

25 • Maps in Renaissance Libraries and Collections

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The aim of this chapter is to highlight some apparently peripheral yet widespread scholarly uses of maps during the Renaissance—uses associated with map collecting, display, and study. The chapter examines the role of maps as visual memory aids in the light of the available evidence; it then traces the presence and arrangement of maps in Renaissance libraries and collections; and finally, it examines the symbolic functions and learned uses of maps within early modern humanistic culture.

MAPS AS MEMORY AIDS

Although the Renaissance has been described as “the age of manuals,” a period “inexhaustible in its search for normative principles of general and perennial value, which would then be reduced into commodious didactic schemes,” and although it has indeed bequeathed to us a great many books describing crafts and techniques and explaining the peculiarities, methodology, and usefulness of each one, there is not one surviving work on the art of maps from earlier than the middle of the sixteenth century, with the exception of manuals of surveying or navigation.¹ The silence of the sources may be due to the wide typological variety of maps, the breadth of their makers’ interests and motives, and the diversity of their uses. Nevertheless, this diversity suggests that mapping was an activity open to representatives of different social, educational, and professional environments. Renaissance cartography is an area that does not seem to be subject to any of the usual demarcations, and its products seem to have been commonly accepted as useful devices for memorizing data recorded on space.

An interesting early testimony to the common acceptance of the mnemonic properties of maps comes from Nicolaus Cusanus, who used mapmaking as a metaphor to illustrate the cognitive process in a 1464 “parable” concerning the acquisition of knowledge. The cosmographer stands in the middle of a walled city, where he gathers and records all the data brought to him by messengers entering the city through five gates representing the five senses. Then he composes “a description of the entire perceptible world represented in his own city,” and finally

“he compiles it [the description] into a well-ordered and proportionally measured map lest it be lost.”²

The allegory broadly agrees with Strabo’s view of mapmaking as a process of mnemonic reconstruction.³ However, the fact that Cusanus used the map as a metaphor to help his readers understand both the process of recon-

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Abbreviations used in this chapter include: *Ortelius* for Robert Karrow et al., *Abraham Ortelius (1527–1598): Cartographe et humaniste* (Turnhout: Brepols, 1998); *Merchants for* Pamela H. Smith and Paula Findlen, eds., *Merchants & Marvels: Commerce, Science, and Art in Early Modern Europe* (New York: Routledge, 2002); *Monarchs, Ministers, and Maps* for David Buisseret, ed., *Monarchs, Ministers, and Maps: The Emergence of Cartography as a Tool of Government in Early Modern Europe* (Chicago: University of Chicago Press, 1992); *Origins of Museums* for O. R. Impey and Arthur MacGregor, eds., *The Origins of Museums: The Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe* (Oxford: Clarendon, 1985); and *Tous les savoirs* for Roland Schaer, ed., *Tous les savoirs du monde: Encyclopédies et bibliothèques, de Sumer au XXI^e siècle* (Paris: Bibliothèque Nationale de France / Flammarion, 1996).

1. Luigi Firpo, *Lo stato ideale della controriforma: Ludovico Agostini* (Bari: Laterza, 1957), quotation on 245. Harley noted this absence when he wrote: “The new cartography of the Renaissance lagged behind the older art of painting where, although there was a widely understood language of artistic motifs, such was the multiplicity of meaning attaching to individual symbols and personifications that dictionaries such as Cesare Ripa’s *Iconologia* (1593) were regarded as necessary to unravel the meanings of many kinds of visual designs”; see J. B. Harley, “Meaning and Ambiguity in Tudor Cartography,” in *English Map-Making, 1500–1650: Historical Essays*, ed. Sarah Tyacke (London: British Library, 1983), 22–45, esp. 35–36.

2. Nicolaus Cusanus, *Compendium*, ed. Bruno Decker and Karl Bormann, vol. 11/3 of *Nicolai de Cusa Opera omnia* (Hamburg: Felix Meiner, 1964), 3 and 17–20; translation by Victoria Morse, the History of Cartography Project, hand-printed broadsheet no. 7 (1999).

3. Strabo, *Géographie*, 9 vols., ed. and trans. Germaine Aujac, Raoul Baladié, and François Lasserre (Paris: Les Belles Lettres, 1966–89), vol. 1, pt. 2, p. 92. See also Christian Jacob, “Géographie et culture en

structuring knowledge and the best way to preserve and transmit it confirms the common acceptance of the functions of a map. Cusanus's allegory also testifies to the supremacy of sight over the other senses. The means of imprinting and communicating knowledge is not verbal—not a statement transmitted in writing or speech and preserved by being learned by heart—but visual, a new kind of visual representation of interrelated figures. Maps that interweave disparate data, places, events, and phenomena hitherto kept separate explain patterns and interrelations that are not otherwise visible.⁴

In 1570, John Dee, in his preface to the English translation of Euclid's *Elements*, summarized the typical Renaissance scholar's view of the nature and uses of maps as follows:

Geographie teacheth wayes, by which, in su[n]dry formes, (as *Sphærike*, *Plaine* or other), the Situation of Cities, Townes, Villages, Fortes, Castells, Mountaines, Woods, Hauens, Riuers, Crekes, & such other things, vpo[n] the outface of the earthly Globe (either in the whole, or in some principall me[m]ber and portion therof co[n]tayned) may be described and designed, in comensurations Analogicall to Nature and veritie: and most aptly to our vew, may be represented. Of this Arte how great pleasure, and how manifolde commodities do come vnto vs, daily and houely: of most men, is perce[iv]ed. While, some, to beautifie their Halls, Parlors, Chambers, Galleries, Studies, or Libraries with: other some, for thinges past, as battels fought, earthquakes, heauenly fyringes, & such occurentes, in histories mentioned: therby liuely, as it were, to vewe the place, the region adioyning, the distance from vs: and such other circumstances. Some other, presently to vewe the large dominion of the Turke: the wide Empire of the Moschouite: and the litle morsell of ground, where Christendome (by profession) is certainly knowen. Litle, I say, in respect of the rest. &c. Some, either for their owne [j]orneyes directing into farre landes: or to vnderstand of other mens trauailes. To conclude, some, for one purpose: and some, for another, liketh, loueth, getteth, and vseth, Mappes, Chartes, & Geographically Globes. Of whose vse, to speake sufficiently, would require a booke peculiar.⁵

Although Dee recognized from the outset that maps summarize and visualize geographical knowledge in an analogical way, most of the functions and uses of maps that he mentions are not related to practical purposes. It is indeed remarkable that Dee, mathematician and geographer to the crown, who among other things was an author of astronomy and navigation textbooks, an adviser on English colonial expansion, and a planner of expeditions to discover new maritime trade routes, did not recognize the potential usefulness of maps to a country's rulers.⁶ According to Dee, in the late sixteenth century maps were regarded chiefly as instruments of aesthetic pleasure

and instruction. First he mentions the aesthetic function of maps for the adornment of galleries, studies, libraries, and other rooms.⁷ Then he acknowledges their value for antiquarian reference: those interested in the past could locate the sites of important events, such as battles, earthquakes, and meteorological phenomena. Next is the moral and political use of maps. Relaying the views of Cardinal Gabriele Paleotti,⁸ or perhaps drawing directly on Plato (who recorded that Socrates used a map to show Alcibiades how comparatively small was the estate of which he was so proud), Dee asserts that his contemporaries used maps to compare the vast empires of the Russians and the Ottoman Turks with the small countries of western Europe. This statement also implies potential political uses to some extent, but Dee makes no mention of political uses in practice. Last, almost in passing, he refers to maps in connection with traveling, but here the emphasis is shared equally between practical and cognitive uses. He says that maps were used both for planning itineraries and for a fuller understanding of past journeys of which published accounts were available.

To the educated elites of the Renaissance, maps were apparently a source of both aesthetic enjoyment and knowledge. This attitude toward cartographic material was not new. As Gautier Dalché has demonstrated, maps had been studied and displayed since the Carolingian Renaissance.⁹ This practice proliferated and acquired new

grèce ancienne: Essai de lecture de la description de la terre habitée de Denys d'Alexandrie" (Ph.D. diss., Ecole des Hautes Études en Sciences Sociales, Paris, 1987), 610. On the "discovery" of Strabo by Western humanists, see E. B. Fryde, *Humanism and Renaissance Historiography* (London: Hambledon, 1983), 72–76.

4. See David Turnbull, "Cartography and Science in Early Modern Europe: Mapping the Construction of Knowledge Spaces," *Imago Mundi* 48 (1996): 5–24, esp. 7. On the visual and mnemonic function of geography and the influence of Ptolemy's *Geography*, see Lucia Nuti, *Ritratti di città: Visione e memoria tra Medioevo e Settecento* (Venice: Marsilio, 1996), 23–29; on the mnemonic functions of ancient Greek cartography, see Christian Jacob, "Inscrivere la terra abitata su una tavoletta: Riflessioni sulla funzione delle carte geografiche nell'antica Grecia," in *Sapere e scrittura in Grecia*, ed. Marcel Detienne (Rome: Laterza, 1989), 151–78; and on the mnemonic function of the learned Italian cartography during the fourteenth century, see Nathalie Bouloux, *Culture et savoirs géographiques en Italie au XIV^e siècle* (Turnhout: Brepols, 2002), 62–67 and 101–4.

5. John Dee, *The Mathematicall Praeface to the Elements of Geometrie of Euclid of Megara (1570)*, intro. Allen G. Debus (New York: Science History Publications, 1975), Aiiiii.

6. On Dee, see the standard work by E. G. R. Taylor, *Tudor Geography, 1485–1583* (London: Methuen, 1930), esp. 75–139.

7. On the fashion of displaying printed images, see Roger Chartier, *The Cultural Uses of Print in Early Modern France*, trans. Lydia G. Cochrane (Princeton: Princeton University Press, 1987).

8. Paleotti is discussed later in this chapter.

9. Hugh of Saint Victor, *La "Descriptio mappe mundi" de Hugues de Saint-Victor*, ed. Patrick Gautier Dalché (Paris: Études Augustiniennes, 1988), 91–95.

significance from the early fifteenth century onward: at the dawn of the Renaissance, antiquarian scholars were studying and displaying maps together with antiquities and other collectanea.¹⁰ The trend to display maps seems to have been an established vogue at the beginning of the sixteenth century. As early as 1510, Paolo Cortesi, describing the ideal residence of a cardinal, said that it should be adorned with maps and pictures of the curiosities and marvels of nature. Such images are sources of intense “erudite pleasure” while simultaneously sharpening the intellect and imprinting knowledge on the mind.¹¹

A map is a specialized form of visual language and a tool for analogical thinking. As Harley has remarked, a map serves, among other things, as a mnemonic tool, that is to say, a memory bank for data relating to space. This function of the map was particularly important in societies that had no printing.¹² However, in the sixteenth century, the mass production of maps by means of printing appears, at least early on, to have disseminated precisely this mnemonic function of maps and, at the same time, to have broadened its fields of application.¹³

The available evidence shows how the educated elites of the Renaissance era regarded maps. Early modern cartography seems to have been related both to previous practices and to certain basic thinking processes of the dawning modernism. The phenomena that concern us here are connected mainly with the systematization and intensification of cultural processes and partly with technological developments made at the time, notably the invention of printing. The broadening and diversification of map uses were related to Renaissance encyclopedism, the establishment of a visual culture, and the consequent reinforcement of the old mnemonic function of images. Maps seem to have been integrated into the vast Renaissance program of reconstructing knowledge and thus to have played a role in structuring the encyclopedism and polymathy so characteristic of Renaissance curiosity. Furthermore, the increase in the diffusion of maps and their uses was related to the growth of antiquarian interest in the collection and empirical examination of data and to intensive investigations into historical geography and topography.

The antiquarian approach gave sixteenth-century encyclopedism a distinctive tone. The antiquarians inspired and encouraged the taste for collecting ancient coins, inscriptions and artifacts, unusual natural objects, and other curiosities—a taste that sprang from their libraries and studios and snowballed through Europe, developing into a social phenomenon. Antiquarians and their methodology linked geography with history and fostered the study of local or regional history and monumental topography, branched out into the study of sacred topography and pious history, and used graphics (representations of monuments, coins, and inscriptions, and also maps, plans, and views) as tools of their trade.¹⁴

As geographical horizons widened, and with them the horizons of knowledge, all sorts of new facts needed to be incorporated into the cognitive system. Newly discovered countries, landscapes, flora and fauna, and inventions all invited a comprehensive reappraisal of the old heritage.¹⁵ A new, insatiable encyclopedism was dawning, scientific and antiquarian in its aims, calling for methodical and empirical reexamination of data.

The flood of new facts and the rapid spread of old and new information through the printed word sparked a crisis in the world of knowledge. The old systems of learning could not cope.¹⁶ The sixteenth century responded to the problem posed by this unprecedented glut of information by turning to the accumulation of data on a vast scale, the renewal of mnemonic systems, and new methods of classifying knowledge.¹⁷ In the great trading cities of the western Mediterranean, Germany, and the Low Countries, a vast network of collections

10. For example, the case of Niccolò Niccoli, which is mentioned later in this chapter.

11. Paolo Cortesi, *De Cardinalatu* (Castro Cortesio, 1510), fol. 54r–v.

12. See J. B. Harley, “The Map and the Development of the History of Cartography,” in *HC* 1:1–42, esp. 1.

13. On the function of printed maps as data banks, see Christian Jacob, *L’empire des cartes: Approche théorique de la cartographie à travers l’histoire* (Paris: Albin Michel, 1992), 82–94, esp. 89.

14. Arnaldo Momigliano, *The Classical Foundations of Modern Historiography*, trans. Isabelle Rozenbaum (Berkeley: University of California Press, 1990), 80–108; Zur Shalev, “Sacred Geography, Antiquarianism, and Visual Erudition: Benito Arias Montano and the Maps in the Antwerp Polyglot Bible,” *Imago Mundi* 55 (2003): 56–80; and Christopher S. Wood, “Notation of Visual Information in the Earliest Archaeological Scholarship,” *Word & Image* 17 (2001): 94–118.

15. On the renewal of knowledge in the sixteenth century, see Anthony Grafton, *New Worlds, Ancient Texts: The Power of Tradition and the Shock of Discovery* (Cambridge: Belknap Press of Harvard University Press, 1992). On the impact of the newly discovered facts and the reaction of Renaissance society, see Lisa Jardine, *Worldly Goods: A New History of the Renaissance* (New York: W. W. Norton, 1996). On multidimensional encyclopedic curiosity and its socioeconomic implications, see *Merchants*.

16. See Françoise Waquet, “*Plus ultra*: Inventaire des connaissances et progrès du savoir à l’époque classique,” in *Tous les savoirs*, 170–77.

