THE MARVEL OF MAPS

Art, Cartography and Politics in Renaissance Italy

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RAVENNA
Spedaletto
Paludi di Candiano
Offeria
P. de Grossi
VALLI
VALLI
Bastia
S. Gilio
S. Michele
Figarnolo
Piangipane
Rauennae acerrima clades
Senio F.
Montone F.
Ronco F.
Russo
S. Iacopo
Bagnacauallo
Cosefice
DITIONI FERRARIAE
Cotognola
Lugo
S. Agata
Massa de lombardi
Barbiano
Amone F.
FAVENTIA
Via Emilia
Mordano
Bubano
Bagnara
Cantalupo
Solarnolo
C. Bolognese
VALLE DI AMONE
BONONIAE DITIONIS PARS
S·P·Q·R
SANCTIO AD
RVBICONIS·PONTEM
IVSSV·MANDATVVE·P·R
COS·IMP·TRIB·MILES·TYRO
COMMILITO ARMATE
QVISQVIS·ES
MANIPVLARIAEVE·CENTVRIO
TVRMAEVE·LEGIONARIAE
HIC·SISTITO·VEXILLVM·SINITO
ARMA·DEPONITO
NEC·CITRA·HVNC·AMNEM
RVBICONEM·SIGNA·DVCTVM
EXERCITVM·COMMEATVMVE
TRADVCITO
SI·QVIS·HVIVSCE·IVSSIONIS
ERGO·ADVERSVS·PRAECEPTA
IERIT·FECERITVE
ADIVDICATVS·ESTO·HOSTIS
S·P·R·AC·SI·CONTRA·PATRIAM
ARMA·TVLERIT
PENATESQ·E·SACR·PENETRALIB
ASPORTAVERIT
S·P·Q·R·SANCTIO
PLEBISCITI·SVE·C
VLTRA·HOS·FINES
ARMA·PROFERRE
LICEAT·NEMINI
SVS GEOMETRICI COMMVNES


Hic Hannibal consule
interfecto romanos
profligauit A. U. CCXXVII
A FLORENTINAE
DITIONIS
PARTE
AVGVSTA·PERVSIA·CIVIB
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TOT·PAGIS·OPPIDIS·SVBVRB·
AMNIBVS·VIVIS·FONTIBVS
APRICIS·COLLIBVS
FERACISSIMIS·VALLIBVS
INSIGNI·LACV·TRASIMENO
PRAEDITVM
MAIORES·VESTRI·CONSILIO
ARTE·INDVSTRIA·PACE
ET·BELLO·COMPARARVNT
CONSERVARVNT·AVXERVNT
ET·PLVRIMIS·MAXIMISQ·REB·
DOMI·FORISQ·GESTIS
LITTERIS·ET·ARMIS
EGREGIE·ILLVSTRARVNT
POSTERISQVE
AD·PARTA·TVENDVM
ET·TERMINOS·IAM·POSITOS
IVSTE·ET·SANCTE
PROPAGAN·EXEMPLVM
PERPET·RELIQVERVNT
PASSVS·GEOMETRICI·COMM·

