyon, réduit sur le Plan de 4 feuilles, levé par le Sieur C. Seaucourt; verifie & orienté par le Pere Grégroire

de Lion... publié en 1746') he added: 'This plan is engraved with a perfect beauty which renders it even more precious, since the plate perished along with most of the plates of the other in a fire at his place in the month of November 1750'. In a rare moment,

Overleaf

Fig. 2 Å highly decorative regional world map, in two sheets, in the *Hommansche* style: Latin text; heavily engraved ornate title cartouche and other ornamentation; and full colour. Homann Heirs, 'Dvcatus Electoratq et Principatq Dvcvm Saxonia' (1731), after a map compiled by the brothers Philipp Heinrich Zollman (before 1690–1748) and Friedrich Zollmann (1690–1792). The cartouche displays Augustus II of Saxony (1670–1733) receiving the crown of Poland, among other laudatory allegories; the marginalia are the coats of arms of the different districts of Saxony, which are distinguished by the map's colouring. This is one of many maps brought together by an eighteenth-century collector and bound into a composite atlas. Courtesy of the Osher Map Library and Smith Center for Cartographic Education, University of Southern Maine (Smith Collection); oshermaps.org/map/14002.0118c.

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Julien also vouches for the accuracy of a plan. Of the four-sheet map of the burgravate of Nuremberg and the margravate of Anspach by Johann Georg Vetter (1681–1745), he comments: 'This map, which contains even the smallest details, is of an admirable exactitude and can serve as a guide to the traveler. I have journeyed all around a greater part of this region and I have not noticed a single fault on it'. ⁶

Such guides as Gregorii, Lenglet du Fresnoy and Julien allowed map collectors of the eighteenth century to create collections that did not require great space or great fortunes, though collections of prestige and status continued to be built.

Map collecting in the Enlightenment

The development of map collections, large and small, may be tracked in Volume Four's two large composite entries on MAP TRADE and MAP COLLECTING, both considered in their various national contexts. MAP COLLECTING in particular reveals consumer desires, the quality and quantity of collections, the manner in which collections were organised and displayed and their integration with the choices offered by the marketplace for different kinds of maps.

The desiderata that emerge were beauty of execution in design and engraving, concern for size (in terms of number of sheets, a surrogate for the scale or resolution of the map), originality or unusual features and renown of author and engraver. These demands were met by the rapidly developing map market. The abundance of cartographic material was generated by a number of factors. General growth of the European economy after the end of the Thirty Years' War (1618-48) had increased both the buying power of the collector and the number of skilled copperplate engravers who expanded the supply of copperplate prints. These in turn sustained an increase in the number of news journals and periodicals that incorporated maps or discussed them in their pages. Peace encouraged travel for business and for pleasure. Maps placed the goals of travel - natural wonders, human events, cultural artifacts – in a spatial context.

'An obsession with collecting is as old as human curiosity.' Map collecting continued a tradition of acquisition of visual knowledge whose roots extend into the Middle Ages and flowered by the time of the European Renaissance and the introduction of printing in Europe. Maps and collections enjoyed the shared function of inventory and encyclopedia. They aided memory and accommodated new information about

the world into old ideas. A personal library could be filled with illuminated manuscripts and incunabula, illustrated books beautifully bound, as well as folios of copperplate engraved prints; such a collection satisfied the owner's curiosity and also served as a status symbol of his or her erudition and culture. Map collecting developed hand in hand with the sixteenthand seventeenth-century cabinets de curiosités or Wunderkammern, those organised collections of antiquities, works of art, natural objects and human artifacts that presaged the modern museum.

The collectors

As in the Renaissance, map collecting in the eighteenth century was practised across many social classes from royalty and nobility, to statesmen and scholars, to the educated commoner. Royal palaces and libraries and administrative institutions were the natural home for many map collections, given their owners' responsibilities for governance. A well-known and patently visible collection is that of King George III of Great Britain, whose royal library today fills the architectural glass core of the British Library in London. George's Geographical Collection, which includes maps, is split between Windsor Castle and the British Library, where his Topographical Collection contains around 50,000 items: manuscript and printed maps, topographical drawings, watercolours, prints and local printed ephemera. George III's personal map library exemplifies the collections of European monarchs but also the private interests of a king who loved maps (Fig. 3).