17. On the visual, local memory of the sixteenth century and its relationship to rhetorical traditions, see Patricia Falguères, *Les chambres des merveilles* (Paris: Bayard, 2003), 67–68. On medieval mnemonic systems, see Mary Carruthers, *The Book of Memory: A Study of Memory in Medieval Culture* (Cambridge: Cambridge University Press, 1990). On the sixteenth-century mnemonic system, see the standard works: Frances Amelia Yates, *The Art of Memory* (Chicago: University of Chicago Press, 1966), and Paolo Rossi, *Logic and the Art of Memory: The Quest for a Universal Language*, trans. Stephen Clucas (Chicago: University of Chicago Press, 2000). See also Lina Bolzoni, *The Gallery of Memory: Literary and Iconographic Models in the Age of the Printing Press*, trans. Jeremy Parzen (Toronto: University of Toronto Press, 2001), in which much new light is shed on the question of the impact of learning by mnemonics in the sixteenth century and which opens up new perspectives on the world of collecting and curiosity.

came into being, amassed first in libraries, studios, and galleries and later in cabinets of curiosities, cosmographic theaters, and *Wunderkammern*, to which the curious came in great numbers from all over Europe to examine objects and tokens of the new curiosity.¹⁸

In theory, maps and collections are both manifestations of the same outlook and have many features in common. The map is an encyclopedia and inventory of the world.¹⁹ World maps and globes in particular, with their pictorial embellishments, become microcosms serving purposes similar to those of cabinets of curiosities. In 1531, Sir Thomas Elyot, in *The Booke Named the Governour* (the English counterpart of Niccolò Machiavelli's *Il principe* and Baldassare Castiglione's *Il libro del cortegiano*), showed the delight of map owners: "What pleasure . . . in one hour to behold those realms, cities, seas, rivers, and mountains, that uneth [scarcely] in an old man's life cannot be journeyed and pursued; what incredible delight is taken in beholding the diversities of people, beasts, fowls, fishes, trees, fruits, and herbs: to know the sundry manners and conditions of people, and the variety of their natures, and that in a warm study or parlour, without peril of the sea or danger of long and painful journeys: I cannot tell what more pleasure should happen to a gentle wit, than to behold in his own house everything that within all the world is contained."²⁰

The curiosity of the early modern period was first and foremost visual. In Venice, Frankfurt, Antwerp, and elsewhere, numerous images were produced and widely diffused through printing. Side by side with the traditional religious, political, professional, and edifying images, geographic prints (maps, views, "local scenes," pictures of towns and villages, flora and fauna, etc.) steadily gained ground.²¹ Urban societies soon grew accustomed to receiving visual information and kept demanding more and more images. It is in this trend that we see signs of an early form of materialism.²² Maps, diagrams, and various visual aids were brought into play to reconstruct a verifiable picture of nature.²³

In 1544, Cardinal Gabriele Paleotti, a central figure in the post-Tridentine Catholic reforms, published an essay on the proper use of images, claiming to detect elements of paganism in these new behavior patterns. The cardinal expressed reservations about the recent deluge of pictorial material, strongly criticizing the emphasis placed on vanity, magic, and violence in portraits, emblems, astrological iconography, and representations of bloody battles and scenes of violence. But not all images roused his strictures, for those that promoted religious devotion, as well as images serving as mnemonic aids to the study of the natural sciences, geography, and technology, earned his trust and approval.²⁴

It is most interesting to see which visual cognitive aids Cardinal Paleotti considered legitimate. Maps were easily

the most numerous visual mnemonic aids (*potendosi con questo mezo conservar meglio nella memoria*). The cardinal accepted celestial as well as terrestrial maps, even though celestial maps were associated with the widespread astrological practices of the day.²⁵

The peculiar confidence in the revelatory and mnemonic character of maps acquired its full significance in the context of Renaissance interest in the art of memory. The association of images with memory is very old. Mnemosyne (Memory) was the mother of the Greek muses, and, as recent studies by Carruthers have shown, medieval intellectuals regarded the memory as a universal machine that thought in images.²⁶ In the fifteenth and sixteenth centuries, this association was reinforced in the context of the Renaissance *ars memoriae*. The widely used and popular mnemonic techniques common to the classical, medieval, and early modern traditions of rhetoric, logic, and magic were intended to improve their users' memories by creating artificial memory systems based on logical associations. As Rossi describes it, the art of memory was "the development of a conceptual mechanism which, once it was set in motion, could 'work' by itself, in a way which

18. The literature on early collections has expanded enormously in recent years, following publication of the standard work edited by Impey and MacGregor, *Origins of Museums*.

19. Christian Jacob, "La carte du monde: De la clôture visuelle à l'expansion des savoirs," *Le Genre Humain* 24–25 (1992): 241–58, esp. 257. See also Maria Luisa Madonna, "La biblioteca: *Theatrum mundi e theatrum sapientiae*," in *L'abbazia benedettina di San Giovanni Evangelista a Parma*, ed. Bruno Adorni (Milan: Silvana, 1979), 177–94.

20. Thomas Elyot, *The Book Named the Governor*, ed. S. E. Lehmberg (London: Dent, 1962), 35, and Peter Barber, "England I: Pageantry, Defense, and Government: Maps at Court to 1550," in *Monarchs, Ministers, and Maps*, 26–56, esp. 31.

21. On illustrated printed works, see Roger Chartier, *Lectures et lecteurs dans la France d'Ancien Régime* (Paris: Éditions du Seuil, 1987), and Christian Jouhaud, "Imprimer l'événement: La Rochelle à Paris," in *Les usages de l'imprimé (XV^e–XIX^e siècle)*, ed. Roger Chartier (Paris: Fayard, 1987), 381–438. For a reassessment of the role of images in the history of civilization, see the standard work by Francis Haskell: *History and Its Images: Art and the Interpretation of the Past* (New Haven: Yale University Press, 1993). See also David Woodward, *Maps as Prints in the Italian Renaissance: Makers, Distributors & Consumers* (London: British Library, 1996).

22. Chandra Mukerji, *From Graven Images: Patterns of Modern Materialism* (New York: Columbia University Press, 1983).

23. See Pamela O. Long, "Objects of Art / Objects of Nature: Visual Representation and the Investigation of Nature," in *Merchants*, 63–82.

24. Gabriele Paleotti, *De imaginibus sacris et profanis* (Ingolstadt: David Sartorius, 1544), in Italian, *Discorso intorno alle imagini sacre et profane* (Bologna, 1582), fols. 170v–71.

25. Yet he rejected anatomical diagrams. This omission may perhaps be explained by his reference to the subjects admitted by public academies (*queste cose, che sono permesse che nelle academie publiche si leggano*).

26. Mary Carruthers, *The Craft of Thought: Meditation, Rhetoric, and the Making of Images, 400–1200* (New York: Cambridge University Press, 1998), and idem, *Book of Memory*.

was relatively independent of the work of the individual, until one arrived at a ‘total knowledge,’ which would enable man to read the great book of the universe.”²⁷

According to a classic Roman textbook of rhetoric, artificial memory relies on the principle of memory images attached to memory places.²⁸ The “images have the task of fixing ideas, words and concepts in the mind.”²⁹ Mental reversion to the memory images and memory places sets off a train of associated thoughts, ideas, and arguments around which the orator constructs his speech. The same textbook states that a memory place is a thing capable of containing in itself any other thing, and a memory image is the representation of those things that we wish to retain in the mind. According to this logic, a map is a memory place, whereas the objects it presents in the form of images or words (towns, mountains, seas, rivers, lakes, forests, etc.) are memory images.³⁰

Many references to maps, the mapmaking process, and cartographic depiction are found in theoretical essays that set out to construct artificial memory systems. In the sixteenth century, Giulio Camillo Delminio and Alessandro Citolini, making use of a commonplace of their time (as Cusanus had done), employed variations on the metaphor of the cosmographic theater (if they did not actually believe in its operational feasibility) to construct systems that would stimulate artificial memory. Citolini offers a characteristic example of the system common to cartography and mnemonics in his *Tipocosmia* (1561). To initiate his readers into the art of memory, he first uses the metaphor of the cabinet of curiosities to present all the data analytically and fragmentarily, then moves on to the metaphor of the illusionist cosmography hall and, finally, to that of the atlas.³¹

The most complete manifestation of the Renaissance universal mnemonic aspirations can be found in the concept of the “theaters of the world,” for which many proposals were put forward in the second half of the sixteenth century.³² These mnemonic theaters, an interesting variation on encyclopedic collections, had ambitious classification systems aimed to include all the facts then known about the heavenly universe, nature, and mankind. The basic system of arrangement was cosmological (based on the four elements) or astrological (following the order and properties of the signs of the zodiac and the climatic zones associated with them). Most of the theaters never got beyond being prospects on paper—the stage of brilliant speculation—but a certain number materialized based on the paradigm of maps, and these give some idea of the scope of the projects.³³ Renaissance faith in the logical structure of knowledge and the omnipotence of numbers—even if inspired by the stars—was widespread and of seminal importance.³⁴

In the latter part of the sixteenth century, printed atlases were given titles derived from the mnemonic theaters and

the all-inclusive collections. Abraham Ortelius’s *Theatrum orbis terrarum* alludes to the encyclopedic collections and manuals of artificial memory, while Gerardus Mercator’s *Atlas* refers to the mythical king of Mauritania, the son of the earth (Ge) and grandson of the sun (Helios), an astrologer and philosopher who climbed to the highest peak in his kingdom to see and understand the world. Mapping and collecting followed parallel methodologies and were understood to be related.

Indeed, mapping and collecting converged in the Renaissance *ars memoriae*. Studying the relationships between Renaissance mnemonic systems and collecting, Bolzoni concludes:

The extraordinary reality of the great collections of the sixteenth century greatly expand the potential of the metaphor and cause it to be taken literally: memory, aided and empowered by art, *becomes* the actual chamber of the treasure, the place where a unique collection has been deposited. . . . The techniques of memory thus move with ease among words, images, and objects, interested as they are in guaranteeing maximum translatability among diverse planes of reality and in activating—and controlling—a protean game of metamorphosis.³⁵

27. Rossi, *Art of Memory*, 5.

28. “Rhetorica ad C. herennium,” an anonymous work once attributed to Cicero. See Harry Caplan, trans., *Ad C. herennium: De ratione dicendi (rhetorica ad herennium)* (Cambridge: Harvard University Press, 1954), and Rossi, *Art of Memory*, 6–11.

29. Rossi, *Art of Memory*, 27.

30. See Jacob, *Empire des cartes*, 233–35.

31. Citolini’s mnemonic system is based on architectural models. The host initiates visitors into all the branches of knowledge by means of a tour through six rooms (a fairly pedantic and boring tour). In the seventh and last room of the building, the visitors see before them a huge sphere, which they enter. Inside, they see the heavens all around them, and in the middle is the earth, on which everything is presented attractively and in good order. Finally, the host takes the visitors to his study and shows them a massive tome in which the whole world is set out, with its rivers, animals, and plants—“the most complete garden that they had ever seen.” See Bolzoni, *Gallery of Memory*, 243, and also Alessandro Citolini, *La tipocosmia* (Venice, 1561), 546–51.

32. See the standard work by Frances Amelia Yates: *Theatre of the World* (Chicago: University of Chicago Press, 1969); see also the recent book by Ann Blair, *The Theater of Nature: Jean Bodin and Renaissance Science* (Princeton: Princeton University Press, 1997).

33. See chapter 32 in this volume and Juergen Schulz, “Maps as Metaphors: Mural Map Cycles of the Italian Renaissance,” in *Art and Cartography: Six Historical Essays*, ed. David Woodward (Chicago: University of Chicago Press, 1987), 97–122.

34. The Elizabethan poet John Donne summed up the prevailing atmosphere with heavy sarcasm: “For of Meridians, and Parallels / Man hath weaved out a net, and this net throwne / Upon the Heavens, and now they are his owne. / Loth to go up the hill, or labour thus / To go to heaven, we make heaven come to us. / We spur, we aigne the stars, and in their race / They’re diversly content t’obey our pace.” See John Donne, *The First Anniversarie: An Anatomie of the World* (London, 1621).

35. Bolzoni, *Gallery of Memory*, xxiv.

In this game, maps seem to have been dominant. Ortelius, in the preface to his *Theatrum*, summarized the mnemonic function of maps by pointing out how they help us to remember what we read in geography and history books: “And when we have acquainted our selues somewhat with the use of these *Tables* or *Mappes*, or have attained thereby to some reasonable knowledge of *Geography*, whatsoever we shall read, these *Chartes* being placed, as it were certaine glasses before our eyes, will the longer be kept in memory, and make the deeper impression in us: by which meanes it commeth to passe, that now we do seeme to perceiue some fruit of that which we haue read.”³⁶

MAP COLLECTING AND ARRANGEMENT

MAPS AND LIBRARIES

As visual memory aids—for summarizing, tabulating, and displaying in orderly fashion a wide variety of data—maps were to find their expected place in libraries, archives, and collections. As Skelton points out, “In the dynamic formation of private libraries in fifteenth-century Italy, the center of the Renaissance book world, geography and cartography had a conspicuous share, even if we cannot yet point to a specific map collection.”³⁷ Although recent research provides evidence of the existence of maps in princely or monastic libraries as early as the Carolingian Renaissance,³⁸ map ownership acquired consistency from the fifteenth century onward. As early as the first decades of the century, Cardinal Giordano Orsini is known to have had a number of maps covering various parts of Europe, Asia, and Africa in his library in Florence, as did Niccolò Niccoli and Sozomeno da Pistoia later in the same city. Niccoli offers an interesting example of the early antiquarian use of maps, for he not only studied the maps that he possessed but also displayed them on the walls of his house, together with his antiquities.³⁹ The maps in the library of the court of Ferrara were a different case. There the ruling family’s interest in maps reflects both scholarly and state concerns. Borso and Ercole d’Este in Ferrara had some fine works of cartography and became important patrons of the mapmaker Nicolaus Germanus.⁴⁰ Certain maps were already considered historical relics. So much is evident from Palla Strozzi’s will (1462): the copy of Claudius Ptolemy’s *Geography* given to him by Manuel Chrysoloras in 1398 was left to Palla Strozzi’s heirs with explicit instructions that it was to be preserved as a family heirloom.⁴¹

Mainly scholarly but also state concerns characterize the map collecting and display of Lorenzo de’ Medici (il Magnifico). In 1512, the inventory of Lorenzo’s property included twenty-one maps, most of them painted, of which thirteen adorned the walls of the duke’s scriptorium.⁴² Similar motives for map ownership are detectable

at the court of Mantua. As we know from old inventories, the library of Isabella d’Este Gonzaga contained not only books on geography but also maps of the “new islands,” two *isolarii*, and a terrestrial globe. The last of these was a copy of a globe then in the Vatican library (probably the one constructed by Nicolaus Germanus in 1477) that Isabella ordered as a curiosity (*cosa singulare*).⁴³

In northern and central Europe, rulers, aristocrats, and scholars were quick to follow the Italian lead. In France, for example, Henri IV’s minister of war, the duke of Sully (Maximilien de Béthune), was a passionate collector of maps, an occupation that reflects both public and private

36. Abraham Ortelius, *Theatrum orbis terrarum . . . The Theatre of the Whole World* (London: John Norton, 1606); facsimile ed., *The Theatre of the Whole World: London, 1606*, intro. R. A. Skelton (Amsterdam: Theatrum Orbis Terrarum, 1968).

37. R. A. Skelton, *Maps: A Historical Survey of Their Study and Collecting* (Chicago: University of Chicago Press, 1972), 38.

38. See [Leo Bagrow], “Old Inventories of Maps,” *Imago Mundi* 5 (1948): 18–20.

39. See Fiorentino Vespasiano da Bisticci, *Le Vite*, 2 vols., ed. Aulo Greco (Florence: Nello sede dell’Istituto Nazionale di Studi sul Rinascimento, 1970–76), 2:240.

40. It is worth mentioning that several of Orsini’s maps bear the signature “Cristoforo,” which has led some experts to believe that they were drawn by Cristoforo Buondelmonti; see Emil Jacobs, “Neues von Cristoforo Buondelmonti,” *Jahrbuch des Archäologischen Instituts* 20 (1905): 39–45, and Cristoforo Buondelmonti, “*Descriptio insule Crete*” et “*Liber Insularum*” cap. XI: *Creta*, ed. Marie-Anne van Spietael (Candia, Crete: Syllogos Politistikēs Anaptyxeōs Herakleiou, 1981), 38. On Niccoli’s collection, see B. L. Ullman and Philip A. Stadter, *The Public Library of Renaissance Florence: Niccolò Niccoli, Cosimo de’ Medici and the Library of San Marco* (Padua: Antenore, 1972), 110–12, and on the collection of Borso and Ercole d’Este, see Skelton, *Maps*, 39–40. On the maps in Sozomeno da Pistoia’s library, see Giancarlo Savino, “La libreria di Sozomeno da Pistoia,” *Rinascimento*, 2d ser., 16 (1976): 159–72, esp. 171–72.

41. Sebastiano Gentile, “Emanuele Crisolora e la ‘Geografia’ di Tolomeo,” in *Dotti bizantini e libri greci nell’Italia del secolo XV*, ed. Mariarosa Cortesi and Enrico V. Maltese (Naples: M. d’Avria, 1992), 291–308, esp. 302 n. 33.

42. See Woodward, *Maps as Prints*, 120–21, where the maps mentioned in the inventory are listed room by room, and Marco Spallanzani and Giovanna Gaeta Bertelà, *Libro d’inventario dei beni di Lorenzo il Magnifico* (Florence: Associazione Amici del Bargello, 1992), 6, 21, 26–27, 33, and 53.

43. On the globe, see Robert W. Karrow, *Mapmakers of the Sixteenth Century and Their Maps: Bio-Bibliographies of the Cartographers of Abraham Ortelius, 1570* (Chicago: For the Newberry Library by Speculum Orbis Press, 1993), 256. Isabella initially ordered two globes (one terrestrial and one celestial), but when she discovered that the celestial globe would cost her two hundred ducats compared to twenty to twenty-five for the terrestrial, she contented herself with the latter only; see Alessandro Luzio and Rodolfo Renier, “La coltura e le relazioni letterarie di Isabella d’Este Gonzaga,” *Giornale Storico della Letteratura Italiana* 34 (1899): 1–97, esp. 37. Apart from its anecdotal interest, this story is significant inasmuch as it proves that making a celestial globe was a very different matter from making a terrestrial globe, involving more specialized craftsmanship and artistic skills or more expensive materials.

concerns.⁴⁴ In England, there were maps in the royal collections, especially from the time of Henry VIII, and some of them may have been acquired by his predecessors.⁴⁵ We know from the inventories of the crown estate that Henry VIII collected a considerable number of maps and plans and used them to adorn various rooms in his palaces, especially at Whitehall and Greenwich.⁴⁶ In fact, some of those rooms were almost entirely decorated with maps, to such an extent that they could be described as primitive “map rooms.”⁴⁷ The trend gathered momentum in the reign of Edward VI, who “was himself almost permanently surrounded by maps and plats.”⁴⁸ Some of the maps on display were medieval specimens of historical value, and some were gifts, while others, depicting past battles, cities and towns in England, and English possessions, were intended to heighten the king’s prestige and impress his visitors. Similar purposes governed the decision to decorate Philip II’s throne room with maps selected from Ortelius’s *Theatrum orbis terrarum*. Their display aimed to remind royal visitors of the vastness and might of the Spanish empire.