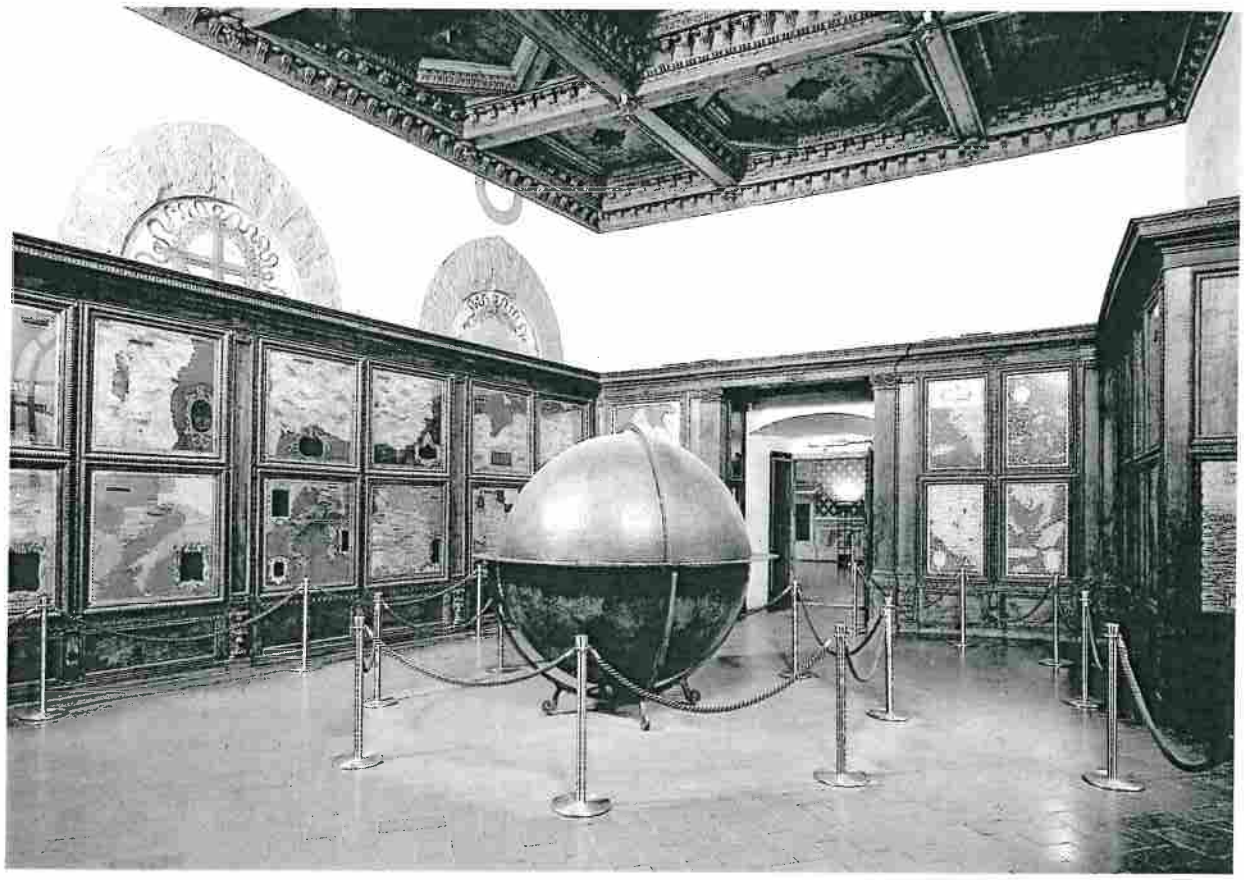
I

Interpreting Renaissance Map Cycles

This book is about the interactions of mapping with other forms of knowledge and representation in the Renaissance and Counter-Reformation. It examines the place of cartography in two famous courts, the court of Duke Cosimo I de' Medici (1537–1574) and the papal court of Gregory XIII Boncompagni (1572–85). These two rulers, like others of the period, used maps as a tool for the administration and defense of the state and for the collection and distribution of resources. As learned patrons, they also used the maps as visual aids in reading the Bible and the classics, and as a means of understanding the daily reports on the European wars. But these two rulers distinguished themselves among their contemporaries by the magnificent painted maps that they commissioned for their palaces. These map cycles were conceived to be displayed in appositely built rooms that still fascinate the modern visitor just as they must have the Renaissance viewer. Monumental in size and a magnificent displays of color, these map cycles, although useless as guides for the traveler, were among the most marvelous cartographic artifacts of the Renaissance. Because the Medici and papal courts are so well known for their art, life, and culture, these map rooms recapture the pervasiveness of cartographic images among Renaissance political and religious imagery, and, more generally, the relevance of cartography to Renaissance culture.

Cosimo I's Guardaroba Nuova presents an unusual iconography among the rooms of the Medici ducal palace. This large room is not decorated with the deeds of Medici forebears, ancient heroes, or pagan gods, but with colorful maps of the world, which are oddly painted on the doors of huge cupboards (Figs. 1.1 and 1.2). The visitor entering this room is surrounded by maps of the world. At the very center of this painted world, the viewer may contemplate the regions of the globe displayed around him. It is soon realized that, owing to the peculiar perspective, the maps represent the earth as seen from above though viewed from its center, thus generating the simultaneous experience of being inhabitants of the earth and outside onlookers. As the viewer adapts to this artifice of representation, it becomes apparent that the regions of the world are displayed as if they were depicted on the inner side of the globe, rather than on the outer side of the globe. The monumental globe in the middle of the room helps to make the quick mental move from the internal view of the globe

(*facing page*) Detail of fig.1.4



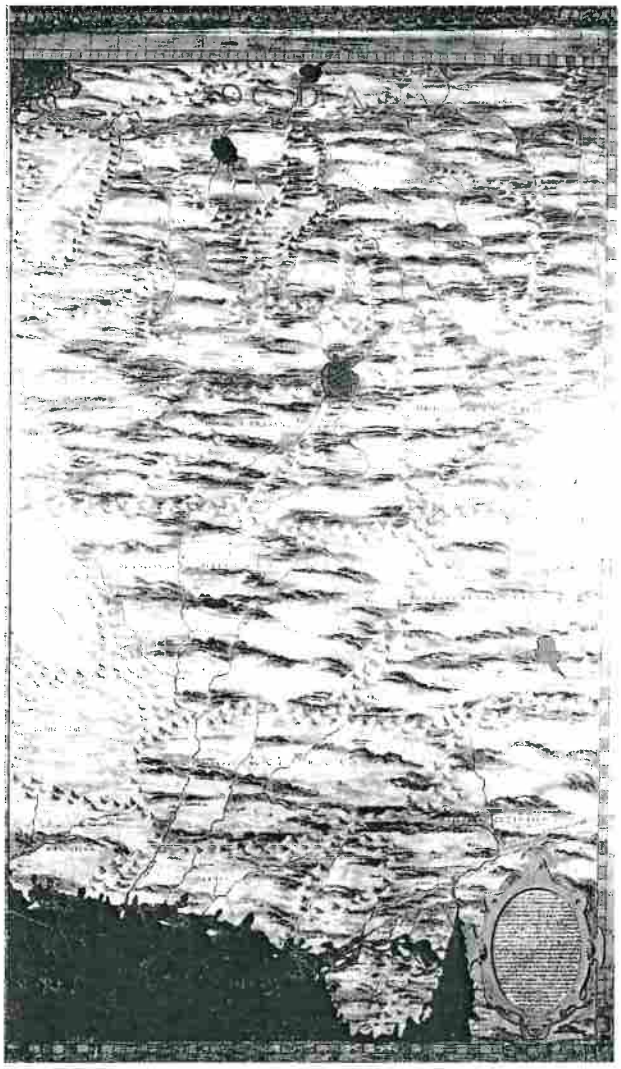
1.1 Guardaroba Nuova. Florence, Palazzo Vecchio

to the aerial view of the sphere. As one moves around the room each map is understood in connection with its neighboring regions. Renaissance visitors would have enjoyed the additional wonder of opening the doors of the cupboards, on which the maps are painted, to admire the beautiful objects from the Medici collections that were stored there; the origin of each object was described by the map. Further admiration would have been generated by the knowledge that no other ruler possessed such a unique display of modern maps, or a collection of artifacts from all over the world, organized geographically.