At the top level of government, administrators of state both collected maps, domestic and foreign, and initiated large-scale mapping projects as efficient tools of governance. Privately, large landowners collected maps, perhaps more focused on their own region or personal land holdings as a practical matter, but also built personal libraries or special rooms as a place to display maps. The wealthy merchant classes and educated elites similarly indulged their curiosity through the building of libraries which included the collection of maps.

The private collections that are the most well known to us are those whose prodigious size subjected them to serious cataloguing. They often became attractive gifts or ripe for sale to public institutions, such as a government agency or a public library. The number of maps included in these large collections can be quite staggering. The Danish statesman Count Otto Thott (1703–1785) accumulated 200,000 maps. When Thott's



Fig. 3 Engraving of King George III's specially constructed map library at Queen's House (now Buckingham Palace). From Frederick Augusta Barnard, *Bibliothecæ Regiæ Catalogus*, 5 vols. (London, 1820–29), 1:i.

collection was sold at auction, in 1785–92, the catalogue comprised no fewer than eleven volumes and listed a wide range of works, including many early editions of atlases by Ortelius, Münster and Mercator. The auction dispersed the collection to buyers like the king of Denmark, the university in Copenhagen and to the Kongelige Bibliotek (Royal Library). Thott's outsize holdings makes the geographer d'Anville's collection of around 10,000 maps seem downright puny, yet the latter's value lay in the fact that it was d'Anville's working collection, filled with printed and manuscript material, including items of great rarity and importance to royal administrations. France's Louis XVI authorized its purchase from the geographer while he was alive, offering a safe and secure refuge for the geographer's lifetime accumulation; it is now housed in the Bibliothèque nationale de France.

Other considerable collections, although all smaller than Thott's, are described in each of Volume Four's entries on MAP COLLECTING in specific regions. A good example of how one collector organised his collection, discussed in MAP COLLECTING IN SWITZERLAND, may be found in the detailed set of instructions about how to acquire, organise and catalogue a map collection prepared by the eminent Swiss collector, Johann Friedrich von Ryhiner (1732–1803). Donated to the Stadtbibliothek of Bern in 1867, Ryhiner's collection of 16,500 maps, plans and views has now been digitised and can be consulted online.

What constituted a collection?

A closer look at the map collections of George III, Ryhiner and others reveals their broad scope. They comprised everything from globes and published atlases to portfolios of plans and topographical views, a rich variety that allowed the collector to study place in the broadest sense. Many collections also included books, pamphlets and broadsides, material to accompany and enrich the understanding of the maps. There was little distinction between 'old' and 'new': collections embraced material from all periods, with early printed editions of Ptolemy, Ortelius, Mercator and Münster next to composite atlases of maps based on more recent surveys or compilations. A strictly antiquarian desire to acquire early maps is only discernable at the end of the eighteenth century.

As varied as the collections were the methods of storage. Map collections established in the seventeenth or early eighteenth century tended to keep single or multiple sheet maps, plans and views bound, either permanently or loosely, in composite 'atlases': gatherings of particular geographic areas. These could stand alongside published atlases, such as Ortelius's Theatrum or Joan Blaeu's Atlas maior. More novel was the approach of the Dutch lawyer and collector, Laurens van der Hem, who re-organised and expanded his copy of the Atlas maior by interspersing the published Blaeu material with other maps and views, many of them manuscript, and rebinding the enlarged atlas in 46 volumes. As the century progressed, a movement developed towards keeping maps in portfolios or specialised cabinets rooms dedicated to the study of maps equipped with

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large tables – as implemented by Augustus II of Saxony (pictured with a map in Figure 2). The same attributes of desirable maps applied to housing the collection: a retreat from the luxurious bindings and impressive display of the seventeenth century to more efficient and easily accessed portfolios, with a strong emphasis on cataloguing, classification and systematic order, as described in Ryhiner's treatise on organising a collection. The eighteenth–century's intellectual emphasis on classification and comprehensiveness led to an encyclopedic approach to map collecting.

Yet what of the small collector, the *amateur* who acquired twenty or thirty maps of some particular place or simply maps that appealed to his or her taste? Swedish research shows that even such a small body of material might be considered a collection and that probate inventories and auction records tell us much about the more modest yet enthusiastic consumer of maps. Such a person also appears frequently on subscription lists to atlases, especially in Great Britain or France, where that sales device was most popular and offers a productive avenue for more research.