Libraries often contained books with maps in them. The dozens of manuscript copies and printed editions of Ptolemy’s *Geography*, manuscript and printed *isolarii*, manuscript portolan atlases, and, later, printed atlases were intended for the libraries of scholars and dignitaries.⁴⁹ The German antiquarian, diplomat, politician, and economist Konrad Peutinger of Augsburg had a collection of Portuguese charts and the famous eleventh- or twelfth-century copy of the Roman road map that now bears his name.⁵⁰ The polymath encyclopedist Isaac Vossius; Andrew Perne, master of Peterhouse at Cambridge; the antiquarian and politician Sir Robert Cotton; and Archbishop Matthew Parker all had excellent maps in their libraries, as did Sir William Cecil (Lord Burghley), Queen Elizabeth’s lord treasurer.⁵¹

Sir William Cecil is an interesting case for several reasons. First, he formed one of the few map collections that have survived to the present day. Second, his collection combines public and private uses in the antiquarian field: some of the notes he made on the maps of England in the atlas by Christopher Saxton (known as the Burghley-Saxton atlas) are concerned with local history, while his obsession with collecting was revealed in the maps that covered the walls of his house and by that fact that he always carried with him a manuscript map of the British Isles drawn by Laurence Nowell.⁵² The map collection of Samuel Pepys, secretary of the admiralty, whose library contained a number of topographical plans as well as sea charts, was presumably intended for both public and private use.⁵³ Skelton quotes a typical excerpt from Pepys’s diary testifying to the great importance Pepys attached to maps and also to the disorder prevailing in his library: “Mightily troubled, and even in my sleep, at my miss-

ing . . . Speed’s Chronicle and Maps, and the two parts of Waggoner, and a book of cards [charts], which I suppose I have put up with too much care that I forget where they are.”⁵⁴

Similar instances are too numerous to mention, for maps and charts were essential items in an educated man’s library in the sixteenth and seventeenth centuries. Sometimes, though not often, the maps were considered a separate section of a collection. One of the few such cases was that of Andrew Perne’s library. In the inventory of this library (three thousand volumes he intended to be donated to Peterhouse), twenty-six of the twenty-seven sheet maps are listed in a separate section, although several atlases are intermixed with the

44. David Buisseret, “Les ingénieurs du roi au temps de Henri IV,” *Bulletin de la Section de Géographie* 77 (1964): 13–84, esp. 80.

45. Barber, “England I,” 27.

46. See Helen Wallis, “The Royal Map Collections of England,” *Revista da Universidade de Coimbra* 28 (1980): 461–68.

47. See David Starkey, ed., *The Inventory of King Henry VIII: Society of Antiquaries MS 129 and British Library MS Harley 1419* (London: Harvey Miller for the Society of Antiquaries, 1998–).

48. Barber, “England I,” 42.

49. This can be inferred from the dedications on manuscript charts and atlases of the sixteenth and seventeenth centuries. The same inference can be drawn from the current catalogs of museums and libraries that have systematically recorded the names of the first owners of maps and atlases, such as the Biblioteca Nazionale Marciana and the Museo Correr, both in Venice.

50. Skelton, *Maps*, 41–42.

51. See Dirk de Vries, “Atlases and Maps from the Library of Isaac Vossius (1618–1689),” *International Yearbook of Cartography* 21 (1981): 177–93; Catherine Delano-Smith, “Map Ownership in Sixteenth-Century Cambridge: The Evidence of Probate Inventories,” *Imago Mundi* 47 (1995): 67–93; Colin G. C. Tite, *The Manuscript Library of Sir Robert Cotton* (London: British Library, 1994); *Sir Robert Cotton as Collector: Essays on an Early Stuart Courtier and His Legacy*, ed. C. J. Wright (London: British Library, 1997); and Kevin Sharpe, *Sir Robert Cotton, 1586–1631: History and Politics in Early Modern England* (Oxford: Oxford University Press, 1979). On Parker’s maps, see Skelton, *Maps*, 41–42, and on Cecil, see R. A. Skelton and John Newenham Summerson, *A Description of Maps and Architectural Drawings in the Collection Made by William Cecil, First Baron Burghley, Now at Hatfield House* (Oxford: Roxburghe Club, 1971), and J. B. Harley, “The Map Collection of William Cecil, First Baron Burghley, 1520–1598,” *Map Collector* 3 (1978): 12–19.

52. See Victor Morgan, “The Cartographic Image of ‘The Country’ in Early Modern England,” *Transactions of the Royal Historical Society*, 5th ser., 29 (1979): 129–54, esp. 147–48; William Brenchley Rye, *England as Seen by Foreigners in the Days of Elizabeth & James the First* (London: Allen and Unwin, 1865), 44–45; and the 1592 testimony of Sir William Petty, first marquis of Lansdowne, quoted in Gwyn Walters, “The Antiquary and the Map,” *Word & Image* 4 (1988): 529–44, esp. 531.

53. On the antiquarian aspect of Pepys’s map collection, see Sarah Tysacke, “Samuel Pepys as Map Collector,” in *Maps and Prints: Aspects of the English Booktrade*, ed. Robin Myers and Michael Harris (Oxford: Oxford Polytechnic Press, 1984), 1–29.

54. 19 September 1666; see Skelton, *Maps*, 44–45.

books.⁵⁵ Similar attitudes were prevalent in the Low Countries. Koeman mentions the collection of fifty maps belonging to the lords of Brederoke that adorned the rooms of Batestein Castle. Mention should also be made of the presence of maps and atlases in private libraries in Leiden and Amsterdam, such as those of Jan Dirksz. van Brouckhoven, Alewijn Petri, and Adrian Pauw.⁵⁶ Another example is the collection of Viglius van Aytta, the Flemish president of the Privy Council (the Spanish Council of the Netherlands), who made a detailed inventory of his library and private papers before he died.⁵⁷ The catalog of his maps, which he left to the library of the college he had founded at Louvain, was compiled in 1575. It lists about two hundred maps, mostly printed but some hand-drawn on parchment, as well as six tapestry maps of the Low Countries made for a duke of Savoy.⁵⁸

In the sixteenth century, the demand for maps, especially printed maps, grew by leaps and bounds. Map publishing houses in Italy, Germany, and the Low Countries were gathering places for scholars and collectors as well as distribution centers from which maps were shipped to all the large cities in Europe. Typical examples were the houses of Tramezzino, Salamanca, and Lafreri in Rome; Caymox in Nuremberg; and Plantijn in Antwerp.⁵⁹ The growth of interest in maps was also evident at the Frankfurt Book Fair, where map publishers were present in person or sent agents to represent them; from 1571, maps had a section to themselves in the book fair catalog.⁶⁰

The part played by cartography in the structure of Renaissance encyclopedism during these two centuries is well illustrated by the contents and decor of the Bibliotheca Windhagiana, the late Renaissance library of Joachim Enzmilner at Schloss Windhag in upper Austria.⁶¹ It contained a rich collection of maps, plans, and globes, and the elaborate painted decoration on the ceiling of the library included portraits of Ptolemy, Ortelius, Mercator, Christopher Columbus, and Amerigo Vespucci.

The place of cartography in the overall arrangement of libraries and the relationships of the various branches of learning is reflected in the shelving and classification practices used in libraries.⁶² One can make some deductions about pre-thematic classification by noting where books were shelved or cataloged.⁶³ Examples are numerous in all princely libraries, both in the Mediterranean countries and in northern Europe. In Florence, through the combined initiatives of Niccolò Niccoli and Cosimo de' Medici the elder, an early public library was founded in the fifteenth century. There the maps and illustrated geographical books, mainly manuscript copies of Ptolemy's *Geography* and contemporary cosmographic works such as Francesco Berlinghieri's, were classified in the history section.⁶⁴ In the library of the dukes d'Este at Ferrara, cartographic works and books containing maps—among them a *mappamundi*, a copy of *Topografia terrae promiss-*

ionis by Alessandro Ariosto, and excerpts from the cosmographic poems *La Sfera* and “Il Dittamondo,” which were illustrated with maps—stood next to the historical and travel books.⁶⁵

In the royal library of Charles V of France, the Catalan atlas is listed between two illuminated manuscripts of historical works.⁶⁶ The library catalog of his successor,

55. See Patrick Collinson, David McKitterick, and Elisabeth Leedham-Green, *Andrew Perne: Quatercentenary Studies*, ed. David McKitterick (Cambridge: Published for the Cambridge Bibliographical Society by Cambridge University Library, 1991), and Delano-Smith, “Map Ownership.”

56. C. Koeman, *Collections of Maps and Atlases in the Netherlands: Their History and Present State* (Leiden: E. J. Brill, 1961), 19–33.

57. See E. H. Waterbolk, “Viglius of Aytta, Sixteenth Century Map Collector,” *Imago Mundi* 29 (1977): 45–48, and Antoine De Smet, “Viglius ab Aytta Zuichemus: Savant, bibliothécaire et collectionneur de cartes du XVI^e siècle,” in *The Map Librarian in the Modern World: Essays in Honour of Walter W. Ristow*, ed. Helen Wallis and Lothar Zögner (Munich: K. G. Saur, 1979), 237–50.

58. Koeman, *Collections*, 19–35; the inventory, *Regionum, locorumque descriptiones, seu, ut vulgo vocant chartarum catalogus, secundum ipsorum situationem, conscriptus mense augusto 1575*, is reprinted in [Bagrow], “Old Inventories of Maps,” 18–20. Van Aytta's collection was comprised mostly of regional maps of western and northern Europe.

59. See Roberto Almagià, *Monumenta cartografica Vaticana*, 4 vols. (Vatican City: Biblioteca Apostolica Vaticana, 1944–55), 2:115–20, and Jean Denucé, *Oud-Nederlandsche kaartmakers in betrekking met Plantijn*, 2 vols. (Antwerp: De Nederlandsche Boekhandel, 1912–13).

60. Bernhard Fabian, ed., *Die Messkataloge des sechzehnten Jahrhunderts: Faksimiledrucke*, 5 vols. (Hildesheim: G. Olms, 1972–2001), 1:365.

61. This great library and the *Kunstammer* that went with it can no longer be seen. Enzmilner's only daughter, who inherited his estate, demolished the whole building and used the materials to build a convent. A description of the rooms and collections can be found in the *Topographia Windhagiana*, first published as a privately funded addendum to Matthäus Merian's *Topographia Provinciarum Austriacarum* (Frankfurt am Main, 1649), published in three editions. Although Enzmilner was the son of a humanist and had been given a good education, he was a self-made man whose lifestyle was in many respects that of a nouveau riche. He made his fortune and won his title in the service of the Habsburgs, mainly by persecuting Protestants, whose property he then appropriated. See Eric Garberson, “Bibliotheca Windhagiana: A Seventeenth-Century Austrian Library and Its Decoration,” *Journal of the History of Collections* 5 (1993): 109–28.

62. On the classification of books, see Henri-Jean Martin, “Classements et conjonctures,” in *Histoire de l'édition française*, 4 vols., ed. Henri-Jean Martin and Roger Chartier (Paris: Promodis, 1983–86), 1: 429–57.

63. See Ian Maclean, “The Market for Scholarly Books and Conceptions of Genre in Northern Europe, 1570–1630,” in *Die Renaissance im Blick der Nationen Europas*, ed. Georg Kauffmann (Wiesbaden: Harrassowitz, 1991), 17–31.

64. Ullman and Stadter, *Public Library of Renaissance Florence*, 110–12.

65. Giulio Bertoni, *La Biblioteca Estense e la coltura ferrarese ai tempi del Duca Ercole I (1471–1505)* (Torino: Loescher, 1903), 102, 184–85, and 261.

66. “Le livre des merveilles du monde,” by Jean de Mandeville, and another elaborately illuminated manuscript, the “Histoire universelle

Charles VI, retained the section as it was with the addition of copies of Marco Polo's travel account.⁶⁷ The library of Jean, duc de Berry, a book lover and patron of the arts, listed five maps. These were classified in a pre-scientific category of books of general learning that consisted mainly of historical works but also included accounts of voyages and exploration, as well as books on medicine, astrology, and cosmography.⁶⁸ Finally, listed in the catalog for the library of Philip the Good, duke of Burgundy (1420), were two *mappaemundi* placed together with a bestiary and the "Roman de la Dame à la Licorne."⁶⁹

Private libraries definitely offer more reliable clues about the owners' interests and attitudes toward collecting. The few published catalogs of private libraries, dating mostly to the sixteenth century, usually contain groupings based on the language and format of the books, but some categories are thematic. One fairly large private library (containing about two thousand titles of manuscript and printed books) was that of the Spanish bibliophile Don Diego Hurtado de Mendoza, containing mostly books acquired in Venice, where Mendoza was the Spanish ambassador. Upon his death in 1575, his collection went to the Spanish royal library in the Escorial. Part of the catalog of Mendoza's library survives, but it contains only the categories theology, philosophy, and mathematics. Among the titles listed in this fragment are works on astrology and cosmography, as well as one manuscript and six printed copies of Ptolemy's *Geography*, the manuscript illustrated with maps.⁷⁰ Sumptuous bindings indicate the prominence given in the collection to the works of Strabo, Johannes Regiomontanus, Peter Apian, Simon Grynaeus, Johannes Stöfler, Oronce Fine, and Guillaume Postel.⁷¹

Although the maps and cosmographic books of the Spanish royal library were included under the heading "Mathematics" by the compiler of the library's catalog,⁷² the same is not true of the catalog of the books belonging to the Flemish intellectual and politician Philips van Marnix, which is an interesting example of a private library catalog with groupings that are thematic. Van Marnix's collection, consisting of approximately sixteen hundred titles, was put up for sale on his death in 1599.⁷³ It was the practical reference library of an intellectual rather than the collection of a bibliophile, and it reflected the interests of the learned in the Low Countries in the last decades of the sixteenth century. Most of the contents were printed books classified under five headings: theology; medicine; history; philosophy, geometry, mathematics, and poetry; and music. A small section comprising all the manuscripts, irrespective of their subject, follows these thematic categories. All the printed books on geographical subjects are included in the history section, and all the printed books on astronomy are in the wide-ranging category of philosophy, geometry, mathematics, and poetry. Van Marnix's library contained several edi-

tions of Ptolemy's *Geography* illustrated with maps, as well as the atlases of Ortelius and Mercator and the atlas of cities by Georg Braun and Frans Hogenberg.

In libraries in the Low Countries, atlases and geographical books with maps were usually classified under the heading *Historici*. This is evident from the catalogs of the library of Utrecht (1608) and the university library of Leiden (1619). An interesting feature occurs in the catalog of the Amsterdam civic library (1612): in their efforts to define the new directions of antiquarian research in historical geography, the catalog compilers listed atlases (those by Mercator and Ortelius), cosmographies (those by Sebastian Münster, André Thevet, and François Belleforest), and works on ancient geography (Ortelius's *The-saurvs geographicvs* and William Camden's *Britannia*) under the heading *Mathematici Polyhistores*.⁷⁴

The book lists of the Frankfurt Book Fair provide valuable evidence concerning the circulation and classification of books in Renaissance Europe from 1564 onward.⁷⁵ Here again, the geographical and cartographic works were initially included in the history section, but in 1571 that category was renamed "History and Geography," even though historical works greatly outnumbered those on geographical subjects. In the earliest issues of the Frankfurt book lists, there were some separate maps in addition to the atlases and geographical or cosmographic works that contained maps. In 1565, for example, there

depuis la création jusqu'à la mort de César." See Léopold Delisle, *Recherches sur la librairie de Charles V, roi de France, 1337-1380*, 2 vols. (Amsterdam: Gérard Th. van Heusden, 1967), 1:275-78.

67. Delisle, *Recherches sur la librairie*, 1:276-77.

68. Delisle, *Recherches sur la librairie*, 2:252-55. The maps in the duc de Berry's collection are as follows: "Une bien grande Mappamonde, bien historiée, enroulée dans un grant et long estuy de bois" (cat. no. 191); "Une Mappamonde escripte et historiée, en un grant roole de parchemin" (cat. no. 192); "Une Mappamonde, en uns tableaux de bois longués, fermans en manière d'un livre" (cat. no. 193); "Une autre Mappamonde, en un roolle de parchemin dedans un estui de cuir" (cat. no. 194); and "Une Mappamonde de toute la Terre sainte, peinte sur une toile en un grand tableau de bois" (cat. no. 195).