Similarly, the Gallery of Maps, a long corridor in the Vatican Palace, defies expectations of papal decorations. Instead of religious stories, saints, and miracles, which are relegated to the ceiling, the viewer is confronted with an unprecedented atlas of monumental maps of modern Italy depicted in bright colors along the walls (Figs. 1.3 and 1.4). The walk along the corridor reveals that the maps have been arranged as they would appear in an imaginary walk along the Apennine spine of the Italian peninsula. The maps progress from north to south, depicting the regions of Italy from above. The regional maps on the walls are subtley adjusted in their orientation to the imaginary trip from north to south. The maps on the left, which represent the regions along the Adriatic Sea, depict north on top, as was customary in Renaissance maps, but the maps on the right, which represent the regions along the Tyrrhenian Sea, show north at the bottom. The orientation of the maps is defined not by cartographic conventions but also by the projected movement along the Apennine spine.

Post-Tridentine Catholics might have pondered the role of Italy within the universal church knowing that they were admiring the first atlas of Italy ever produced. They probably would have also understood that the images on the vault of the corridor, which modern viewers tend to ignore, were depictions of the events of church history that happened in the lands mapped below.

These map cycles are challenging to modern interpreters of Renaissance court art. Countless art-historical studies have demonstrated that Renaissance rulers were acutely aware of the power of images to assert political and religious claims. The works of historians of cartography have shown that the themes of dominion and conquest were inherent in Renaissance mapping. But since Cosimo I did not rule over the world he depicted in the Guardaroba Nuova, and Gregory XIII had no political control of the regions of Italy he had painted in the Gallery of Maps, these two cycles elude a direct political interpretation of dominion and conquest. Furthermore, these two map cycles were cartographic enterprises in their own right: Cosimo I's Guardaroba Nuova displayed an atlas of the modern world before the very notion of the atlas was born, while Gregory XIII's Gallery of Maps represented the concept of modern Italy centuries before the peninsula was unified politically. Moreover, these cartographic achievements do not conform to the geographical theory of Ptolemy, the second-century astronomer whose *Geography* became the backbone of Renaissance mapping. Ptolemy wished for a mathematical description of the world projected onto a cartographic grid, while these Renaissance maps were surrounded and filled with myriad other images, such as views of cities and buildings, vignettes, animals, plants, trees, and inscriptions, features that Ptolemy would have regarded as extraneous to geography (Figs. 1.2 and 1.4). And finally, the rooms themselves and the individual maps that they contain pose an epistemological challenge, for they make use of the full resources of visual representation to evoke the three-dimensionality of the earth as effectively as possible. Scale, size, frames, colors, texture, projections, words, icons, symbols, grid, and architectural space interact creatively to produce a novel, informative, and pleasing representation of the earth and its parts. Indeed, the three-dimensional display of these enriched representations of the earth is fundamental to the understanding of the cycles

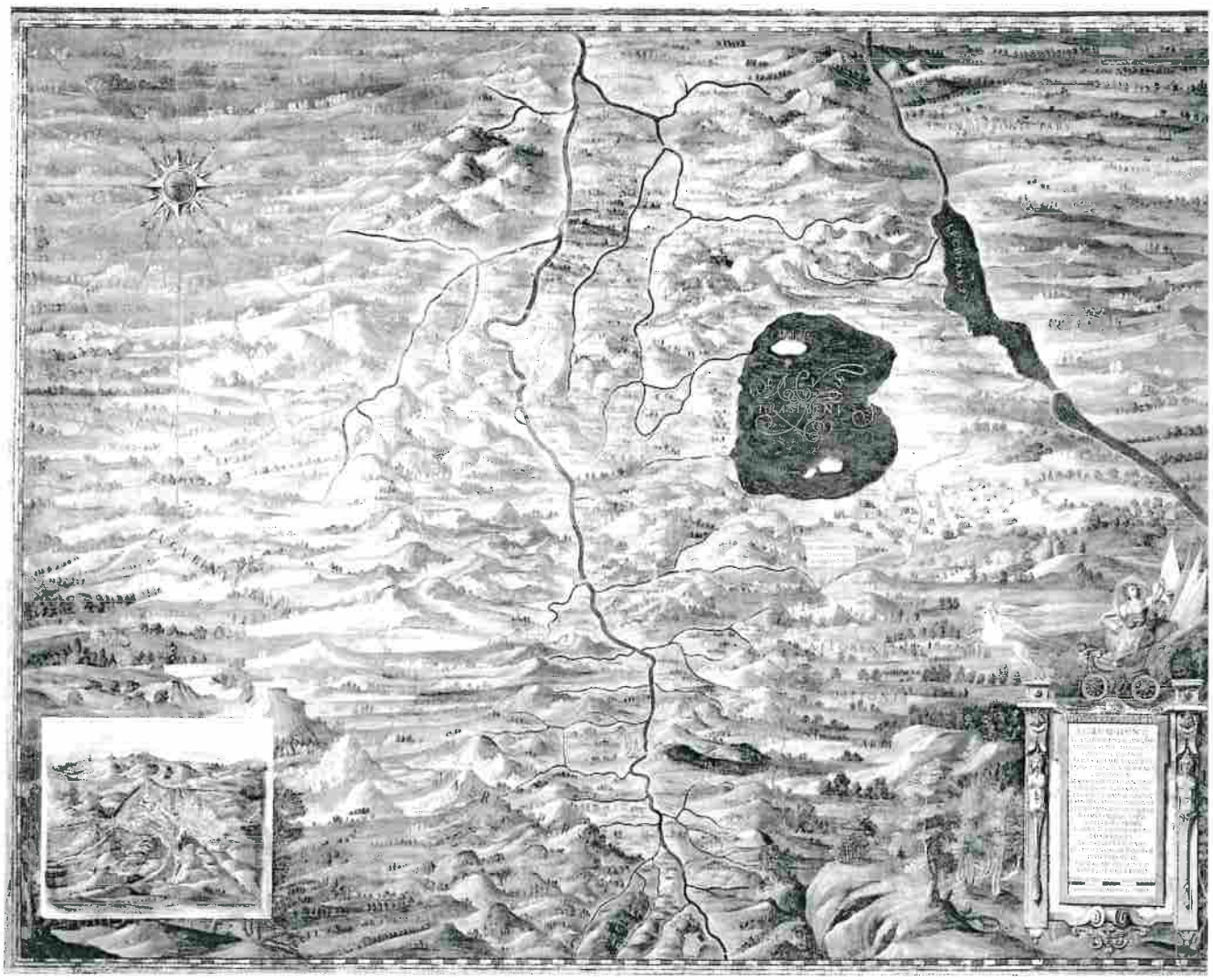


1.2 Egnazio Danti, *Sogdiana* (Central Asia), not dated, panel. Florence, Palazzo Vecchio, Guardaroba Nuova

1.3 Gallery of Maps. Vatican

themselves: it strengthens the relationship between individual maps and the totality of the geographical unit (be it Italy or the earth itself), reinforces the perception of the maps as a cycle, and enhances the relations between the maps and other parts of the iconography.