The modest yet avid collector was vividly portrayed in the character of Uncle Toby in Laurence Sterne's novel, *The Life and Opinions of Tristram Shandy, Gentleman* (1759–67). Uncle Toby suffered grievously from a wound received at the siege of Namur during the Nine Years' War (1688–97). He found relief from his pain by acquiring a fortification plan of Namur and deploying a pin at the exact spot where his wound was received (Fig. 4). So positive was the effect of the map on Uncle Toby's constitution that he determined to procure plans of all the fortified towns in Italy and Flanders that were involved with this war. Sterne's description of Toby's response to studying a map perhaps captures best the map *amateur's* enthusiasm:

But the desire of knowledge, like the thirst of riches, increases ever with the acquisition of it. The more my uncle Toby pored over his map, the more he took a liking to it:—by the same process and electrical assimilation,...thro' which...the souls of connoisseurs themselves, by long friction and incumbition, have the happiness, at length to get all be-virtu'd—bepictur'd—be-butterflied, and be-fiddled. 8

What Volume Four offers a map collector

As 'be-virtu'd' map collectors did not hesitate to acquire all kinds of graphic expressions of place in their collections, large and small, Volume Four offers an



Fig. 4 Frontispiece to the third edition of volume 1 (1760) of Laurence Sterne, *The Life and Opinions of Tristram Shandy, Gentleman*, 9 vols. (London: R. and J. Dodsley, 1759–67). Dr Slop dozes while Colonel Slim explains the siege of Namur, the plan for which is prominently displayed on the wall. It was the centrepiece in Uncle Toby's collection of plans of fortified towns in the southern Netherlands and northern Italy. Copper engraving, 14.8 × 9 cm. Courtesy of the William L. Clements Library, University of Michigan, Ann Arbor (C2 1760 St).

encyclopedia that describes the kinds of mapmaking that occurred in the long eighteenth century and the variety of products available for the 'be-butterflied' eighteenth-century map collector. In doing so, its fully-indexed one million words, spread across some two thousand pages, invite the modern collector to journey widely through Europe and her overseas territories and interests.

Even such a large volume is too small to exhaustively detail every aspect of mapping in the Enlightenment. (We have just realised, in writing this essay, for example,

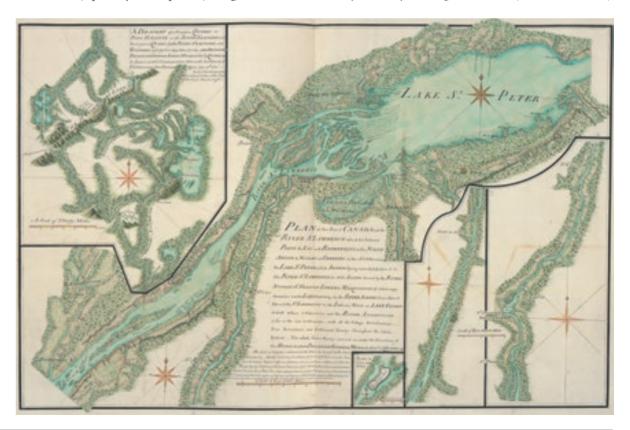
that Volume Four makes no mention of Johann Georg Vetter whose map of Nuremberg and Anspach was so well received by Roch Joseph Julien!) Rather, we sought to address exemplars that together permit discussion of as many different aspects of mapping as possible. We also consciously sought to cover the many minor endeavours of Enlightenment mapping and not to focus solely on the names and surveys that are already well known to map historians, because 'small' maps are as important as 'great' maps in understanding the history of cartography and are of great significance to the modern map collector. Yet we could not let the major achievements of Enlightenment mapping be swamped.

In short, we needed to design and then adhere to a coherent *structure* for the volume. That structure came from the consideration of the different kinds of contexts into which we might situate early maps. The most important of these were: the *representational contexts* within which maps were produced and consumed; the *methodological and technological contexts* within which maps were physically produced (the science, craft and art of cartography); and the *political contexts* within which maps were commissioned and collected, both civil and commercial (especially the map trade) and governmental

(military and administrative). The first thing that Volume Four provides, therefore, is a series of contextual slices through the complexity of Enlightenment cartography. Significantly, the endpapers to the volume list all the contexts and the entries appropriate to each, to guide readers through each slice so as to simplify and comprehend mapping in the Enlightenment. 9

The several representational contexts are the core of the volume, one for each of the different ways in which people made and used maps for various ends. We learn that there is not just one kind of map, but many, each a distinct product of different spatial conceptions and social needs. Indeed, we treat the world and regional maps that often function as the 'default map' for map historians and map collectors as a particular kind of mapping, Geographical Mapping (Figs. 1 & 2). Just as important are topographical (Fig. 5), property