69. Georges Doutrepoint, *Inventaire de la "librairie" de Philippe le Bon (1420)* (Geneva: Slatkine Reprints, 1977), 140-41.

70. On the printed and manuscript copies of Ptolemy's *Geography* in Mendoza's collection, see Anthony Hobson, *Renaissance Book Collecting: Jean Grolier and Diego Hurtado de Mendoza, Their Books and Bindings* (New York: Cambridge University Press, 1999), 187-88 (printed) and 243 (manuscript).

71. The full catalog was destroyed in the fire that ravaged the Escorial in 1671; see Hobson, *Renaissance Book Collecting*, 88-89.

72. Probably Benito Arias Montano, Philip II's librarian, from 1576 onward.

73. *Catalogue of the Library of Philips van Marnix van Sint-Aldegonde*, intro. G. J. Brouwer (Nieuwkoop: B. de Graaf, 1964).

74. Koeman, *Collections*, 24-25.

75. These lists, which soon developed into the official catalog of the book fair, were collected and published by the bookseller Georg Willer of Augsburg. Five volumes covering the period 1565-1600 have so far been published. See Fabian, *Die Messkataloge*.

was a topical map of the siege of Malta and a map of Egypt by Ortelius.⁷⁶ In 1577, the history and geography section included two globes—one terrestrial and one celestial—despite the fact that astronomical works were normally listed under the heading “Philosophy and Mathematics.”⁷⁷

Another interesting feature of these catalogs is the occasional appearance, starting in 1571, of a new category: illustrated printed works. Listed under the heading *Typi Aliquot Aenei, Aliique Libelli Picturas Tantum Continentes* are some illustrated printed books and a much greater number of single engravings of geographical, historical, and religious subjects, with maps predominating. The first list of engravings (1571) comprises five works, of which three are topical maps relating to the Venetian-Turkish war (maps of the battles at Sopoto and in the Mani and Cyprus, printed in Rome); the other two are a German print of a hermit possessed by devils and a genealogical table of Christians and Muslims, printed in Rome.⁷⁸ The next year (1572), there were more engravings: ten topical maps printed at Nuremberg by Balthasar Jenichen, also dealing with the Venetian-Turkish war, and a number of portraits and pictures of local costumes, family trees, and religious scenes.⁷⁹ In 1573, the rubric of the engravings was supplemented by a lengthy appendix listing maps only. This valuable document lists eighty-four maps printed in Venice and divided into two categories according to whether they were colored or not.⁸⁰

The section comprising pictorial prints did not appear regularly, as did the other categories in the Frankfurt catalogs. The years when it featured most frequently and contained the largest numbers of prints were around 1570–75, a crucial period in the history of printed cartography; thereafter it appeared sporadically until 1600, when the series came to an end. Moreover, the criteria for inclusion in this category were by no means clear-cut. The editions of Ortelius’s *Theatrum orbis terrarum* are in the history and geography section, while the successive supplements to that same work and *L’isole più famose del mondo* by Tommaso Porcacchi and Girolamo Porro are listed among the engravings. The gradual formation of this latter category foreshadows the emergence of a characteristic grouping of a different type, defined not by subject matter but by the production technique. The works in the engraving category are linked together in a variety of ways: they are engraved by the same artists and often combine the same material; costumes, portraits, and religious or historical subjects, such as representations of Jesus or the seven wonders of the ancient world, are frequently found as decorations on printed maps.⁸¹ Furthermore, maps, portraits, and family trees were combined in contemporary collections.

One last clue to the order in which maps were arranged during the Renaissance is found in the bibliographies and

guides for the formation of libraries—those works that Chartier has aptly described as “libraries without walls.”⁸² The ancient roots of this genre go back to the great collections of written works that first appeared in late antiquity and multiplied in the Middle Ages. However, the bibliographical form it assumed from the late fifteenth century onward took shape in response to the mushrooming supply of printed books.

This is not the place to recount the history of the genre, which in its early stages did not follow a uniform methodology.⁸³ Many different systems were suggested based on a variety of criteria and putting forward a wide range of classifications.⁸⁴ The point to be made here is that geographical works, including maps, were usually deemed offshoots of the history section and were seldom classified separately. In Konrad Gesner’s classification scheme, geography came immediately after history.⁸⁵ These two disciplines, along with magic and engineering (*artes illiteratae*), were grouped together as *artes et scientiae praeeparantes et ornantes*, as distinct from astronomy and astrology, which, with music, geometry, and arithmetic, were classified as *artes et scientiae praeeparantes Necessariae Mathematicae*.

In 1550, Antonio Francesco Doni proposed a classification scheme for the use of Italian booksellers and read-

76. See Fabian, *Die Messkataloge*, 1:62.

77. Quite possibly the choice of the two globes was influenced by the title given to them, which stressed their connection to the maps of Mercator and Ortelius: *Globi recentissimi Geographicus & Astronomicus, quorum ille ad postremum Ger. Mercatoris mappam & theatrum Ortelii, hic verò ad neotericorum Astronomorum calculum magna diligentia accomodatus est. Auctore Io. Ant. Barucio. Coloniae Agrippinae*. See Fabian, *Die Messkataloge*, 2:255.

78. Fabian, *Die Messkataloge*, 1:365.

79. Fabian, *Die Messkataloge*, 1:442–43.

80. See Fabian, *Die Messkataloge*, 1:532–35, and Leo Bagrow, “A Page from the History of the Distribution of Maps,” *Imago Mundi* 5 (1948): 53–62. Sixty-seven maps were listed as “white” and seventeen as colored.

81. A typical example is the world map fronting the atlases of Willem Jansz. Blaeu from 1630 onward.

82. See Roger Chartier, *Culture écrite et société: L’ordre des livres, XIV^e–XVIII^e siècle* (Paris: A. Michel, 1996), 107–31.

83. See Maria Cochetti, *Repertori bibliografici del cinquecento* (Rome: Bulzoni, 1987), and Marc Baratin and Christian Jacob, eds., *Le pouvoir des bibliothèques: La mémoire des livres en Occident* (Paris: Albin Michel, 1996).

84. See Martin, “Classements et conjonctures”; Chartier, *Culture écrite et société*; Claude Jolly, ed., *Histoire des bibliothèques françaises*, 4 vols. (Paris: Promodis-Éditions du Cercle du Librairie, 1988–92), vol. 2; Theodore Besterman, *The Beginnings of Systematic Bibliography* (London: Oxford University Press, 1935); and Luigi Balsamo, *La bibliografia: Storia di una tradizione* (Florence: Sansoni, 1984).

85. Konrad Gesner, *Pandectarum sive Partitionum universalium Conradi Gesneri Tigurini, medici & philosophiae professoris, libri XXI* (Zurich, 1548). It was preceded by the *Bibliotheca universalis*, a monumental folio volume of 1264 pages published in 1545, in which the works were arranged alphabetically by author.

ers. In this basically alphabetical system, thematic groupings appeared only in the appendix, where works translated from Latin into Italian were listed, and there cosmographic works were treated as a subdivision of the history section.⁸⁶ Similar systems were proposed by Johannes Trithemius (for the German bibliography), John Bale (for the British), and François Grudé La Croix du Maine and Antoine Du Verdier (for the French).⁸⁷ In these systems, maps and geographic or cartographic works were usually listed in the history section or in a separate section next to it, but that was not an invariable rule. The French bibliographical guide compiled in 1598 by Philibert Mareschal has the maps and all the cosmographic, geographic, and topographic works classified under the mathematical *arts libéraux*: to be precise, under “Geometry.”⁸⁸ In fact, maps and books containing maps account for a large proportion of the works in this section: of the fifty-seven works listed, eighteen are sheet maps and printed atlases or books containing a substantial amount of cartographic material.⁸⁹

Maps and geographical material were usually regarded as part of history, or at any rate as an appendage to history. However, Mareschal was not the only one to depart from this norm. We need only remind ourselves of the way Diego Hurtado de Mendoza’s collection of books was cataloged, or the case of John Dee, who equated cartography with geography and had a considerable number of maps in his library. Dee, following the new systematic classification scheme for the sciences, put geography, chorography, and hydrography under the heading of mathematics and science, as subdivisions of practical geometry (“*Geometrie, vulgar: which teacheth Measuring*”).⁹⁰

Dee’s classification of the sciences takes us to the problem at the very heart of Renaissance encyclopedism: classifying the arts and sciences methodically.⁹¹ Because to the Renaissance scholar the world was an indivisible whole governed by coherent relations, classification systems had to be global and universal.⁹² Petrus Ramus, one of the greatest thinkers of the sixteenth century, suggested a new method of classification that influenced all European thought.⁹³ Ramus’s scheme classified topography, chorography, hydrography, and astrology as branches of cosmography, which was presented as the paramount science and was distinguished from history and geometry, both of which were seen as secondary.⁹⁴

The examples previously cited suggest a state of flux in the nature and function of Renaissance maps. This was due to a divergence between the production and uses of maps during the Renaissance. The link between cartography and history, as noted by Dee in his book, seems strange at first sight. It may perhaps be accounted for by the complex nature of cartography, which involves, on the one hand, the scholarly, antiquarian process of gathering data and subjecting them to critical examination,

and, on the other, the mathematical process of organizing the data on a map. As for the divergences between bibliographical theory and practice, those are to be explained by the often personal character of libraries and the distinctive features of each, not to mention such purely practical considerations as the bindings and formats of the books. Whereas atlases and similar works (Ptolemy’s *Geography*, *isolarii*, portolan atlases, and so on) form an integral part of a collection of books, the same is not true of printed sheet maps. Those were listed in the catalogs of printers, publishers, and booksellers, but thereafter they disappeared without trace, because from the moment they were hung on a wall, they ceased to be cataloged with the other printed documents in the library and were listed in the catalogs of collections.

MAPS AND COLLECTIONS

Out of the antiquarian libraries and *studii* grew organized collections of antiquities, works of art, and natural

86. Antonio Francesco Doni, *La Libreria del Doni Fiorentino: Nella quale sono scritti tutti gl'autori vulgari con cento discorsi sopra quelli . . .* (Venice, G. G. de' Ferrari, 1550).

87. Johannes Trithemius, *Catalogus illustrium virorum Germaniae* (Mainz, 1495); John Bale, *Illustrium maioris Britanniae scriptorum . . .* (Ipswich, 1548); François Grudé, sieur de La Croix du Maine, *Premier volume de la Bibliothèque du Sieur de la Croix du Maine . . .* (Paris: A. l'Angellier, 1584); and Antoine Du Verdier, *La bibliothèque d'Antoine du Verdier . . .* (Lyons: B. Honorat, 1585).

88. Philibert Mareschal, *La guide des arts et sciences: Et promptuaires de tous liures tant composez que traduicts en François* (1598; reprinted Geneva: Slatkine Reprints, 1971).

89. Besides the French translations of Ortelius’s *Theatrum orbis terrarum*, the *Cosmography* of Sebastian Münster, and Braun and Hogenberg’s *Civitates orbis terrarum*, the geometry section includes terrestrial globes; a map of the world in the shape of a lily; maps of Palestine by Bonaventure Brochard and Guillaume Postel; a map of Anjou by Lézin Guyet; a map of Le Maine by Macé Ogier; a chart of the Orkneys by Nicolas de Nicolay; maps of France and Galicia; a map of Cyprus by Estienne de Lusignan; a map of Poitou, Rochelois, and the Îles Marines by Pierre Rogier; and other maps. See Mareschal, *Guide des arts et sciences*, 34–41.

90. According to the tree of “Sciences, and Artes Mathematicall” in an appendix to Dee, *Mathematicall Praeface*.

91. See Philippe Desan, *Naissance de la méthode Machiavel, La Ramée, Bodin, Montaigne, Descartes* (Paris: A. G. Nizet, 1987).

92. See Cesare Vasoli, *L'Enciclopedia del Seicento* (Naples: Bibliopolis, 1978), and, more briefly, Jean-Marc Chatelain, “Du Parnasse à l'Amérique: L'imaginaire de l'encyclopédie à la Renaissance et à l'Age classique,” in *Tous les savoirs*, 156–63. On the dissemination of systems for the classification of knowledge, see the standard work by Eugenio Garin: *L'educazione in Europa (1400–1600): Problemi e programmi* (Bari: Laterza, 1957).

93. See Rossi, *Art of Memory*, 97–102, and Walter J. Ong, *Ramus, Method, and the Decay of Dialogue: From the Art of Discourse to the Art of Reason* (Cambridge: Harvard University Press, 1958).

94. Petrus Ramus, *Dialectique de Pierre de La Ramée* (Paris: A. Wechel, 1555), and Christophe de Savigny, *Tableaux accomplis de tous les arts libéraux* (Paris: Frères de Gourmont, 1587).

objects, which came to be known as cabinets of curiosities or *Wunderkammern*.⁹⁵ An obsession with collecting is as old as human curiosity. Pomian has described and analyzed the ways in which Renaissance antiquarian scholars' sense of curiosity gave rise to these precursors of museums and treasure houses of knowledge.⁹⁶ The needs that led to their formation are as closely connected to the medieval heritage as they are to the workings of emergent modernism. Collections of antiquities—natural, rare, curious, and valuable objects—were seen as aids to a rational interpretation and classification of civilization. Certainly they possessed material value and educational value, and they were also status symbols enhancing their owners' personal prestige.⁹⁷

Although the classification systems of these collections were idiosyncratic, determined by the interests and leanings of their owners, it is possible to identify in each collection certain basic categories of items. Categories of relics and heirlooms include sacred and other valuable objects that the cabinets of curiosities inherited from earlier treasuries, items that provided aesthetic enjoyment, objects that furthered knowledge—mainly of the past but also of the present—and objects of knowledge by their very nature.⁹⁸ These last two categories of collectors' pieces included maps, charts, plans, and globes as well as other images and scientific devices.

Cabinets of curiosities appeared in Italy in the second half of the sixteenth century; their aim was “to generate a harmonious vision which enabled a simultaneous evocation, or *ars memoriae*, of the whole of art and nature.”⁹⁹ An early cabinet of curiosities—one of the very first—was the Guardaroba Nuova in the Palazzo Vecchio, Florence, known as the “Room of Geographical Maps.”¹⁰⁰ The idea behind this *invenzione* (invention) of Cosimo I de' Medici was to turn the princely treasury, together with a portrait gallery and part of his collection of antiquities, into a hall of polymathy. For a detailed description of the conception and aims of the whole project, we have Giorgio Vasari's testimony: the Guardaroba Nuova was unquestionably an early cabinet of curiosities.¹⁰¹ Its precious contents were to be kept in cupboards with maps painted on their doors. Maps of the heavens and the earth were also to be painted on the ceiling, with the constellations on the walls around the room below them. The space between the constellations and the maps on the cupboard doors was to be filled with three hundred portraits of famous men of the last five centuries and original busts of the ancient rulers of the regions covered by the maps. Around the maps were to be paintings of plants and animals native to the mapped regions. Suspended between the floor and the ceiling on special gantries was to be the famous astronomical clock made by Lorenzo della Volpaia for Lorenzo de' Medici, showing the daily movement of the planets, and also two globes (one terrestrial and one celestial). Symbols on the

globes were to refer the viewer to the countries and constellations depicted around the room.

The cosmographer Egnazio Danti was commissioned to paint “after the manner of miniatures, the Tables of Ptolemy, all measured with perfect accuracy and corrected after the most recent authorities, with exact charts of navigation and their scales for measuring and degrees. . . . With these [were to be] all the names [of places], both ancient and modern.”¹⁰² Danti spent twelve years working on the Guardaroba Nuova—from 1563 to 1575, just after Duke Cosimo's death—and produced thirty maps. The work was continued by Stefano Buonsignori, who painted nineteen maps between 1576 and 1586. An anonymous artist, probably a pupil of Buonsignori's, painted four more maps of the polar regions.¹⁰³ Vasari saw in this “invention” an application of experimental cosmography: “This fanciful invention came from

95. The bibliography on the subject is extensive. See the following standard general works: Julius Ritter von Schlosser, *Die Kunst- und Wunderkammern der Spätrenaissance: Ein Beitrag zur Geschichte des Sammelwesens* (Leipzig: Klinkhardt and Biermann, 1908), in Italian, *Raccolte d'arte e di meraviglie del tardo Rinascimento*, trans. Paola Di Paolo (Florence: Sansoni, 1974); Adalgisa Lugli, *Naturalia et Mirabilia: Il collezionismo enciclopedico nelle Wunderkammern d'Europa* (Milan: G. Mazzotta, 1983), in French (and expanded), *Naturalia et Mirabilia: Les cabinets de curiosités en Europe*, trans. Marie-Louise Lentengre (Paris: A. Biro, 1998); and *Origins of Museums*. For a synoptic view, see Giuseppe Olmi, “Théâtres du monde, les collections européennes des XVI^e et XVII^e siècles,” in *Tous les savoirs*, 272–77.