In order to understand these map cycles an approach is needed that takes into account simultaneously their cartographic originality, their interaction with other forms of knowledge, their encompassing description of the world and its parts, their visual richness, and their three-dimensional display. Such an approach demands the fusion of different bodies of contemporary scholarship. First, the humanistic Renaissance was a movement that encompassed mathematics and philology, science and humanism, measurements and antiquarianism.[1] Anthony Grafton has explained how science and humanism, now considered and practiced as divergent forms of scholarship, shared a common history, principles of order, and methods of inquiry in the Renaissance, while Ingrid Rowland showed how computation, from the measurement of the universe to the length of the Roman foot, was part and parcel of Renaissance humanism. Their approach is essential for the interpretation of



1.4 Egnazio Danti, *Perusinus ac Tifernas* (Map of the Territory of Perugia), ca. 1580, fresco. Vatican, Gallery of Maps

Renaissance mapping as art proposed in this book: mapping was an enterprise integrating textual analysis, computation, and visualization to which scholars, artists, merchants, and patrons contributed working side by side.

Second, I have used the work of Edward Casey on the notions of space, place, and site.[2] While modern philosophers from Immanuel Kant onward have studied the notion of space as an abstract and incorporeal entity and contrasted it to time, Casey focused on the relations between space and place. Like space, place is one of the conditions of our being in the world but, unlike space, it maintains some element of corporeality and refers to an individual locale represented with its unique characteristics. In this respect, place also differs from site, which is a "place reduced to location and position in space."[3] A site is thus a place that is mapped through the agency of the grid and deprived of its individual characteristics. The notions of place and site, which Casey himself applied to landscape painting and maps in general, are essential to explain the language of Renaissance maps: in these images a locale is not only positioned mathematically on the cartographic grid but also described with a plethora of qualitative details.

Third, I have followed the lead of art-historical approaches that bring the historical processes of visualization to the center of cultural history and the history of ideas. The work of Barbara Stafford, Horst Bredekamp, and Martin Kemp is not specifically concerned with maps but more generally concerned with the cognitive power of visualization in early modern Europe.[4] It is through the studies by Stafford on anatomy and scientific entertainment, the essay of Bredekamp on the theory of the Kunstkammer, and the work of Kemp on anatomical and botanical images that the visual logic of these three-dimensional map cycles comes to light, and that the visual synthesis between different branches of knowledge achieved in Cosimo I's and Gregory XIII's map cycles becomes evident.

Renaissance Mapping

Mapping has always been a selective cultural process that, as Denis Cosgrove has recently discussed, involves choices, reductions, omissions, and distortions in order to obtain the representation of the three-dimensional globe of the earth on a two-dimensional surface.[5] During the Renaissance, mapping became a particularly laborious endeavor: from a process based entirely on the visualization of texts, as it had been in the Middle Ages, it was transformed into a craft that required the mastery of both mathematics and philology, of computation and textual exegesis. In fact, a great deal of Renaissance mapping resulted from the scrutiny of an ancient text that was rediscovered in the Renaissance, Ptolemy's geographical manual. This text, which humanists, merchants, and artists passionately read, translated, and illustrated, made it possible to imagine a novel way to visualize the world: the earth's globe was covered with an imaginary spatial grid of coordinates of latitude and longitude, new projections allowed the proportions between the sphericity of the earth and the flat surface of the map to be maintained, and astronomical observations defined the position of terrestrial locations. Having reacquired the mathematical dimension it had lost in the Middle Ages, cartography became a mixed science (*scientia media*), that is, a discipline that applied the abstract principles of geometry and arithmetic to the solution of practical problems. As a mixed science, cartography participated in the larger history that gradually found in mathematics the explanation of the nature of things. By examining the increased importance of mapping in the culture and education at the Medici and papal courts I shall try to establish the place of cartography both in the investigation of the natural world and in the contemplation of the divine.

Parallel to the mathematization of mapping, which was fundamental, since it made possible the new visualization of the earth's globe, was the expansion of the notion of geographical description, which came to include not only the mathematical location of a place, as Ptolemy had suggested, but also whatever that place contained, namely people, animals, plants, rocks, and the vestiges of the ancient past. Indeed, imagined in Renaissance mapping was the antiquarian reconstruction of ancient culture and civilization, either through the definition of the location of events, cities, and buildings reported by ancient writers, or through the reconciliation between ancient geography and modern discoveries. As contradictory as it may seem to us, Renaissance cartographers regarded the reconstruction of ancient geography and the mapping of the modern world as part and parcel of the same process, a process that I shall analyze in detail. Although sailing unknown seas and discov-

eries of new lands were extending the Ptolemaic world, Renaissance map-makers perceived their work not as the subversion of Ptolemy's *Geography* but rather as the completion of it. As passionately as they debated the length of the Roman foot, so they engaged in equally lively discussion on the location of Ptolemy's mythical Golden Chersonese in modern maps. They were ultimately defenders of classical geography.[6]

This reading of Renaissance mapping as the fusion of mathematics and philology does not apply to every map produced in the Renaissance, but only to the printed maps made for a wide public. As it is becoming increasingly clear thanks to the studies of Brian Harley, Catherine Delano Smith, and David Woodward, among others, the reading public expected maps to include a variety of information pertinent to the mapped place: its history, ethnography, botany, and zoology.[7] Gradually but unmistakably, the cartographic language of printed maps came to differ from the language of other cartographic images, such as cadastral maps and navigational charts, which were made for specific utilitarian purposes, a fact that should be a warning not to confuse the epistemology of printed maps with that of other kinds of cartographic images. I shall analyze the cartographic language of Renaissance maps and their encyclopedic description of places through the maps that Cosimo I and Gregory XIII commissioned for their palaces. Although these maps were made for the restricted circle of Medici and papal courtiers and their visitors, they did share the cartographic language of printed maps, on which in fact they were based.