Fig. 5 One of the more detailed maps – 'Plan of that Part of Canada and the River St. Lawrence which Lies between Point du Lac and Repentigny on the North Shore & Nicolet and Varrenes on the South', surveyed in 1761 by John Montresor – from the Murray Map of Canada. The insert shows Montresor's route in July 1761 from the Chaudière to the Kennebec rivers, a route that would be followed by Benedict Arnold during the American Revolution. Manuscript, 49 × 71.3 cm. Courtesy of the William L. Clements Library, University of Michigan, Ann Arbor (Atl 1761 Mu sheet 16).



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(Fig. 6), boundary, urban, celestial, marine (Fig. 7), thematic and geodetic mapping. Volume Four provides overviews of each and more detailed studies of how each were manifested in each *regional context*. The volume is quite granular in its regional distinctions, covering each of the major centres of mapping activity – France, Britain, the German States, the Austrian Monarchy and Russia – while also giving equal attention to the European periphery in Scandinavia, the Iberian and Italian peninsulas, the Ottoman east and in Europe's burgeoning overseas colonies. By grouping together entries on each representational context, Volume Four allows readers to identify commonalities and differences in similar practices undertaken across European culture.

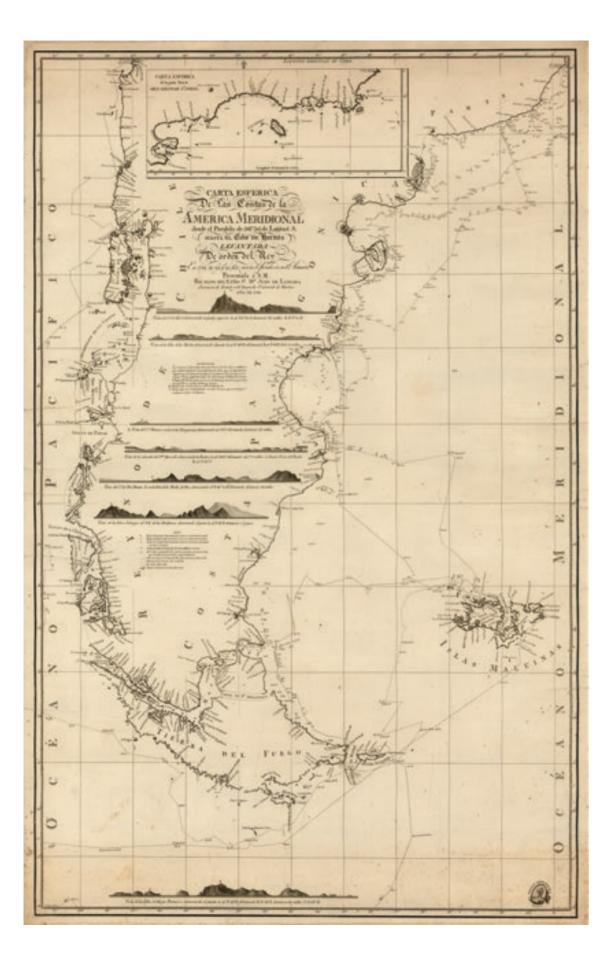
The methodological and technological contexts embrace a wide variety of subjects that will interest map collectors. The subcontext of art and craft includes not only entries pertaining to aesthetics, which we have already mentioned, but also a suite of entries about the contemporary methods for the REPRODUCTION OF MAPS, both by hand and in print, methods that in part give rise to the specific look of eighteenth-century maps. The entries within the subcontext of science and technology in large part address issues that have been made famous in recent decades by a number of popular works of the history science, starting with Dava Sobel's account of the famed chronometer completed in 1761 by John Harrison (1693-1773). 11 Although excellent in and of themselves, these popular works have tended to focus narrowly only on certain aspects of cartographic science, so our entries give fuller accounts of why and how Enlightenment scholars determined the size and shape of the earth itself (GEODESY and GEODETIC SURVEYING), and how they developed techniques to determine LONGITUDE AND LATITUDE on land and at sea. The entries also unravel the many confusions surrounding the idea of the prime or zero MERIDIAN. Although the treatment of each topic in every entry in the volume is necessarily brief, the entries all have bibliographies to permit readers to follow up the issues in greater detail.