96. Krzysztof Pomian, *Collectionneurs, amateurs et curieux: Paris, Venise, XVI^e–XVIII^e siècle* (Paris: Gallimard, 1987), in English, *Collectors and Curiosities: Paris and Venice, 1500–1800*, trans. Elizabeth Wiles-Portier (Cambridge, Eng.: Polity Press, 1990). See also Krzysztof Pomian, *Des saintes reliques à l'art moderne: Venise-Chicago, XIII^e–XX^e siècle* (Paris: Gallimard, 2003).

97. Merchants, and Giuseppe Olmi, “Science-Honour-Metaphor: Italian Cabinets of the Sixteenth and Seventeenth Centuries,” in *Origins of Museums*, 5–16.

98. See Alain Schnapp, *La Conquête du passé: Aux origines de l'archéologie* (Paris: Éditions Carré, 1993), 205. For a historical typology of collecting, see Pomian, *Des saintes reliques*, 333–55.

99. Laura Laurencich Minelli, “Museography and Ethnographical Collections in Bologna during the Sixteenth and Seventeenth Centuries,” in *Origins of Museums*, 17–23, esp. 19.

100. See Jodoco Del Badia, *Egnazio Danti: Cosmografo e Matematico e le sue opere in Firenze* (Florence: M. Cellini, 1881), and Egnazio Danti, *Le tavole geografiche della Guardaroba Medicea di Palazzo Vecchio in Firenze*, ed. Gemmarosa Levi-Donati (Perugia: Benucci, 1995).

101. “His Excellency, under the direction of Vasari, has built a new hall of some size . . . ; and this he has furnished all around with presses seven braccia high, with rich carvings of walnut-wood, in order to deposit in them the most important, precious, and beautiful things that he possesses.” See Giorgio Vasari, *Lives of the Most Eminent Painters, Sculptors & Architects*, 10 vols., trans. Gaston du C. de Vere (London: Macmillan and Warner, Publishers to the Medici Society, 1912–15), 10:28.

102. Vasari, *Lives*, 10:28.

103. Ettore Allegri and Alessandro Cecchi, *Palazzo Vecchio e i Medici: Guida storica* (Florence: Studio per Edizioni Scelte, 1980), 309–12.

Duke Cosimo, who wished to put together once and for all these things both of heaven and of earth, absolutely exact and without errors, so that it might be possible to see and measure them separately and all together, according to the pleasure of those who delight in this most beautiful profession and study it.”¹⁰⁴

The map collection in the Guardaroba Nuova is an unusual encyclopedic construct combining features of the allegorical *studiolo* and the pre-scientific cabinet of curiosities.¹⁰⁵ The Guardaroba Nuova initiated the mural map cycles of the Italian Renaissance, but it differs from the others in that it combines a collection of objects with a virtual cosmographic “theater” or, more specifically, the cartographic version of such a theater, namely a hall of cosmography.¹⁰⁶ Those sublime places of meditation call to mind the Neoplatonic literature of initiation into knowledge through mystical revelation, and they are relevant to our subject because maps were one of their most direct applications.¹⁰⁷

The Platonic idea of the existence of a single truth—unique, global, and at the same time accessible to the human intellect—is one of the central tenets of Renaissance modernism. Its applications are numerous, extending into the fields of philosophy, the arts, literature, and science. This intellectual atmosphere influenced the way in which maps were used. The possession and display of cosmographic maps became widespread in Italy (especially in Venice) in the sixteenth century. There is evidence that maps covering a wide thematic range, but mostly maps of the world and of the heavenly bodies, were displayed not only in the ducal palaces and the aristocrats’ *palazzi* but also in the homes of people with limited education and money, even lowly artisans. Recent research on the possession and display of maps in Italy (and also in the Venetian Levantine possessions) has brought to light many instances in which aristocrats, churchmen, and middle-class citizens decorated their porticoes, drawing rooms, and studies with globes and world maps in the sixteenth and early seventeenth centuries.¹⁰⁸

In England, cosmographic decorations seem to have been fairly widely used at public festivities. Geographical and celestial maps and cosmographic motifs such as the four elements or the signs of the zodiac were painted on the ceilings of temporary structures erected for banquets or festivals commemorating important events. For the celebrations following the signing of a peace treaty between England and France in 1527, Hans Holbein the Younger painted two maps with scenes of glorious battles, and the astronomer royal contributed a drawing of “the hole earth environed with the sea” on the ceiling.¹⁰⁹

In the Netherlands, cartography served similar purposes; the educated elite were not out of touch with the humanistic tradition and the Christian Neostoic views that went with it.¹¹⁰ Dutch merchants and commercial

magnates were more interested in the practical aspects of the subjects covered by the maps, but the intellectuals of the Low Countries appear to have been keen seekers after polymathy and to have used and propagated its symbols.¹¹¹ Amsterdam’s city hall and even some private houses had marble floors with mosaic maps of the world, while terrestrial and celestial globes were placed as ornaments in the porticoes of the grander houses (as in Venice). One distinctive feature of cartographic decoration in the Low Countries, as one might expect, was a preference for maps of Holland or the Seven United Provinces, which reflects the widespread preoccupation with the complex territorial disputes in the region.

Studios, cabinets of curiosities, and *Kunstkammern* were often decorated with allegorical cosmographic scenes.¹¹² In conception, these scenes retained their connection with the Neoplatonic symbolism of cosmography, called to mind by the ubiquitous and conspicuous presence of celestial and terrestrial globes, but they represent a more realistic attempt to acquire knowledge.¹¹³ Maps were now integrated into the collection instead of being the central theme and exhibit, as they had been in Cosimo

104. Vasari, *Lives*, 10:29–30.

105. Almagià, *Monumenta cartografica Vaticana*, vol. 3. On the *studiolo* and its architecture, decoration, and functions, see Wolfgang Liebenwein, *Studiolo: Storia e tipologia di uno spazio culturale*, ed. Claudia Cieri Via (Modena: Panini, 1988).

106. See chapter 32 in this volume; Schulz, “Maps as Metaphors”; and Francesca Fiorani, “Post-Tridentine ‘Geographia Sacra’: The Galleria delle Carte Geografiche in the Vatican Palace,” *Imago Mundi* 48 (1996): 124–48.

107. One of the most typical examples of this kind of literature is Francesco Colonna, *Hypnerotomachia poliphili*, first published in Venice in 1499.

108. See Isabella Palumbo-Fossati, “L’Interno della casa dell’artigiano e dell’artista nella Venezia del Cinquecento,” *Studi Veneziani* 8 (1984): 109–53; Federica Ambrosini, “‘Descrittioni del mondo’ nelle case venete dei secoli XVI e XVII,” *Archivio Veneto*, ser. 5, 117 (1981): 67–79; and Woodward, *Maps as Prints*, 80–84. On the map collection and display in sixteenth-century Crete, see Stephanos Kakkamanis, “Η χαρτογράφηση του τόπου και των συνειδήσεων στην Κρήτη κατά την περίοδο της Βενετοκρατίας” in *Candia/Creta/Kρήτη* (Athens: Cultural Foundation of the National Bank of Greece, 2005), 47–49.

109. Barber, “England I,” 30, and Sydney Anglo, *Spectacle, Pageantry, and Early Tudor Policy* (Oxford: Clarendon, 1969), 211–24.

110. See the interestingly original study by Giorgio Mangani, *Il “mondo” di Abramo Ortelio: Misticismo, geografia e collezionismo nel Rinascimento dei Paesi Bassi* (Modena: Franco Cosimo Panini, 1998).

111. On the practical aspects of Dutch mapping, see K. Zandvliet, *Mapping for Money: Maps, Plans and Topographical Paintings and Their Role in Dutch Overseas Expansion during the 16th and 17th Centuries* (Amsterdam: Batavian Lion International, 1998).

112. See Thomas DaCosta Kaufmann, *The Mastery of Nature: Aspects of Art, Science, and Humanism in the Renaissance* (Princeton: Princeton University Press, 1993), 174–96, esp. 181–84.

113. Globes are frequently seen in pictorial representations of cabinets of curiosities. See, for example, the study by S. Speth-Holterhoff, *Les peintres flamands de cabinets d’amateurs au XVII^e siècle* (Brussels: Elsevier, 1957). Maps and atlases, as well as terrestrial and celestial

I de' Medici's Guardaroba Nuova, which in this respect was an exceptional case. Earlier studies examined the collections of the dukes of Brunswick-Lüneburg at Wolfenbüttel, the *Kunstammer* of Saxony, and the maps collected by August I, elector of Saxony, and August II of Poland (Augustus the Strong), the founder of an early map room in 1701. These studies linked the collecting of maps with the increased supply of printed maps.¹¹⁴ Recent research has uncovered a wealth of cartographic material in Cardinal Scipione Gonzaga's collection, the *Kunstammer* of the dukes of Bavaria in Munich, the collections of Archduke Ernst of Austria and Archduke Ferdinand II of Austria, the collection of Tommaso Rangone in Venice (which was open to the public), the *studiolo* of Ulisse Aldrovandi, and the Fugger collections.¹¹⁵

The cartographic material in the Munich *Kunstammer* appears to have been assembled for essentially encyclopedic purposes, though connected with the identity of the state. Much of the collection dealt with regions of Bavaria. On the floor were models of the five principal cities of Bavaria, made by the cabinetmaker Jakob Sandtner between 1568 and 1574. Next to them were the printing blocks of the Bavarian map by Philipp Apian (1568), a historic document of the great project of surveying the whole of Bavaria in detail. These exhibits were surrounded by the coats of arms of the country's great families, cities, towns, and monasteries.¹¹⁶

In princely collections, as in those belonging to state dignitaries, senior officers of the army or navy, and top colonial officials, maps reflect their owners' private and public interests in equal measure. This characteristic is most marked in the German states and the areas under Spanish rule, from the central Mediterranean to the Iberian Peninsula and the Low Countries.

Typical examples are seen in the princely collections of Saxony. An interest in cartography was considered proof of a ruler's excellence as an administrator. The collection of tools and instruments in August I's *Kunstammer* contained a large number of road maps and topographical plans, mostly of parts of Saxony. August took a keen personal interest in surveying. He ordered odometers and pedometers from Christoph Schissler, Thomas Ruckert, Christoph Trechsler, Ullrich Klieber, and the court engineer Valentine Than and made improvements to some of them himself. When he traveled in Saxony, he took his own topographical measurements and kept mathematical notes on matters relevant to surveying.¹¹⁷ Scientific instruments accounted for part of his collection (442 pieces, 4.5 percent of the total). The "mass of quadrants, spheres, globes, astronomical clocks, astrolabes, compasses, hour-glasses, geometry-sets and measuring instruments of all kinds, standing on tables," makes it clear that geodesy, astronomy, and astrology were among August's main interests.¹¹⁸

Evidence of technological and astrological interests is also seen in the collections of Rudolf II in Prague.¹¹⁹ While in Vienna from 1637 to 1642, Hans Melchior Volckmair, the court mathematician and goldsmith for the Holy Roman Empire, made a complete set of scientific instruments, including mathematical tables, proportional circles, maps, measuring instruments, and a sundial for the collection of Ferdinand III.¹²⁰ Similar purposes were served by the maps and surveying instruments in the collection of Don Diego Felipe de Guzmán, first marquis of Leganés, who was a general in the Spanish artillery. The contents of his collection were apparently used as educational aids as well: "The multitude of rich escritiores and buffets, extraordinary clocks and singular mirrors, the globes, spheres, mathematical and geometrical instruments skilfully arranged on large tables, all serving for the instruction of young men in mathematics and artillery."¹²¹

globes, are seen in only two paintings by François Francken II: *Un cabinet d'amateur* in Madrid, Prado (pl. 11), and *Les Archiducs Albert et Isabelle dans un cabinet d'amateur* in Baltimore, Walters Art Gallery (pl. 12). It is worth mentioning that the illustrations in both these paintings depict the same collection; the only difference between them is in the composition of the visitors. Only terrestrial and celestial globes are seen in the pictures of the other collections.

114. Skelton, *Maps*, 41 and 46, and Viktor Hantzsch, ed., *Die Landkartenbestände der Königlichen öffentlichen Bibliothek zu Dresden: Nebst Bemerkungen über Einrichtung und Verwaltung von Kartensammlungen* (Leipzig: O. Harrassowitz, 1904), 3–27.

115. See Woodward, *Maps as Prints*, 88–93; Michael Bury, "The Taste for Prints in Italy to c. 1600," *Print Quarterly* 2 (1985): 12–26; Peter W. Parshall, "The Print Collection of Ferdinand, Archduke of Tyrol," *Jahrbuch der Kunsthistorischen Sammlungen in Wien* 78 (1982): 139–84, esp. 180–81; Giovanni Astegiano, "Su la vita e le opere di Tommaso da Ravenna," *Bollettino del Museo Civico di Padova* 18 (1925): 49–70 and 236–60; Cristiana Scappini, Maria Pia Torricelli, and Sandra Tugnoli Pattaro, *Lo studio Aldrovandi in Palazzo Pubblico (1617–1742)* (Bologna: CLUEB, 1993); and Eva Schulz, "Notes on the History of Collecting and of Museums in the Light of Selected Literature of the Sixteenth to the Eighteenth Century," *Journal of the History of Collections* 2 (1990): 205–18.

116. Lorenz Seelig, "The Munich *Kunstammer*, 1565–1807," in *Origins of Museums*, 76–89, esp. 83–84.

117. See Bruce T. Moran, "Science at the Court of Hesse-Kassel: Informal Communication, Collaboration and the Role of the Prince-Practitioner in the Sixteenth Century" (Ph.D. diss., UCLA, 1978), 194–95.

118. Joachim Menzhausen, "Elector Augustus's *Kunstammer*: An Analysis of the Inventory of 1587," in *Origins of Museums*, 69–75, esp. 71–72.

119. Eliška Fučíková, "The Collection of Rudolf II at Prague: Cabinet of Curiosities or Scientific Museum?" in *Origins of Museums*, 47–53, esp. 49.

120. Rudolf Distelberger, "The Habsburg Collections in Vienna during the Seventeenth Century," in *Origins of Museums*, 39–46, esp. 45 n. 29.

121. According to Vicente Carducho, *Diálogos de la pintura*, 1633; quoted in Ronald Lightbown, "Some Notes on Spanish Baroque Collectors," in *Origins of Museums*, 136–46, esp. 137.

The private, cognitive character of maps displayed in collections of prints and paintings is more pronounced, even when the collections belonged to princes. A typical case in point is the print collection of Philip II of Spain in the Escorial. Although the Spanish crown possessed important maps, Philip II's print collection contains only a few maps. Nevertheless, this collection is of interest because it testifies to the role of maps in the formation of an art collection with an antiquarian slant. Maps are included at the beginning and end of albums of pictures illustrating the archaeological topography of Rome and other cities in Italy.

Among the last-formed collections in the period under examination are those of the Barberini family, which were concentrated mainly on antiquities and the fine arts. The various inventories of the Barberini collections cover the first half of the seventeenth century. Maps are listed in the 1623 inventory of Cardinal Maffeo Barberini's collection, which was compiled immediately after his election to the papacy and before his enthronement. The purpose of the inventory was to describe in detail the real and movable property that the new pope's brother, Carlo Barberini, would inherit in the event of his death. It lists some seventy geographical and topical maps, an atlas by Ortelius, and views of cities and towns, several of which were colored and framed. All of these occupy a section in the inventory.¹²² The inventories of Cardinal Francesco Barberini's collection, one of the most important collections of antiquities and works of art of the early seventeenth century, make it clear that art lovers were extending their passion for collecting to maps. From the inventories for the years 1626–36, which reveal a steadily growing collection, we learn that the initial total of 45 maps (1626–31) rose to 130 in the years 1631–36.¹²³ Outstanding among Francesco Barberini's maps are the topographical plans, the regional maps of European countries with an emphasis on the Catholic territories (Italy, Spain, France, the Low Countries, and Ireland), several large wall maps, and some regional atlases. It is interesting to see how the maps of a country were placed next to (and sometimes intermingled with) portraits and family trees of the country's rulers.

The variability of classification systems during the period is more noticeable in collections than in libraries. This can be attributed in part to the wide range of objects and the personal character of most collections, which reflect the interests of each individual collector, but it is also because the practice of collecting was something quite new. Collectors did not have the well-tried classification system that bibliophiles had in their libraries.

The earliest text containing proposals for the organization and running of collections—the earliest handbook of museology, in fact—is the *Inscriptiones vel tituli theatri amplissimi* by Samuel Quicchelberg, a sixty-five-page

booklet published in 1565.¹²⁴ This commended itself to readers as a guide to the major existing collections in Germany and Italy and, at the same time, as a manual for the formation and organization of new collections.