Like printed maps, the Florentine and Vatican maps were conceived as marvelous images on the boundaries between art and science that conveyed the knowledge of the world spatially and graphically. The maps represented the world according to the cartographic grid as well as according to the descriptions of ancient and modern geographers. They were the product of both the humanistic analysis of the geographical texts by Ptolemy, Strabo, and Mela, and the visual comparison of cartographic images made by modern map-makers. Consequently, they did not simply describe places mathematically, but rather reconciled, at times superbly, the contradictions between the tradition of classical geography and the discoveries of the modern voyages. In Renaissance maps different systems of representation (the plan view, the perspective view, and the bird's-eye view) and different modes of description (verbal and visual, cartographical and historical, mathematical and literal) coexist side by side. As a construct of modern observation, classical knowledge, and visual conventions, Renaissance maps aspired to an accurate record of the world informed by both the standards of cartography and other forms of knowledge. In this book I shall consider maps as scientific illustration, for maps are a form of record of the knowledge of the world.[8] Like the images of plants, animals, rocks, and of the human body that illustrate sixteenth-century books on botany, zoology, and anatomy, maps were visual fields, on which scholars, humanists, and artists joined the description of the modern world with the humanistic exegesis of classical texts.

As hybrid systems, Renaissance maps were polysemic structures, combining at once indexical, iconic, and symbolic signs.[9] The grid makes the map indexical, for to each point on the surface of the earth corresponds one place on the surface of the map. Other signs, however, are iconic, since they retain a resemblance to the way things look in the world, such as the trees identifying forests, the buildings marking cities, and the cones indicating mountains. Others still are symbolic, conventional representations, such as the cross marking a bishopric, or the double cross indicating an archbishopric. The myriad words that fill the map

as toponyms, legends, and inscriptions were also symbols. These hybrid semiotic systems fit uneasily within the dichotomy art and cartography traditionally invoked to explain them.[10] The sole focus on the cartographic accuracy of Renaissance maps, which is generally understood as the accurate correspondence of locations between the earth and the map, regards these artifacts as modern scientific images but eliminates the need for analysis of their antiquarian origins and metaphorical meanings. By the same token, the exclusive focus on the contextual meaning of these images, which tends to interpret the maps as representations of power and dominion, leaves out their important role in the investigation of the natural world. Finally, the famous dichotomies between resemblance and difference, similitude and identity, pictorial description and geometric abstraction that Michel Foucault used to distinguish the pre-modern and modern investigation of the natural world are inadequate to grasp the all-encompassing geographical description to which Renaissance maps aspired.[11]

Mapping Sites as Places

The understanding of Renaissance maps as cognitive visual fields made up of different modes and techniques of representation is clarified by Casey's phenomenological investigation on the notions of place and site, which, in turn, are particularly pertinent to the Renaissance notion of space. Renaissance natural philosophers did not conceive space as the fully abstract entity of modern philosophy, but rather as an entity with some elements of corporeality. Their hybrid conception of space as both abstract and corporeal, as quantitative and qualitative, mathematical and descriptive, could accommodate the two opposing notions of site and place investigated by Casey. Renaissance maps should not be interpreted as visual representations of philosophical space, yet the Renaissance philosophical notion of space provided a theoretical framework that made it possible to map the land in terms of both site and place.

In fact, through the notions of place and site, the polysemic structure of Renaissance maps appears as an all-encompassing representation of a locale. The cartographic grid, mathematical and quantitative, establishes the univocal correspondence between sites on the earth and sites on the map. The grid also measures abstract, incorporeal space, since it implies a disembodied viewer with no fixed place on the map and no fixed viewpoint. But the cartographic grid coexists with the perspectival views of mountains, cities, and people, which instead are qualitative, descriptive, and corporeal: although the viewer is still disembodied, he has acquired a fixed place, a point of view from which to measure distances, judge directions, and evaluate sizes. These other features of the map extend the representation of the site as location to the site as place. The maps respond to the double, divergent, but not irreconcilable view of a mathematized space and a highly qualified place, of a homogeneous and heterogeneous space. What might appear to the modern eye as an unresolved combination of different systems of representation and modes of description, was in fact a more encompassing representation of space: bodiless and corporeal, absolute and limited, quantitative and qualitative. In short, a totality of space made up of locations of sites and fragments of places.

The mundane activity of walking is fundamental to Renaissance maps. Edmund Husserl considered walking to be the mediator between body and place, and Casey analyzed specif-

ically as the primary means by which we experience place.[12] According to Husserl and Casey, by walking a coherent world is built up out of the fragmentary appearances that, taken in isolated groupings, would be merely kaleidoscopic. These appearances are both familiar and unfamiliar, near and unknown, but, when brought together by the basic action of walking, become the experience of a coherent organism. The unity of the body parts is supplied precisely by the kinesthetic feelings systematically associated with the actual movement of the body. The activity of walking through a place is implied in the spatial configuration of every cartographic image, Renaissance or otherwise. The represented territory, whether large or small, is mapped by imagining the viewer walking through its roads, mountains, and places. In two-dimensional maps, the bodily movement of walking through the mapped territory is either reduced to the movement of a finger on the surface of the map, or further limited to the movement of the eyes over the image. Exploring the map means, in most cases, transforming the actual movement of fingers and eyes into the mental movement of the entire body. But in the three-dimensional map cycles that constitute these case studies, the mental walking through a map is made vivid and concrete by the actual walking through the architectural spaces, in which the maps are displayed.