Political contexts encompass the work by government administrators and bureaucracies in commissioning and using maps of various kinds in their official work. The obvious subjects here are administrative (civil) and military mapping (Fig. 5). Both activities surged in

importance over the course of the eighteenth century, although not to the point where so many bureaucrats and generals wanted maps that it became necessary to print them. Rather, such maps were uniformly handdrawn in the eighteenth century, sometimes in only one or two copies; the thousands of sheets of the great Austrian military survey, the JOSEPHINISCHE LANDESAUFNAHME, were kept in only two neat sets, one for the emperor, the other for the general staff. For the military, the late seventeenth-century shift away from siege warfare (commemorated in Figure 4) and towards large, highly mobile armies and pitched, open-field battles led to the formation of staff structures who sought detailed TOPOGRAPHICAL SURVEYS of the different terrain over which their units would have to travel and fight. By the end of the century, various kinds of maps had also become part of daily administrative life in many European states. It was not always possible to tell administrative and military maps apart. For example, was the map in Figure 5 military or civil? It was made during the Seven Years' War (1756–63) by British military engineer and topographer, John Montresor (1736-1799), who followed the same methods developed by military engineers on the continent for delineating potential theatres of war. And it was commissioned by a general, James Murray (1721-1794), but in his capacity as the new military governor of the annexed province of Quebec. Murray commissioned a detailed survey, yes, but also a census. The resultant 'Murray Map' is really an atlas of four large maps at a medium scale and over forty detailed maps of specific areas, such as that in Figure 5. Seven copies of the entire work were prepared, though only five survive; this copy is probably that presented to General Thomas Gage (1721-1787), commander-inchief of British forces in North America (1763-75).

Paralleling the formation of European states was the development of the 'public sphere'. This was the sociable realm in which the middling sort came together in new spaces, such as London coffee houses, Parisian salons and Dutch freemason lodges, and more especially in print, to claim a say in creating policy, whether about aesthetics (above), religion, economics, war and (yes) mapping. To participate in public discourse and debate current events required one to be knowledgeable and for that one needed to be literate in both the methods and facts of

Fig. 6 'A map of the farm called Arnolds in the Parishes of Stapelfore Abby and Lamboun in the County of Essex....' (c.1790). An anonymous sampler that also captures the common attributes of the English estate plan: individual fields are named and their precise acreages specified. Embroidered woollen canvas with coloured silks and chenille thread, 64 × 54 cm. Courtesy of the Victoria and Albert Museum, London (T.65-1954).



geography. As the poet and publisher Robert Dodsley, himself a humble-born autodidact, opined in 1748, in his compendium of 'polite learning':

The necessity of some Acquaintance with Geography and Astronomy will not be disputed. If the pupil is born to the Ease of a large Fortune, no Part of Learning is more necessary to him, than the Knowledge of the Situation of Nations, on which [a large Fortune's] Interests generally depend; if he is dedicated to any of the Learned Professions, it is scarcely possible that he will not be obliged to apply himself in some Part of his Life to these Studies, as no other Branch of Literature can be fully comprehended without them; if he is designed for the Arts of Commerce, or Agriculture, some general Acquaintance with these Sciences will be found extremely useful to him; in a word, no Studies afford more extensive, more wonderful, or more pleasing Scenes, and therefore there can be no Ideas impressed upon the Soul, which can more conduce to its future Entertainment. 12

The public sphere was supplied its useful information by the marketplace for print: maps made to inform public discourse ranged from the ATLAS and WALL MAPS (Fig. 1), to geographical textbooks and treatises on history, politics and religion, to maps in the new monthly magazines and newspapers. Together, these many maps constitute the majority of collectible maps from the Enlightenment: bought as having long-lasting value, they were generally preserved by their owners — to form those myriad, small and unsung collections otherwise obscured by those of Thottian proportions — and so have been able to descend to the present-day marketplace for print.