Quicchelberg, a physician from Antwerp, was the librarian to Johann Jakob Fugger. He may well have been attracted to librarianship by the collections that Duke Albrecht V of Bavaria had built up between 1563 and 1567, when Quicchelberg was the duke's personal physician. His *Inscriptiones* amounted to a proposal for a comprehensive classification system for a broad-based collection divided into categories and subcategories, such as a library and a print collection, with the latter treated as a visual microcosm of the world and at the same time as a tool for the pursuit of empirical knowledge.¹²⁵

The objects in the collection were divided into five categories, each of which was subdivided into ten or eleven subgroups. Maps were put into two of the five categories: category 1, which comprised objects of personal relevance to the collector and his family history, and category 5, to some extent a duplication of category 1, which covered the various ways the exhibits could be used for a better understanding of the world.¹²⁶ In both cases, maps were connected with history and the pictorial mementos of history, such as portraits, family trees, coats of arms, and heraldic devices.

Quicchelberg's system left the situation as chaotic as it had been before. Most collections were personal and had grown up gradually over the years, shaped by the collector's research and special interests, and their classification schemes had thus been worked out empirically.¹²⁷ Therefore, it is reasonable to suppose that the guidelines of

122. Marilyn Aronberg Lavin, *Seventeenth-Century Barberini Documents and Inventories of Art* (New York: New York University Press, 1975), 69–70.

123. Lavin, *Barberini Documents*, 84 and 119–24.

124. Samuel Quicchelberg, *Inscriptiones vel tituli theatri amplissimi, complectentis rerum universitatis singulas materias et imagines eximias . . .* (Munich: Adam Berg, 1565).

125. On Quicchelberg and his work, see Elizabeth M. Hajós, "The Concept of an Engravings Collection in the Year 1565: Quicchelberg, *Inscriptiones vel tituli theatri amplissimi*," *Art Bulletin* 40 (1958): 151–56, esp. 152–53; Schulz, "History of Collecting"; Horst Bredekamp, *La nostalgie de l'antique: Statues, machines et cabinets de curiosités*, trans. Nicole Casanova (Paris: Diderot, 1996), 37–40; and Bolzoni, *Gallery of Memory*, 236–44.

126. Woodward, *Maps as Prints*, 92. Horst Bredekamp's reading of category 5 is different from that of Hajós. Quicchelberg's system is muddled, but his method of arranging the collection seems to treat the collector, his family history, and his environment as a microcosm of the world. This would explain the duplications and the relationships between categories 1 and 5.

127. Laura Laurencich Minelli, "L'indice del Museo Giganti: Interessi etnografici e ordinamento di un museo Cinquecentesco," *Museologia Scientifica* 1, nos. 3–4 (1984): 191–242.

Quicchelberg's *Inscriptiones* were not adopted or followed in detail by all collectors. Probably most of his recommendations were followed mainly in collections where there was a curator in charge (those of princes and of private citizens who aped their rulers in the hope of gaining enhanced social status and prestige).¹²⁸ In those cases, the curator would be able to consult some kind of reference book to find justification for some of his decisions.

A simpler and more practical system for the formation and arrangement of an art collection was proposed by Gabriel Kaltemarckt to Elector Christian I of Saxony in 1587. Kaltemarckt's proposals were much more modest in their scope, referring only to the formation of a *Kunst-kammer*. Kaltemarckt provided a list of all the artists whose work should be represented in an art collection, from antiquity to modern times, arranged by nationality. At the end of his memorandum, he named forty engravers who "attained great fame," including several publishers of maps: Antonio Lafreri, Antonio Salamanca, Mario Cartaro, Martino Rota, and Johannes Sadeler.¹²⁹

In the late sixteenth century, Abraham Ortelius's antiquarian collection¹³⁰ was the source for the publication of a new product, a systematic collection of modern standardized maps, an atlas in today's sense of the term. It was a slow process, lasting all of the fifteenth and most of the sixteenth century, involving the production of first manuscript copies and then printed editions of Ptolemy's *Geography* (with the addition of maps incorporating the new discoveries), manuscript portolan atlases, and some of the *isolarii*, especially those of Henricus Martellus Germanus (ca. 1490), Benedetto Bordone (1528), and Alonso de Santa Cruz (1545). In the mid-1560s, the process entered a phase of greater maturity. It was then that the composite Italian atlases of the Lafreri type appeared, produced in Rome in response to orders from clients. They were succeeded by Ortelius's collection of maps.¹³¹ Ortelius, a collector and antiquarian as well as a cartographer, possessed most of the attributes of the cultural atmosphere that we are studying. In 1570, he printed his *Theatrum orbis terrarum*, a collection of maps engraved by Frans Hogenberg, citing the eighty-seven cartographers who had drawn them.¹³² All the maps were selected from Ortelius's own extensive map collection.

FUNCTIONS AND USES OF CARTOGRAPHIC MATERIAL

SYMBOLIC FUNCTIONS

Harley sees state interest as the driving force behind the formation of map collections.¹³³ There is undeniably abundant evidence to confirm that the possession of maps in substantial numbers—in other words, the collecting of maps—has been connected with the public interest ever

since the Renaissance; cases in point include the collection of maps in the Casa de la Contratación in Spain¹³⁴ and the Portuguese hydrographic service (Armazém) founded before the end of the fifteenth century;¹³⁵ the interest shown in maps by international mercantile houses such as those of the Fuggers and the Welsers;¹³⁶ the projects initiated by Matthias Corvinus, king of Hungary;¹³⁷

128. See Mark A. Meadow, "Merchants and Marvels: Hans Jacob Fugger and the Origins of the Wunderkammer," in *Merchants*, 182–200.

129. See Barbara Gutfleisch and Joachim Menzhausen, "How a Kunst-kammer Should Be Formed: Gabriel Kaltemarckt's Advice to Christian I of Saxony on the Formation of an Art Collection, 1587," *Journal of the History of Collections* 1 (1989): 3–32.

130. On Ortelius, his antiquarian interests, his collections, and his work, see the multiauthor volume *Ortelius*. Also of interest is the study by Mangani, *Il "mondo" di Abramo Ortelio*, which illuminates the decisive role played by mystical and political factors in the Low Countries in the closing decades of the sixteenth century. See also Tine Meganck, "Erudite Eyes: Artists and Antiquarians in the Circle of Abraham Ortelius (1527–1598)" (Ph.D. diss., Princeton University, 2003).

131. See James R. Akerman, "On the Shoulders of Titan: Viewing the World of the Past in Atlas Structure" (Ph.D. diss., Pennsylvania State University, 1991); Hosam Elkhadem, "La naissance d'un concept: Le *Theatrum orbis terrarum* d'Ortelius," in *Ortelius*, 31–42; David Woodward, "Italian Composite Atlases of the Sixteenth Century," in *Images of the World: The Atlas through History*, ed. John Amadeus Wolter and Ronald E. Grim (New York: McGraw-Hill, 1997), 51–70; and chapter 31 in this volume, especially appendix 31.2.

132. The *Theatrum orbis terrarum* contained 53 maps in the 1570 edition, 64 in the Latin edition of 1571 and 67 in the Dutch edition of the same year, 70 maps in the 1573 edition, 108 in 1592, 115 in 1595, and 167 in 1612. For a detailed bibliographical description of the *Theatrum orbis terrarum*, see M. P. R. van den Broecke, *Ortelius Atlas Maps: An Illustrated Guide* ('t Goy-Houten: HES, 1996). For the editions of the *Theatrum*, see Peter van der Krogt, "The Editions of Ortelius' *Theatrum Orbis Terrarum* and *Epitome*," in *Abraham Ortelius and the First Atlas: Essays Commemorating the Quadricentennial of His Death, 1598–1998*, ed. M. P. R. van den Broecke, Peter van der Krogt, and Peter H. Meurer ('t Goy-Houten: HES, 1998), 379–81. For the list of cartographers, see Karrow, *Mapmakers of the Sixteenth Century*.

133. "Most map libraries owed their birth and development to the working copies of *contemporary* maps assembled as the political and military tools of statecraft, as raw materials in cartographers' workshops, as records of national exploration and discovery, as the working documents of trade and colonization, as specimens of graphic art, or in the case of astronomical maps, for the practice of astrology" (Harley, "Development of the History of Cartography," 8).

134. See Ricardo Cerezo Martínez, *La cartografía náutica española en los siglos XIV, XV, y XVI* (Madrid: C.S.I.C., 1994), and Alison Sandman, "Mirroring the World: Sea Charts, Navigation, and Territorial Claims in Sixteenth-Century Spain," in *Merchants*, 83–108.

135. See A. Teixeira da Mota, "Some Notes on the Organization of the Hydrographical Services in Portugal before the Beginning of the Nineteenth Century," *Imago Mundi* 28 (1976): 51–60.

136. On the maps collected at Augsburg, see Skelton, *Maps*, 41–42.

137. The Ottoman Turks looted the collections built up by Matthias Corvinus, so we have no clear idea of the number or quality of maps he had in his possession. He is known to have collected Venetian portolan charts and to have given a post at his court to Francesco Rosselli,

and similar projects launched by the Tudor, Valois, and Habsburg monarchs.¹³⁸

Nevertheless, the functions of the cartographic material in princely libraries and collections have to be considered with circumspection.¹³⁹ Princely collecting should not always be identified with the behavior of bibliophiles and collectors, for it is related to the processes of patronage and, at the same time, reflects the monarch's private interests and public concerns. Although the interest of rulers in maps of the new discoveries and in land-surveying techniques does suggest that, besides curiosity, they had state economic and strategic considerations in mind, the available evidence does not support the hypothesis that rulers used maps as tools of statecraft before the early sixteenth century.¹⁴⁰

Furthermore, the fact that a map served a public purpose does not necessarily mean that it was in public use, for anything that might be of service to the state was often kept secret and its use restricted.¹⁴¹ This accounts for the fairly numerous known instances of cartographic espionage.¹⁴² In scholarly circles, on the other hand, maps were generally put to collective use, as was the case with most learned activities during the period under consideration: correspondence between scholars of the period 1450–1650 attests to a keen interest in maps. Numerous such letters survive, showing that scholars closely followed current developments in that field. In learned milieus, ideas, information, and material were freely shared among those interested in the subject.

When the public uses of maps were in their infancy, private and semiprivate uses were predominant.¹⁴³ In the late Renaissance, the cartographer and publisher Floris Balthasarsz. of Delft produced regional maps (1609 and 1611) with inset texts describing their uses. The uses mentioned by Dee are given first: maps promote knowledge, train the memory, provide a basis for the perception of history, and help people to plan journeys and to understand the nature of the universe. Floris Balthasarsz. also listed some of the ways in which maps could be useful to state administration, such as in compiling land registers and collecting taxes, in commerce, and in public works.¹⁴⁴ Certainly something had changed in the public perception of the uses of maps, inasmuch as Floris Balthasarsz. mentioned capacities in which maps could serve as tools of statecraft. However, scholarly uses are still listed first and are more numerous: studying the present and the past, offering guidance for travelers, and providing edification.

The social function of displaying maps is not negligible. The display of maps was intended to enhance their owners' status and prestige: to draw attention to their cosmopolitanism, their patriotism, their humanistic and antiquarian interests, their affluence, their connections with colonial trade, and their familiarity with modern tech-

nologies and the latest geographical knowledge.¹⁴⁵ At the same time, the display of globes, celestial maps, and world maps was intended to suggest movement into the high-brow circles of scholarship and involvement on the exalted plane of Neoplatonic ideas, with access to absolute knowledge.

The social, symbolic function of map display had an impact on the artistic quality and material value of maps. Princes, high officials, and dignitaries, as well as those who surrounded them or were trying to imitate them, often possessed and displayed valuable maps. Maps found their place in collections (if they were not made for that purpose from the outset) owing to their artistic merit and their excellent workmanship.¹⁴⁶ Maps lavishly painted on wood or woven on silk tapestries were often commissioned and presented to rulers and high officials.¹⁴⁷ Sumptuous sixteenth- and seventeenth-century portolan atlases were intended primarily for bibliophiles and collectors when they were not specifically ordered for a princely collection, as in the case of Lopo Homem's portolan atlas

who drew a considerable number of maps and charts while in residence there. See Florio Banfi, *Gli albori della cartografia in Ungheria: Francesco Rosselli alla corte di Mattia Corvino* (Rome: Accademia d'Ungheria, 1947).

138. *Monarchs, Ministers, and Maps*.

139. On the differing roles of the prince, the patron of literature and art, and the collector in the Renaissance, see Antoine Schnapper, "The King of France as Collector in the Seventeenth Century," *Journal of Interdisciplinary History* 17 (1986): 185–202.

140. David Buisseret, "Introduction," in *Monarchs, Ministers, and Maps*, 1–4, and Monique Pelletier, *Cartographie de la France et du monde de la Renaissance au siècle des Lumières* (Paris: Bibliothèque Nationale de France, 2001), 45–47.

141. See J. B. Harley, "Silences and Secrecy: The Hidden Agenda of Cartography in Early Modern Europe," *Imago Mundi* 40 (1988): 57–76.

142. See, for example, the accounts of the missions sent to Florence and the Iberian peninsula by Dukes Borso and Ercole d'Este of Ferrara in search of secret maps relating to the discovery of new intercontinental sea routes, in Henry Harrisse, *Les Corte-Real et leurs voyages au Nouveau-monde* (Paris: E. Leroux, 1883), 69–158. See also the information about the measures taken by the Portuguese government to stamp out the illegal export of maps, in Teixeira da Mota, "Hydrographical Services in Portugal."

143. See chapter 26 in this volume.

144. See K. Zandvliet, "Kartografie, Prins Maurits en de Van Berckenrodes," in *Prins Maurits' kaart van Rijnland en omliggend gebied door Floris Balthasar en zijn zoon Balthasar Florisz. van Berckenrode in 1614 getekend*, ed. K. Zandvliet (Alphen aan den Rijn: Caneletto, 1989), 20–21.

145. Woodward, *Maps as Prints*, 85, and Zandvliet, *Mapping for Money*, 210–12.

146. See Helen Wallis, "Sixteenth-Century Maritime Manuscript Atlases for Special Presentation," in *Images of the World: The Atlas through History*, ed. John Amadeus Wolter and Ronald E. Grim (New York: McGraw-Hill, 1997), 3–29.

147. See Hilary L. Turner, "The Sheldon Tapestry Maps: Their Content and Context," *Cartographic Journal* 40 (2003): 39–49.

commissioned by King Manuel I of Portugal, which ended up in Catherine de' Medici's collection, or Francesco Ghisolfi's atlas ordered by a member of the Grifoni family as a gift for Francesco de' Medici.¹⁴⁸ Maps, atlases, and globes were also acquired for princely collections and *Wunderkammern* owing to the high quality of their materials: for instance, the sumptuously illustrated copies of Ptolemy's *Geography* made on parchment and using precious materials such as gold or lapis lazuli. Other maps were presented and collected because of their eccentricity: there were colossal atlases that had wall maps bound into them, such as the one presented by Johan Maurits van Nassau to Friedrich Wilhelm, elector of Brandenburg, about 1660, or the one known as the "Klencke Atlas," presented by Amsterdam merchants to Charles II of England in 1660.¹⁴⁹ Maps were also of interest because of the rarity of the materials of which they were made, such as those engraved on wood, bone, or metal.¹⁵⁰ These cases are numerous, for maps were part of the Renaissance market for luxury commodities. Their owners possessed and displayed them to draw attention to their social excellence and distinction.¹⁵¹

An equivalent symbolic political function was at work in the combination of contemporary topographical plans or geographical maps with genealogical tables. This is a relatively common practice in the context of a feudal society. Territorial supremacy and genealogy are interrelated, for lineage determines the succession and legitimizes the ruler's sovereignty. Some maps of specific areas—a hereditary landowner's estates or a hereditary ruler's territories—bore the family tree of the magnate or ruler in question. For example, the map of Denmark in Lord Burghley's Ortelius atlas has the genealogical table of the Danish royal family, and the map of Northamptonshire in his Saxton atlas has the family trees of all the great local families.¹⁵²

In Quicchelberg's classification system, the section dedicated to the collector includes maps and plans of the area that the collector comes from or owns, as well as family trees relevant to him or his home territory. The same classification system was evidently applicable in cases other than those directly connected with the collector's place of origin, as evidenced by the arrangement of the material in the catalog of Francesco Barberini's collections, where royal family trees were listed together with regional maps of European countries.¹⁵³

USES IN HISTORIOGRAPHY

Whereas the connection between places and their hereditary owners needs no explanation, the same cannot be said of the inclusion of cartography and geography in the history sections of both libraries and collections of the Renaissance and of the resulting use of maps as historical

tools. This was not only a common practice, but also a theoretical position of the Renaissance. In 1545, Peter Apian stipulated that the study of geography was essential for students of historical biography, and in 1570, we find the dictum "Geography is the eye of history" in the opening lines of Abraham Ortelius's *Theatrum orbis terrarum*.¹⁵⁴ This well-worn cliché, repeated in one form or another down to the present day, takes as its premise that geographical space is the theater of human actions.¹⁵⁵

The fusion of geography with history goes back a long way. The reconstructions of human experience of space and time were somehow interrelated in the minds of contemporary observers, or at least the evidence points in that direction. One example is the cosmographic and cognitive "theater" set up by Cosimo I de' Medici in the Guardaroba Nuova of the Palazzo Vecchio, which also made sense as a hall of experimental history that presented a conspectus of important historical events and their natural settings, as well as the cosmological forces governing them. When Ferdinand de' Medici, Francesco's successor, asked about those of his predecessors' projects that were still in progress, the Guardaroba Nuova was described as follows by Antonio Lupicini, a mathematician and engineer involved in the revision of the calendar:

The fifth [project of Cosimo] was the construction of a hall of illusions; in each part of this device it would be possible to see all the most famous deeds of Alexander the Great, Julius Caesar, and other valiant war-

148. Homem's atlas, known as the Miller Atlas, is now in the BNF, Cartes et Plans (Réf. Ge D 26179, DD 583, and AA 640). Ghisolfi's atlas bears the cosmographic dedication "To you, Francesco, ornament of the world, we offer the world"; it is in Florence, Biblioteca Riccardiana (Ricc. 3616).