In the painted map cycles of Cosimo I and Gregory XIII the illusion of the three-dimensionality of the earth was enhanced by the display of the maps themselves in a specific architectural space. Not only were the maps inextricably connected to their original location, but they were conceived, ordered, and displayed in relation to that physical place. Viewers were meant to enter the room and literally walk into the assemblage of maps. The three-dimensionality of the architectural space represented the three-dimensionality of the world itself, so that the representation of the earth acquired a spatial dimension not afforded in two-dimensional maps. In contrast to the comprehension of two-dimensional maps, in three-dimensional map cycles the cognitive function of the body is mediated not only through the metonymical movement of eyes and fingers on the surface of the map, but it is complemented by the actual movement of walking through the real architectural space occupied by the maps as objects. The movement of walking in and across a room or a corridor mimics, microscopically, the movement of the entire body through the world. Conversely, the different parts of the map cycles are organized not only in relation to each other, but also in relation to the viewer's body and its position.

Furthermore, the sheer size of the maps contained in these cycles entailed the expansion of the scale of representation to such an extent that it effected profoundly the representation and perception of the mapped land, and even well-known places appeared as novel and unfamiliar.[13] At such a monumental scale, the mapped area appeared less distorted, more sites were located on the grid, and more topographical details were added in the forms of symbols, icons, and names. The combination of the monumental scale with the cartographic grid enhanced the possibilities of cartographic representation so that the individual geographical units were represented as both sites, that is, as abstract locations within the cartographic grid, and as places with individual characteristics. The physical surface of the maps as artifacts, their distinct texture as murals, panels, or canvases further contributed to the efficacy of the all-encompassing representation of the place.

Indeed, the meaning of these map cycles, created by the interaction of the painted maps with images of history, mythology, zoology, botany, and religion, could be fully grasped only through the firsthand experience of the rooms that contained them. In this book I shall

demonstrate how these three-dimensional map cycles forced the viewer to make connections, create constructive interactions, and build analogies, primarily visual analogies. These analogies were not spelled out in inscriptions within the rooms or in accompanying booklets, but were made possible, indeed encouraged, by the very layout of the different parts of the iconography.

The construction of meanings that these map cycles made possible within their respective architectural spaces was determined by the cultural context of the Medici and papal courts, the ideals of their patrons, and the skills of their makers. The context of their respective courts shaped the representation of political structures, national borders, trading routes, settlements, religious organization, economic resources, history, and devotion. As the following pages shall show, these map cycles constructed meaning through the interaction of mapping with many facets of Renaissance culture. Well-established topics of Renaissance studies, such as the representation of power, the theory and practice of collecting, the fabric of courtly patronage, the rise of mathematics and mixed sciences in the investigation of the natural world, the relationship between images and observation in the explanation of the natural world, the interactions between science and religion, the spatial organization of knowledge, and the self-fashioning of a polymath, all form the backbone of the present investigation.[14]

Egnazio Danti and His Map Cycles

Cosimo I's Guardaroba Nuova and Gregory XIII's Gallery of Maps are the happy result of the cooperation between sophisticated patrons, who were keen to make the investigation of the world part of their own personal iconography, and an accomplished polymath, who also had great familiarity with the visual arts. Cosimo I and Gregory XIII must have decided which maps to represent in their respective map rooms, but it was their cosmographer, the Dominican Egnazio Danti (1536–1586), who conceived these map cycles as pioneering cartographic enterprises, having no parallel either in print or in paint. It was Danti who invented the exceptional arrangement of the selected maps within their architectural space. And it was Danti who, in collaboration with other courtiers, made these map cycles participate in the main themes of their patrons' politics, the legitimacy of the Medici duke, and the universal mission of the Boncompagni pope.

Egnazio Danti, a little-known Dominican, was able to please such different patrons because of his prismatic personality and his skills as a courtier. Known to specialists of artistic perspective for his edition of Giacomo Vignola's *Le due regole della prospettiva pratica* (Rome, 1583) and to historians of science for his signature under the Gregorian reform of the calendar, Egnazio Danti was an exceptional polymath. Extensive training in both the visual arts and mathematics made it possible for Danti to enjoy lifelong familiarity with artists and their practice, as well as with university professors and their theories, and with mathematicians and their procedures. In Florence, Bologna, and Rome, he moved with equal ease in artistic, humanistic, and scientific circles. His mathematical knowledge ranged from astronomy to geography, from optics to perspective, from map-making to the manufacture of instruments. As the cosmographer at the Medici court and later at the papal court, he actively participated in the shaping of the politics and ecclesiastical mission of his patrons.

By the end of his life, he had climbed the ecclesiastical ladder and was nominated Bishop of Alatri, a small town a hundred kilometers south of Rome, where, much to his dismay, he was forced to move in compliance with the Tridentine decree requiring bishops to reside in their dioceses. He was also a persuasive preacher, and in 1585 was invited to deliver the public homily, attended by numerous cardinals and prelates, to celebrate St Thomas Aquinas's day in Santa Maria sopra Minerva, the main Dominican church of Rome.

A passionate bibliophile and collector, Danti had a personal library rich with books, manuscripts, maps, and drawings. It is known that he owned precious manuscripts, including one of Giovanni Boccaccio's banned stories, a copy of Giacomo Vignola's treatise on perspective, and an abridged version of Leonardo da Vinci's *Treatise on Painting*. His collection of drawings was assembled in a book, and included drawings of machines by the Sienese architect Francesco di Giorgio Martini and images of the Virgin and Christ by the Bolognese painter Bartolomeo Passerotti.[15] Unfortunately, this collection is now lost. When Danti died in 1586, his books were offered for sale to the Duke of Guastalla, who declined the offer, and they have disappeared from public sight since then.[16] Danti's private papers have also been lost. His manuscripts, instead, were acquired by the Apostolic Chamber in compliance with another Tridentine decree mandating the acquisition of bishops' earthly goods by the papacy. What remains of his prolific life are fragments of his correspondence, sporadic entries in the state archives of Rome, Florence, Bologna, and Perugia, his treatises on applied mathematics, and, above all, the magnificent map cycles he designed and supervised in Florence and Rome.