As a rule of thumb, the kinds of maps that were printed in the long eighteenth century were those that contributed to the knowledge infrastructure of public discourse. This especially was the case with world and regional maps (Figs. 1 & 2). Other such contexts that were relevant to public discourse included URBAN MAPPING and CELESTIAL MAPPING as well as the still fledgling practice of THEMATIC MAPPING. Maps that showed the distribution of phenomena such as magnetism, language, minerals, or body types, did not fit contemporary definitions of provincial and

regional maps; Eberhard David Hauber instead called them *curiose Vorstellungen* ('curious representations'). ¹³

Maps relevant only to a limited number of private users remained in manuscript. In addition to official and military works, like the 'Murray Map of Canada' (Fig. 5), such maps include PROPERTY MAPS, that is, maps of entire estates, taxable districts and individual land holdings (Fig. 6). Designed for landowners, lawyers and tax officials, these works remain preserved in personal, institutional, local and legal archives. The particular plan reproduced in Figure 6 is a variant of the usual ink-and-watercolour-on-paper form of such works: it is a sampler, in which an anonymous daughter has copied a plan of an English farm to display her skills in embroidery. This work epitomises how, when property plans do enter the modern marketplace, they are sold today as much to collectors of folk and juvenile art, as to map collectors.

Inevitably, the rule of thumb is not perfect. MARINE CHARTING entailed some manuscript production even in the eighteenth century, and the printing of charts was intended both for actual mariners as working documents and for landlubbers interested in marine trade and naval affairs. The chart reproduced as Figure 7 was one of the former, one of the products of the expedition by Alejandro Malaspina (1789-94), in part to chart the coastlines of Spain's global empire with the latest techniques and to the newest standards. Those standards explain the chart's construction on Mercator's projection. As several entries in Volume Four make clear, most early modern charts were actually not made on that projection because it was too difficult to use; but now, equipped with chronometers and precise astronomical tables, Malaspina and his hydrographers could determine longitudes at sea and so made 'spherical charts' as opposed to the older form of unprojected 'plane' charts.

The broad scope of Volume Four is clear from this account of its content. Yet what will immediately engage and delight the 'be-pictur'd' *amateur* are the 954 illustrations in full colour. They offer a mix of printed and manuscript images exemplifying both the Art of maps and the Science of mapmaking, something for every collector to respond to and want to know more about. We hope this reference volume with a long shelf life will find a home in every map collector's library.

Fig. 7 'Carta esferica de las costas de la America meridional' ([Madrid], 1798). Compiled from hydrographic surveys during the Malaspina expedition, the chart was constructed on Mercator's projection (carta esferica, spherical chart). Copper engraving, c.98 × 62 cm. Courtesy of Barry Lawrence Ruderman Antique Maps, La Jolla, www.raremaps.com.

Notes

1 Matthew H. Edney and Mary Sponberg Pedley, Cartography in the European Enlightenment, vol. 4 of The History of Cartography, Chicago: University of Chicago Press, 2019. ISBN: 978-0-226-18475-3.

2 Jean Baptiste Bourguignon d'Anville, Considerations générales sur l'étude et les connoissances que demande la composition des ouvrages de géographie, Paris, 1777, pp. 66-68.

3 Denis Diderot, 'Art', Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers, Paris, 1751, 1:713–17.

4 Both quoted by Jean-Marc Besse and Nicolas Verdier, 'Art and Design of Maps', in *Cartography in the European Enlightenment*, pp. 117–18.
5 Nicolas Lenglet du Fresnoy, 'Catalogue', in *Méthode pour étudier la*

géographie, Paris, 1742, p. 21, emphasis added.

6 Roch Joseph Julien, Nouveau catalogue de cartes géographiques et topographiques, Paris, 1763, pp. 82 and 90, respectively. Author's translation. 7 George Tolias, 'Maps in Renaissance Libraries and Collections', in Cartography in the European Renaissance, edited by David Woodward, vol. 3 of The History of Cartography, Chicago: University of Chicago Press, 2007, p. 648.

8 Laurence Sterne, Life and Opinions of Tristram Shandy, Gentleman, London: R. and J. Dodsley, 1760, 2:19–20.

9 For more information, see our introduction to Volume Four, and our essay, 'Writing Enlightenment's Cartography', forthcoming in *The Cartographic Journal* in February 2020.

10 See Matthew H. Edney, Cartography: The Ideal and Its History, Chicago: University of Chicago Press, 2019, pp. 26–49.

11 Dava Sobel, Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time, New York: Walker & Co., 1995.

12 Robert Dodsley, *The Preceptor: Containing a General Course of Education, Wherein the First Principles of Polite Learning are Laid Down*, London: R. and J. Dodsley, 1748, pp. xix–xx.

13 Eberhard David Hauber, Versuch einer umständlichen Historie der Land-Charten: Sowohl von denen Land-Charten insgemein, Ulm: Bartholomäi, 1724, p. 65.

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