149. Friedrich Wilhelm's atlas is in Berlin, Staatsbibliothek (see fig. 44.33). The Klencke Atlas is in the BL. A third colossal atlas, ordered from the Netherlands by Christian I, Duke of Mecklenburg, is in Rostock, Universitätsbibliothek.

150. On the hemispherical silver globes that became terrestrial or cosmographic globes when their lids were put on, see Monique de La Roncière and Michel Mollat du Jourdin, *Les portulans: Cartes marines du XIII^e au XVII^e siècle* (Fribourg: Office du Livre, 1984), 22, and chapter 6 in this volume, especially figures 6.8 and 6.12.

151. Jardine, *Worldly Goods*.

152. See Peter Barber, "England II: Monarchs, Ministers, and Maps, 1550–1625," in *Monarchs, Ministers, and Maps*, 57–98, esp. 76.

153. On Quicchelberg's proposed classification system and the Barberini collections, see the discussion earlier in this chapter, especially notes 122–25.

154. Peter Apian, *Cosmographia* (Antwerp: Gregorio Bontio, 1545), introduction, and Abraham Ortelius, *Theatrum orbis terrarum* (Antwerp, 1570), 1. The motto "historiae oculus geographia" also appears on the title page of Ortelius's *Parergon* (1592).

155. See, for example, Joan Blaeu's introduction to his *Le grand atlas* (Amsterdam, 1663), and also Conrad Malte-Brun, *Géographie universelle de Malte-Brun: Revue, rectifiée et complètement mise au niveau de l'état actuel des connaissances géographiques*, 8 vols. (Paris: Legrand, Troussel et Pomey, Libraires-Éditeurs, [1864?]), 1:12.

riors, together with the fall of Troy and Carthage and other similar acts of destruction; and underneath these stories would be displayed all types of terrestrial animals of each province and on the frieze of the architrave all the portraits of the most famous personages, most of them already completed at the present day. And on the pavement would be placed an area corresponding to the roof, in which there would be various moral tales. This is what the pictures are showing with an elegant taste, and the visitors would think that there is no more to be seen in this hall. Nevertheless, at a given point the same stories would disappear and the Cosmography of the entire construction would be revealed in the same order as demonstrated by Ptolemy: the vault would open to reveal the circular movement of the planets around two globes, a terrestrial and a celestial, each one measuring three and a half *bracia* in diameter, which would emerge on a pedestal coming out of the pavement, of which Fra Egnatio painted only the one, which I am keeping myself.¹⁵⁶

History, with its didactic and moralistic function, was conceived as a “similitude” of cosmography, which was, after all, its functional foundation. Cosmography, as an amalgam of astronomy (or astrology?) and geography, proposed the classification system and methodological template of history. This view seems to have been widespread in the second half of the sixteenth century.

The connection between history and cosmography was the basis of Gerardus Mercator’s program, as manifested in the six stages of the plan for the overall project. This was a philosophical system that set out to describe and interpret the world from its creation to the writer’s own time, a system that embraces all Mercator’s activities and initiatives up to that time:

So, when I was thinking of describing the whole world, the structure and order of the project required that I should treat first of the creation of the world and the disposition of the parts of the whole; then the positions and movements of the heavenly bodies; third, their nature, their radiation and the interaction of their operations, to make the study of astrology more accurate; fourth, the elements; fifth, a description of the world and its regions; sixth, the genealogies of rulers from the beginning of the world, to the emigrations of peoples and the first habitations of the lands and the times of the discoveries and investigations of antiquity. For this is the natural order of things, which easily demonstrates the causes and origins of things and is the best guide to true knowledge and wisdom.¹⁵⁷

In this encyclopedic program of polymathy, maps and geographical knowledge represent one-sixth of the total and history another one-sixth. Mercator went on to compile and publish a chronology of the world and a revision of the chronology of the Gospel story,¹⁵⁸ and he saw his-

tory and cartography (which he aptly called Castor and Pollux) as two complementary roads leading to knowledge.

The desire to give history a universal scope and structure pervades the heritage of the great encyclopedic works of antiquity. The fusion of history with geography was the basis of Pliny’s methodology and of the compilations spawned by his work, from Gaius Julius Solinus’s *Polyhistor* to the compilation of Isidore of Seville and on through the Middle Ages.¹⁵⁹ Moreover, the reassessment of Strabo’s *Geography* suggested solutions in the same methodological line, for it resolved certain crucial problems facing fifteenth- and sixteenth-century historiographers, such as the problem of spatializing historical narrative and the problem of scale—in other words, the problems related to the geographical setting of events and the regional distribution of the material of history.¹⁶⁰ Thus the authors of universal history were led to a synthesis of history and geography.¹⁶¹ Enea Silvio de’ Piccolomini and Raffaele Maffei of Volterra, among others, advocated historiographic applications in which geography would not only provide the methodological and structural canvas of the composition but would also be one of the main subjects of the narrative.¹⁶² In the six-

156. Report made to Ferdinand de’ Medici by Antonio Lupicini, dated Florence, 27 October 1587; quoted in Del Badia, *Egnazio Danti*, 28–29.

157. Gerardus Mercator, *Galliae tabulae geographicae* (Duisburg, 1585), fol. 1.

158. Gerardus Mercator, *Chronologia: Hoc est, temporum demonstratio exactissima ab initio mundi usque ad annum Domini M.D.LXVIII . . .* (Cologne: Arnold Birckmann, 1569), and idem, *Evangelicae historiae quadripartita monas: Sive harmonia quatuor evangelistarum, in qua singuli integri, in confusi, impermixti & soli legi possunt, & rursus ex omnibus una universalis & continua historia ex tempore formari* (Duisburg, 1592).

159. Gaius Julius Solinus, *Collectanea rerum memorabilium*, ed. Theodor Mommsen (Berlin: Weidmann, 1895), and Isidore of Seville, *Traité de la nature*, ed. Jacques Fontaine (Bordeaux: Féret, 1960). For their influence on medieval cartography, see David Woodward, “Medieval *Mappaemundi*,” in *HC* 1:286–370, esp. 299–302.

160. On the role of Strabo’s *Geography*, see E. B. Fryde, *Humanism and Renaissance Historiography* (London: Hambledon, 1983), 55–82, and Germaine Aujac, *Strabon et la science de son temps* (Paris: Les Belles Lettres, 1966).

161. See the circumstantial study by Marie-Dominique Couzinet, *Histoire et méthode à la Renaissance: Une lecture de la Methodus ad facilem historiarum cognitionem de Jean Bodin* (Paris: J. Vrin, 1996), esp. 225–67 (“Le Statut de la Géographie dans le processus de Connaissance”).

162. The works of Raffaele Maffei of Volterra (*Commentariorum urbanorum XXXVIII libri*) and the historicogeographical works of Enea Silvio de’ Piccolomini were monumental compilations dealing with all regions and their history. Maffei’s book consists of a first volume of descriptive geography in the spirit of Strabo and the line of Ptolemy; a second volume on the lives and works of great men, in chronological order and in the spirit of Plutarch; and a third volume devoted to the “arts,” which is essentially a detailed exposition of natural history in the

teenth century, the final linkage between geography and universal history found its fullest expression in Sebastian Münster's *Cosmography* (1544).

This linkage became established with much discussion and argument.¹⁶³ The year 1561 saw the publication of *De institutione historiae universae* by François Baudouin.¹⁶⁴ Here Baudouin discussed the main methodological questions that distinguish history from geography and set out to redefine the universal character of world history (fullness of extent and integrity of subject matter). In this work, he acknowledged the exemplary and methodological value of "world geography," that is to say cosmography, but he rejected the subordination of history to geography.¹⁶⁵ Another theorist of historiography, perhaps one of the most important in the sixteenth century, was Jean Bodin, who aimed to organize history on the principles of modern methodology.¹⁶⁶ Bodin, who had studied under Ramus, likewise considered cosmography and its global approach central.¹⁶⁷ He noted the frequent concurrence of historiographic and geographic discourse, included books by "historio-cosmographers" among the sourcebooks and textbooks of historiography, and stressed the logic of arranging historical material by climatic zones.¹⁶⁸

The debate on the models and methods of historiography in the sixteenth century is an interesting field of study and has attracted the attention of modern scholars.¹⁶⁹ What we have to keep in mind is the peculiar role of maps that resulted from these theoretical processes. Geography and history are two narrative and mnemonic arts that are both expressed in images, and the map, as a synoptic representation of space, was an example of concise, structured description. Bodin, following the model of geographical "tables" (*tabulae*), put forward the idea of compiling chronological tables and using the two in combination for a fuller understanding of history.¹⁷⁰ Arnold Mermann, too, in a chronological survey of the spread of Christianity in all parts of the world, advocated the use of a chronological table similar to a geographical table: "a table [*tabula*] from which (just as from a geographical map one can discern the provinces, cities, citadels, rivers, and the like) each can find out for certain in which period, by which apostles or apostolic men, finally under which popes and under which emperors or kings or princes each province and people came to the Christian religion."¹⁷¹

A map, an ideal example of a clear, systematic, complete, and detailed way of presenting data, serves as a résumé and at the same time as a mnemonic aid. Sebastian Münster would have agreed on this point, for he included maps in his historical and geographical digest, convinced of their great efficacy as aids to the memory.¹⁷²

According to Renaissance theorists, maps are a key to the interpretation of history: they provide the framework

of historical events and at the same time demonstrate their scale. They are also reliable, thanks to their mathematical construction, and consequently they enable their users to check the accuracy of historical accounts. As Baudouin put it, "In cosmography, geography, or chorography we have never made mistakes so easily as in chronology, so vividly is everything expressed on the maps."¹⁷³

In Baudouin's words, maps present facts "sur le vif," and John Dee said that maps illustrate geography in a "lively" way. This is one of their chief merits. Abraham Ortelius, too, in his preface to the *Theatrum orbis terrarum*, affirmed the ability of a map to bring history to life visually: "The reading of *histories* doeth both seeme to be much more pleasant, and indeed so it is, when the

spirit of Pliny. On Piccolomini, see Nicola Casella, "Pio II tra geografia e storia: La 'Cosmografia,'" *Archivio della Società Romana di Storia Patria* 95 (1972): 35–112.

163. See Jean-Marc Mandioso, "L'histoire dans les classifications des sciences et des arts à la Renaissance," in *Philosophies de l'histoire à la Renaissance*, ed. Philippe Desan (Paris: Corpus des Oeuvres de Philosophie en Langue Française, 1995), 43–72.

164. François Baudouin, *De institutione historiae universae* (Paris: Wechelum, 1561). On Baudouin and his historical writings, see Donald R. Kelley, "Historia Integra: François Baudouin and His Conception of History," *Journal of the History of Ideas* 25 (1964): 35–57, and idem, *Foundations of Modern Historical Scholarship: Language, Law, and History in the French Renaissance* (New York: Columbia University Press, 1970), 116–48.

165. He refers to Plutarch, who had arrived at the same conclusion; see Plutarch, *Vies, tome 1, Thésée, Romulus, Lycurgue, Numa*, 3d ed., rev. and corr., ed. and trans. Robert Flacelière, Emile Chambry, and Marcel Juneaux (Paris: Les Belles Lettres, 1993).

166. Jean Bodin, *Methodus ad facilem historiarum cognitionem* (Paris: Martin le Jeune, 1572), in French, *La méthode de l'histoire*, trans. Pierre Mesnard (Paris: Les Belles Lettres, 1941).

167. Ramus, *Dialectique*, 145–46, and Bodin, *La méthode*, 287–99.

168. See Bodin's list of historians (*La méthode*, 369–87). Those he classifies as "historio-cosmographers" are Strabo, Pomponius Mela, Pausanias, Raffaele Maffei, and Sebastian Münster. In this historical bibliography, he also lists most of the antiquarians of the fifteenth and sixteenth centuries and a group of "sundry historians" (*historici rerum variarum*), including Athenaeus, Aelian, John Tzetzes, Laonicus Chalcondyles, Caius Julius Solinus, Valerius Maximus, Pliny, and "Suidas" (a reference to the unknown author of the tenth-century encyclopedia *Suidae [Suda] Lexicon*). See also Frank Lestringant, *Écrire le monde à la Renaissance: Quinze études sur Rabelais, Postel, Bodin et la littérature géographique* (Caen: Paradigme, 1993), 277–89.

169. See the detailed analysis by Couzinet, *Histoire et méthode*, with a bibliography, and summarized in Marie-Dominique Couzinet, "Fonction de la géographie dans la connaissance historique: Le modèle cosmographique de l'histoire universelle chez F. Baudouin et J. Bodin," in *Philosophies de l'histoire à la Renaissance*, ed. Philippe Desan (Paris: Corpus des Oeuvres de Philosophie en Langue Française, 1995), 113–45.

170. Bodin, *La méthode*, 12.

171. Arnold Mermann, *Theatrum conversionis gentium totius orbis* (Antwerp: Ch. Plantin, 1572), "Ad lectorem"; quoted in Blair, *Theater of Nature*, 171.

172. Sebastian Münster, *Cosmographiae universalis* (Basel, 1552), 13 (chap. 17).

173. Baudouin, *Institutione historiae universae*, 98.

Mappe being layed before our eyes, we may behold things done, or places where they were done, as if they were at this time present and in doing.”¹⁷⁴ This is the basic process of the perception of an image as understood by Arnheim; the only difference is that here we are dealing not with the visual recall of images previously recorded in the memory but with the activation of memorized items of historical knowledge through the recollection of their geographical setting.¹⁷⁵ The sight of a “modern” geographical map spontaneously creates a mental historical map.

ANTIQUARIAN USES

Looking for the motives behind this peculiar perception of the historicity of mapped space, we are led into the surprising world of antiquarians.¹⁷⁶ Antiquarian researchers appeared in Italy in the fourteenth century, and by the sixteenth century they had firmly established themselves in Europe. The interests of those scholars were as varied as they were numerous, and antiquarians still await their historian.¹⁷⁷ For the purposes of this chapter, the objects of an antiquarian’s study—whether interested in antiquity or the more recent past—may be described as a kind of systematic and empirical investigation of the nature and character of civilization, its origins, and its development. Antiquarian endeavors also had some practical applications, such as more precise dating of objects and events, the verification of dynastic changes and power struggles, and the historical legitimization of nascent national identities.

From the end of the fourteenth century, antiquarian curiosity appears to have been inspired by these motives. However, erudite pleasures are ambiguous. Those with a love of objects for their own sake; a thirst for knowledge about the obscure, forgotten circumstances surrounding the foundation of a city or an institution; or relish for the history of metrical systems, meteorological phenomena, and earthquakes can easily lose sight of their motives and become ends in themselves.¹⁷⁸ Be that as it may, what concerns us here is the fact that the antiquarian approach to geographical literature and iconography has exerted a considerable influence on both.

Antiquarian geographical pursuits have deep roots. Even in antiquity, the classic structure of geographical description, the *periegesis*, was reshaped to serve the interests of scholarly study. Pausanias and the geographer-travelers such as Polemon and Pliny are learned guides, describing sights and curiosities arranged in geographical order. Although medieval encyclopedias do give some information about ancient topography and the *mirabilia* do describe ancient ruins fairly systematically, antiquarian pursuits were limited in the Middle Ages and do not seem to have influenced the structure of learning.