Renaissance Map Cycles

Danti's map cycles for the Medici and the papacy were part of a distinct preference of Renaissance patrons for cartographic imagery to decorate their palaces and villas.[17] At the peak of their diffusion, in the second half of the sixteenth century, painted maps proliferated on the walls of royal, papal, and republican palaces, in monasteries, and in cardinals' villas. The most spectacular examples are documented in Italy, where they seem to have originated in the second half of the fifteenth century, and some of them are still well preserved in Rome, Florence, Parma, Naples, and at Caprarola. Most, however, are known only through documents describing them, such as the maps painted for the Gonzaga palaces in Mantua, or the marvelous series that embellished the Ducal Palace in Venice. Later, the fashion for monumental map cycles spread also to other parts of Europe, such as London, Madrid, and Salzburg. Today it is hard to appreciate the spread of painted map cycles in Renaissance Italy, but Jacob Burckhardt was so impressed by the wide use of cartographic images to decorate Renaissance residences and halls of power that he listed them among the artistic genres of the Italian Renaissance.[18] The cartographic content of these map cycles varied greatly. Civic authorities usually painted monumental maps illustrating the territory under their jurisdiction. Similarly, rulers and nobles selected cartographic representations (either maps or views) of their possessions in order to visualize the extent of their political and administrative power. In other cases, the map cycle included maps or views that did not correspond to any political entity, nor were they under the jurisdiction of a single ruler. Maps of the old and new world, or views of important European cities, represented a symbolic

possession for the patron, stressing the borders of his religious, political, and economical influence. Extremely popular were cycles of city views, a subject that both men and women seemed to have liked for the decoration of private quarters, such as study rooms, balconies, and loggias.

These map rooms fit well in the decorative schemes of princely palaces. They added variety to the overall decoration; flattered their patron's interests in geography, astronomy, and cartography; were invented in accordance with the principle of decorum, that pillar of Renaissance art that dictated the suitability of the iconography to the function of the room; and were invaluable in the political and religious aggrandizement of their patron. In these exceptional rooms, the painted maps were so coherently selected in relation to each other and in conjunction with other non-cartographic images, such as allegories, religious scenes, and historical events, that they can be regarded as a cycle, that is as a coherent series of images organized around a central theme and around a single geographical unit, be it a region, a continent, or the earth itself.

The creation of painted map cycles in the Renaissance was part of an older tradition that, from the Middle Ages onward, had favored the display of the encyclopedic world map in monastic libraries, chambers of rulers, or papal dining halls. But Renaissance patrons and map-makers ignored the continuity with the medieval tradition, preferring instead to relate their predilection for the display of maps to ancient models. They learned from the Roman historian Livy that Tiberius Sempronius Gracchus celebrated his conquest of the island of Sardinia by exhibiting publicly a map in the shape of the island, on which the battles of the Roman conquest were marked. They read in the writings of Aelian, an authority on military art, that Socrates used maps to impart moral lessons on the relativity of earthly things, and gleaned from the revered Pliny that maps and city views adorned private houses and public sites in ancient Rome.[19]

More specifically, Pliny praised Ludius, a painter contemporary with the reign of Augustus, for bringing in "the fashion of painting seaside towns on the walls of open galleries, producing a delightful effect at a very small cost."[20] In addition, Pliny reported on Agrippa's map of the Roman world that Augustus had set up in a colonnade in the Campus Martius, a map that is now lost. Pliny gave a particularly detailed description of the large-scale plan of Rome, which was displayed on an outer wall of the library attached to the Temple of Peace in Rome and which was presumbaly an earlier version of the *Forma Urbis Romae*, the marble map carved between 203 and 208 and displayed in the same location.[21] Fragments of the *Forma urbis Romae* were surfacing in Renaissance Rome, demonstrating to antiquarians and map-makers that the monumentality of the map was germane to the richness of its description. Precisely because it was so monumental, the map could include a plethora of details, such as the division of the city into quarters, the routes of streets and their names, the location, name, function, and height of monuments and buildings. Though it mapped only the city of Rome, the *Forma urbis Romae* was the most authoritative surviving evidence for the display of monumental maps made of durable materials in public spaces.

Inspired by this Roman tradition and wishing to surpass the ancients, Renaissance patrons and authors transformed the ancient display of individual maps into a true Renaissance fashion. Paraphrasing Pliny, Leon Battista Alberti recommended the use of maps as mural decorations to instruct and delight. Paolo Cortesi regarded map murals as particularly suit-

able embellishment for the houses of cardinals. In the late sixteenth century Giovanni Battista Armenini and Gabriele Paleotti repeated the arguments of earlier art theorists, showing that the fascination with cartographic murals was still in full swing in post-Tridentine Europe.[22] John Dee made the fashion for cartographic decorations known in England, reporting that "some, to beautify their Halls, Parlors, Chambers, Galeries. Studies or Libraries . . . liketh, loveth, getteth and useth Mappes, Chartes, and Geographical Globes."[23] The widespread public display of maps in the Renaissance bespeaks not only the achievement of Renaissance mapping but also the wish of emulating Ludius's art by recreating ancient interiors in modern palaces.

Among the surviving map murals, Danti's map cycles for the Medici and the papacy stand out for their magnificence, their documented historical context, and their emblematic presentation of the full scope of Renaissance mapping. Although they were very different in content, meaning, and function, they clarify substantially the understanding of the two main branches of cartography defined by Ptolemy: geography, the representation of large regions of the worlds, and chorography, the representation of small areas. These two cycles also allow a comparison of the political and religious meanings of Renaissance maps, making it possible to see their functions within a collection of artifacts and within the recounting of church history. These extraordinary three-dimensional displays effectively connect cartography to politics, religion, encyclopedism, collecting, church history, spirituality, and much more.