Antiquarian studies were revitalized in Florence by Petrarch, Giovanni Boccaccio, and members of their circle. The first steps in this revival, taken by Giovanni Dondi dall’Orologio, were followed by the systematic work of Flavio Biondo, which set the pattern for antiquarian studies during the Renaissance.¹⁷⁹ One of Biondo’s first books was a study of Roman institutions, another dealt with the topography of Rome, and a third was a topographical and archaeological description of Italy.¹⁸⁰ Following in the footsteps of Marcus Terentius Varro, Biondo set out to answer the question “Who did what, where and when?”¹⁸¹ In the matter of methodology, his approach rested on three main planks: monumental topography, geographical description, and analytical presentation of the civilization in question.¹⁸² On the fringes of history and geography, a new humanistic art had been born.

There were a good many scholars all over Europe who responded to Biondo’s historical and topographical methodology and adopted it for themselves, each in his own way. It was not long before the new approach bore fruit, in Italy and elsewhere, though the fruits were not always the same.

174. Ortelius, *Theatrum*, fol. 1r.

175. “A perceptual act is never isolated; it is only the most recent phase of a stream of innumerable similar acts, performed in the past and surviving in memory. . . . Therefore, perception in the broader sense must include mental imagery and its relation to direct sensory observation”; Rudolf Arnheim, *Visual Thinking* (Berkeley: University of California Press, 1997), 80.

176. Momigliano, *Classical Foundations*; see also Arnaldo Momigliano, “Ancient History and the Antiquarian,” *Journal of the Warburg and Courtauld Institutes* 13 (1950): 285–315, and Anthony Grafton, *Bring Out Your Dead: The Past as Revelation* (Cambridge: Harvard University Press, 2001).

177. The unease felt by historians of historiography when confronted by antiquarians is apparent in Eric W. Cochrane, *Historians and Historiography in the Italian Renaissance* (Chicago: University of Chicago Press, 1981). Antiquarian pursuits are treated as a sideline, one of the “lateral disciplines,” together with biography and sacred history. In just over twenty pages (pp. 423–44), Cochrane attempts to resolve what the study of antiquities could have contributed to historiography, what it shared with historiography, and what it did not. Most of those who have written about antiquarians have been historians of art and archaeology: see Francis Haskell and Nicholas Penny, *Taste and the Antique: The Lure of Classical Sculpture, 1500–1900* (New Haven: Yale University Press, 1981); Pirro Ligorio, *Pirro Ligorio’s Roman Antiquities*, ed. Erna Mandowsky and Charles Mitchell (London: The Warburg Institute, 1963); and Schnapp, *La Conquête du passé*.

178. Momigliano, *Classical Foundations*, 62–63.

179. On the Florentine physician Giovanni Dondi and his studies, see Roberto Weiss, *The Renaissance Discovery of Classical Antiquity*, 2d ed. (New York: Basil Blackwell, 1988), 51–53.

180. See Biondo’s “Roma triumphans” (1459), “Roma instaurata” (1446), and “Italia illustrata” (1453).

181. Quoted in Schnapp, *La Conquête du passé*, 145.

182. See Schnapp, *La Conquête du passé*, 145, and Ligorio, *Pirro Ligorio’s Roman Antiquities*, 13–15.

There were many and various uses of geography and maps in the context of antiquarian methodology. First and foremost were historical topography and local history, the two most popular fields of antiquarianism. Historical treatises on matters of antiquarian interest were constructed on a geographical framework and subdivided into sections dealing with institutions, traditional customs, monuments, and so on.¹⁸³ Moreover, maps accounted for a substantial proportion of the antiquarians' output.¹⁸⁴

One example of the antiquarian use of visual evidence in combination with maps is provided by the print collection of Philip II of Spain in the Escorial. The formation and organization of this collection was largely the work of the Escorial librarian, Benito Arias Montano, an antiquarian and biblical scholar, and it remains of great interest for several reasons: first, because it survives in its entirety; second, because it is an exceptionally large collection (about seven thousand prints); and third, because it is arranged in thematic groupings.¹⁸⁵ Only three of the thirty-six albums in the collection contain maps; those three are concerned with Italian (especially Roman) antiquities, and the maps serve as frontispieces or endpieces.¹⁸⁶

Antiquarians and those influenced by their methods used maps as tools for their historical research. As far back as the early fifteenth century, antiquarian studies had relied to a greater or lesser extent on Ptolemy's *Geography*. An important part was played by the text of the *Geography*, most of which consists of lists of place-names with their geographical coordinates. With the help of Ptolemy's lists, antiquarians were able to confirm or work out the positions of ancient sites named in the sources or to identify them with the corresponding modern place-names.¹⁸⁷ Contemporary maps, too, met the same needs by means of a supplementary tool: the concordance of ancient and modern place-names.

The role of toponymic concordances accompanying writings on antiquarian subjects has yet to be studied in depth. These lists presumably descended from the same needs that inspired Vibius Sequester's geographical dictionary in the fifth century: as knowledge of the ancient world faded away, it was becoming more difficult to understand ancient literature.¹⁸⁸ Toward the end of the fourteenth century, the problem was even greater, as we can infer from the intensive comparative studies of ancient and modern terminology (including place-names) on which Petrarch, Boccaccio, and members of their circle worked in the last decades of that century.¹⁸⁹ The lists they compiled are related to other comparative lists compiled in the fifteenth and sixteenth centuries and were influenced by Ptolemy's *Geography*, which lent some of them a more systematic character.¹⁹⁰ Such works sold

widely in the sixteenth century and went on being used until the eighteenth century and even later.

The typological characteristics of toponymic concordances are ill defined. Some are leaflets, some are small booklets, and others are impressive volumes containing lengthy annotated toponymic treatises. In some instances,

183. Following Biondo's example, Pirro Ligorio published a topographical description of Rome in 1553 and similar books on other regions later, while Enea Silvio de' Piccolomini, in addition to his exemplary cosmography, wrote a history of Bohemia (1475) and other works on the German states and the countries of eastern Europe. Similar works include Polydore Vergil's *Anglicae historiae* (Basil, 1534), Hector Boece's *Scotorum historiae* ([Paris], 1527), Lucio Marineo's *De rebus Hispaniae memorabilibus* ([Madrid], 1533), Olaus Magnus's *Historia de gentium septentrionalium* (Basil, 1567), and William Camden's *Britannia* (London: R. Newbery, 1586).

184. Cristoforo Buondelmonti drew an archaeological map of Crete (ca. 1415) and in 1420 introduced the antiquarian *isolarii* that were to proliferate in the fifteenth, sixteenth, and seventeenth centuries. In 1432, Leon Battista Alberti proposed a mathematical concept for the drawing of a plan of Rome. Other maps followed, sometimes published separately and sometimes drawn for inclusion in a book, such as the historical map of Greece by Nikolaos Sofianos (1540), the map of Rome by Pirro Ligorio (1552), the map of ancient Palestine by Christiaan Sgrooten (1570), and the map of the Roman Empire by Abraham Ortelius (1571), these representing some of the antiquarians' successes in the field of cartography. Furthermore, their books usually contained maps, as was the case with Leandro Alberti's *Description of Italy* (from 1568), Jean Châumeau's *Histoire de Berry* (1566), and Benito Arias Montano's multilingual edition of the Bible (1569–72), among many others.

185. Mark P. McDonald, "The Print Collection of Philip II at the Escorial," *Print Quarterly* 15 (1998): 15–35. The equally large print collection of Ferdinand II, archduke of Austria, at Schloss Ambras contained more maps, but the contents of the collection were not classified; see Parshall, "Print Collection of Ferdinand," 180–81.

186. Albums 28-I-7, 28-I-14, and 28-I-18. See McDonald, "Print Collection of Philip II," 28–29.

187. See chapter 9 in this volume.

188. Vibius Sequester, *De fluminibus, fontibus, lacubus, nemoribus, paludibus, montibus, gentibus per litteras libellus*, ed. Remus Gelsomino (Leipzig: B. G. Teubner, 1967). The entries are often followed by a short reference to the source.

189. Giovanni Boccaccio, *De montibus, silvis, fontibus, lacubus, fluminibus, stagnis seu paludibus, de diversis nominibus maris* (Venice: Wendelin of Speier, 1473). See also Giovanni Boccaccio, *Dizionario geografico: De montibus, silvis, fontibus, lacubus, fluminibus, stagnis seu paludibus*, ed. Gian Franco Pasini, trans. Nicolás Liburnio (Turin: Fògola, 1978); Domenico Silvestri, *De insulis et earum proprietatibus*, ed. Carmela Pecoraro (Palermo: Presso l'Accademia, 1955); Marica Milanese, "Il *De Insulis et earum proprietatibus* di Domenico Silvestri (1385–1406)," *Geographia Antiqua* 2 (1993): 133–46; and Domenico Bandini, "Fons memorabilium universi," *Biblioteca Apostolica Vaticana*, Pal. Lat. 923, manuscript ca. 1370. On the role of early toponymic lists and geographical dictionaries, see Bouloux, *Culture et savoirs géographiques*, 223–34.

190. For example, Sozomeno da Pistoia's regional toponymic lists borrowed from Ptolemy's *Geography* in his "Chronicon," BL, Harley MS. 6855.11; see Sebastiano Gentile, ed., *Firenze e la scoperta dell'America: Umanesimo e geografia nel '400 Fiorentino* (Florence: Olschki, 1992), 106.

they cover a relatively small area, and in others, a much larger region. They were published as separate titles in their own right and also as appendixes to books on antiquarian subjects. Many such works were written and published, and with systematic research it should be possible to compile a corpus covering the whole of the Old World in detail.¹⁹¹ Mention should be made of the concordance of place-names by Ortelius, published as an appendix to the *Theatrum orbis terrarum*, which supplemented Ortelius's work with the character of a historical atlas. It was expanded and included in later editions of the *Theatrum*, with the title *Synonymia geographica*, and it listed the names used from antiquity to the sixteenth century. This dictionary of historical toponymy was expanded in subsequent editions of the *Theatrum* and was published separately in 1578.¹⁹² In 1587, the final version of the work won plaudits from contemporary scholars.¹⁹³

The practical character of these comparative lists of place-names is strongly marked and reinforced by the fact that they were often published together with a map or a book on local history, to which they refer. In the hands of the antiquarian, these lists became tools for stratigraphic research, transforming a modern map into a historical one. The use of these lists was archaeological in the technical sense; an antiquarian tried to make out the past behind the intervening layers of time so he could read modern maps in temporal depth. This indirect broadening of the map's tabulating capacities altered the pattern of map literacy and led to the development of early thematic (yet atypical) uses of cartography.¹⁹⁴

The publication of Ortelius's *Parergon* was completed in 1595.¹⁹⁵ This was a work that left antiquarian syncretism behind and can fairly be described as the first purely historical atlas in the Western world.¹⁹⁶ Little by little, antiquarian studies became directly allied with cartography and topography.¹⁹⁷ From the mid-seventeenth century onward, historical geography and cartography came to be one of the principal fields for the expression and application of antiquarian methodology. This hybrid science, situated between history and geography, acquired real substance, authority, and permanence with the *Introductio in universam geographiam* by Philipp Clüver, which laid its theoretical foundations.¹⁹⁸

During the period under consideration (1450–1650), history and cartography were fusing in a variety of ways. Historical maps in the modern sense—that is, maps showing what a place was like in the past—were published in the fifteenth and sixteenth centuries. Ptolemy's *Geography*, in the eyes of fifteenth-century Florentine scholars, was a historical atlas of the second century A.D., just as it was in the eyes of Mercator, who purged it of later additions and restored it to its original form in his 1578 edition.¹⁹⁹ However, works of historical cartography rep-

resented only a small percentage of the maps produced during the period in question and an even smaller percentage of the maps found in contemporary libraries and collections, where the majority were contemporary maps

191. For example, the table of ancient and modern place-names published by Nikolaos Sofianos (*Nomina antiqua et recentia urbium graeciae descriptionis a N. Sophiano Iam Aeditae. hanc quoque[uae] paginam, quae graeciae urbium, ac locorum nomina, quibus olim apud Antiquos Nuncupabantur, n.d.*); the concordance of ancient and modern place-names for Giacomo Gastaldi's map of Sicily (1545); the list of ancient and modern place-names in the British Isles included in Paolo Giovio's *Descriptio Britanniae, Scotiae, Hyberniae, et Orchadum* (Venice: M. Tramezinum, 1548); Orazio Toscanella's *I nomi antichi e moderni delle provincie, regioni, città, castelli, monti, laghi, fiumi, mari, golfi, porti, & isole dell'Evropa, dell'Africa & dell' Asia* (Venice: F. Franceschini, 1567); and the similar work on Switzerland published by Jean Baptiste Plantin, *Helvetia antiqua et nova* (Bern: G. Sonnleitner, 1656).

192. A first selection of toponymic concordances was published by Abraham Ortelius, with the assistance of Arnold Mylius: *Antiqua regionum, insularum, urbium, oppidorum, montium, promontorium, sylvarum, pontium, marium, sinuum, lacuum, paludum, fluviorum et fontium nomina recentibus eorundem nominibus explicata, auctoribus quibus sic vocantur adjectis . . .*, as an appendix to *Theatrum orbis terrarum* (Antwerp, 1570), fols. b.iir–o.iv. The list was gradually enlarged: its contents had doubled by the 1573 edition, where it was titled *Synonymia locorum geographicorum . . .*, and in 1578 the lengthy list was enriched with one thousand new place-names, further revised, and issued as an independent volume of 354 pages, *Synonymia geographica, sive popvlorum, regionum, insularum, urbium, opidorum, monium, promontorium, silvarum, pontium, marium, sinuum, lacuum, paludum, fluviorum, fontium, &c . . .* (Antwerp: Christophori Plantini, 1578).

193. This final version was issued in a new larger format under the title *Thesaurus geographicus . . .* (Antwerp: Plantijn, 1587). On Lipsius's reaction to this work, see, for example, the letter from Justus Lipsius to Abraham Ortelius dated 6 July 1587, in Jeanine de Landsheer, "Abraham Ortelius et Juste Lipse," in *Ortelius*, 141–52, esp. 144. For a bibliographical description of the work, see C. Koeman, *Atlantes Neerlandici: Bibliography of Terrestrial, Maritime, and Celestial Atlases and Pilot Books Published in the Netherlands up to 1880*, 6 vols. (Amsterdam: Theatrum Orbis Terrarum, 1967–85), 3:25–83, and Gilbert Tournoy, "Abraham Ortelius et la poésie politique de Jacques van Baerle," in *Ortelius*, 160–67, esp. 162–63.

194. See Arthur Howard Robinson, *Early Thematic Mapping in the History of Cartography* (Chicago: University of Chicago Press, 1982).

195. The first three maps of the *Parergon* are included in the 1579 edition of *Theatrum orbis terrarum*, together with the list of the Ptolemaic place-names (*Nomenclatur Ptolemaicus*). For a description of the *Parergon*, see Liliane Wellens–De Donder, "Un atlas historique: Le *Parergon* d'Ortelius," in *Ortelius*, 83–92.

196. See Jeremy Black, *Maps and History: Constructing Images of the Past* (New Haven: Yale University Press, 1997), 2–10, and Wellens–De Donder, "Un atlas historique."

197. On the development of the association between antiquarianism and cartography in Britain, see Walters, "Antiquary and the Map."

198. Philipp Clüver, *Introductio in universam geographiam, tam veterem, quam novam, multis locis emendata* (Leiden, 1629), and Walters, "Antiquary and the Map," 531.

199. Ptolemy, *Tabulae geographicae: Cl. Ptolemei admentem auctoris restitutae et emendate*, ed. Gerardus Mercator (Cologne: G. Kempen, 1578), reissued in 1584, 1605, and 1619.

or hybrid “historicizing” maps in which old and new data were intermingled. As Ortelius admitted in the preface to his *Theatrum orbis terrarum*, “Sometime, when occasion did serve, or need require, and the place would permit, unto the moderne and usual names of certain places, wee have added the ancient names mentioned by old writers, but now vulgarly unknowne. . . . So I hope it will be a thing very well pleasing to all such as are readers of old histories and Antiquities.”²⁰⁰

In presenting this brief summary, the intention has been to draw attention to the use of maps by the learned elites of the Renaissance and to explore the role and functions of cartography in early modern scholarly pursuits. The object of this chapter is not to point a finger at yet another case of Renaissance polarization, an antithesis be-

tween erudite circles on the one hand and scientific circles on the other. Humanists and scientists evolved together in a culture that manifested the urge to visualize, tabulate, and organize knowledge, and it was by no means rare to find persons who were active in both capacities, a situation eloquently illustrated by the *Mathematici Polyhistor* section in the Amsterdam civic library. The widespread learned, historiographic, and antiquarian uses of maps should not be regarded as a constraint to progress, for these endeavors formed an essential lever for the rising modernity: they served in the formation of historical and geographical awareness; they also encouraged the conceptualization of the empirical evidence and promoted free thinking and critical methodology.

200. Ortelius, *Theatrum*, fol. 1v.

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