The aim of this book is to recapture the context of these map cycles through a narrative reconstruction of the cultural nexus from which they emerged. This is an interpretative narrative that puts at the center the world of Renaissance maps and the people who commissioned, made, and enjoyed them. The narrative itself is an interpretative synthesis that reconstructs the interdependence of art, patronage, science, cartography, politics, and religion. Centering on two important courts, this book tells the story of how mapping became a major form of courtly art.

4

The Ordering of Maps

The cosmic imagery of the Guardaroba Nuova epitomized Cosimo I's personal iconography, but it was also appropriate to the main function of the room as a cabinet of art and curiosities for the most beautiful objects that he possessed. If, in many respects, the Guardaroba Nuova was similar to the princely cabinets that had become common in European courts, it was also exceptional for its unprecedented series of maps of the world, maps that plausibly not only related to the artifacts kept in the room but also provided a novel organizing principle for their display. Indeed, the Guardaroba Nuova holds a unique place in the history of the Medici collection and, more generally, in the history of collecting in early modern Europe. A cartographic theater of the world, it adopted the geographical order that Renaissance cosmography books used to organize universal knowledge, adjusting it to the display of an encyclopedic collection of artifacts. With his impeccable nose for novel imagery, Cosimo selected a geographical display that would have shown off his exotica, the products of unusual crafts from distant lands that were eagerly sought and exchanged among the rulers of Europe.

Cosimo I's Collection

Like other rulers, Cosimo regarded collecting as an expression of princely magnificence, intellectual sophistication, and, above all, as a manifestation of diplomatic ties and dynastic continuity.[1] As the Medici heir, he knew well that dynastic families passed their collection down through the generations, but he also knew that the famous collection of earlier Medici had been ransacked and dispersed.[2] At the time of his election, Cosimo I did not possess even a chest of medals, the most indispensable collectible of a Renaissance ruler, but he immediately invested a large portion of his exiguous funds in the acquisition of a marvelous set of medals, placing it in his bedroom. Ingrained in him was the notion that the history of his family collection, its acquisition, dispersal, and reconstitution were part and parcel of the Medici political fortune. He relentlessly reacquired the holdings of earlier Medici,

(*facing page*) Detail of fig. 4.12

either directly from Margarita of Austria or indirectly from whomever happened to have them. For Cosimo the presence of the early Medici's collection in his own ducal collection was a tangible demonstration of the continuity of Medici power from the early fifteenth century to his own rule, a theme that dominated his politics and inspired the depiction of Medici deeds in the Apartment of Leo x. In addition, Cosimo devoted immense funds to the acquisition of a stunning collection that could rival those of emperors and kings. By the time the Guardaroba Nuova was planned, he had assembled a body of Medici heirlooms for his successors. He had secured outstanding pieces on the art market. Other objects that he desired at all costs were smuggled into Florence, including the Etruscan statue that Egnazio Danti brought illegally from the Papal States. Many objects he had received as wedding presents and diplomatic gifts. The most spectacular gift came from Pope Pius IV in the form of a group of ancient life-size statues in appreciation for the ducal support in the papal election.

Like other rulers, Cosimo used his collection in different ways. Exceptional pieces, such as works by famous Florentine artists, distinguished diplomatic gifts, portraits of family members and political allies, and furniture in rare woods and in semi-precious stones embellished Cosimo's private apartment, those of his wife and children, the ceremonial spaces of his palace, and the guest rooms.[3] Used as furnishing, the collectibles in these rooms conveyed the sophisticated taste and the political alliances of the Medici dynasty. Many other objects of precious material and artistry, which had to be moved constantly to satisfy the needs of the court, were kept in the ducal guardaroba, where they were stored according to type in order to facilitate their retrieval for daily use.[4] Periodically, rare Chinese pottery, vases of oriental crystals in the shape of birds and flowers, damascene bowls and vessels, bowls in precious and semi-precious stones, and centerpieces in gold and coral were removed from the guardaroba to adorn the ostentatious Medici dinner table. Other objects, such as Mameluk carpets, Persian drapery, portraits, and religious paintings were constantly moved around to set up the guest rooms, each furnishing tailored to the nationality, interests, and rank of individual guests. Some objects, however, were singled out as especially precious and rare. Even though these exceptional pieces were used for practical needs on special occasions, they were kept in a separate room of the ducal guardaroba identified as the secret guardaroba (*guardaroba segreta*), where they were stored by type in fourteen large cupboards (the twelfth cupboard held pieces closely connected with Medici power).[5]

The inventories of the ducal palace recorded Cosimo's trove of *naturalia*, *artificialia*, and *exotica* of all times and places, and still today these lists convey a sense of amazement at the sheer quantity of the Medici collections, their preciousness, and rarity. But these same inventories, particularly one taken in 1553, suggest that if the size, content, and preciousness of Cosimo's collection could rival the finest European collections, its display was anything but impressive. Beautiful and rare artifacts were spread all over the palace, but no special room had been designed for the display of the most outstanding pieces, or for providing the quiet and seclusion indispensable for their study and contemplation. Even the secret guardaroba, a fairly large room with imposing cupboards and constant traffic of people and goods, was essentially a storage place, in which artifacts were either amassed in closed cupboards or assembled on top of them or hung randomly on the walls. In 1554 the duke who enjoyed the private contemplation of his collection, solved the problem of private space by having a small study built near the guardaroba with the specific purpose of "retiring in a private room."[6]

In this little, private space, alone or in the company of selected friends and artists, Cosimo indulged in the study of his collectibles, which he would retrieve a few at a time from the secret guardaroba. There he personally cleaned with a chisel the Etruscan statuettes recently discovered in Arezzo with the help of the sculptor Benvenuto Cellini.

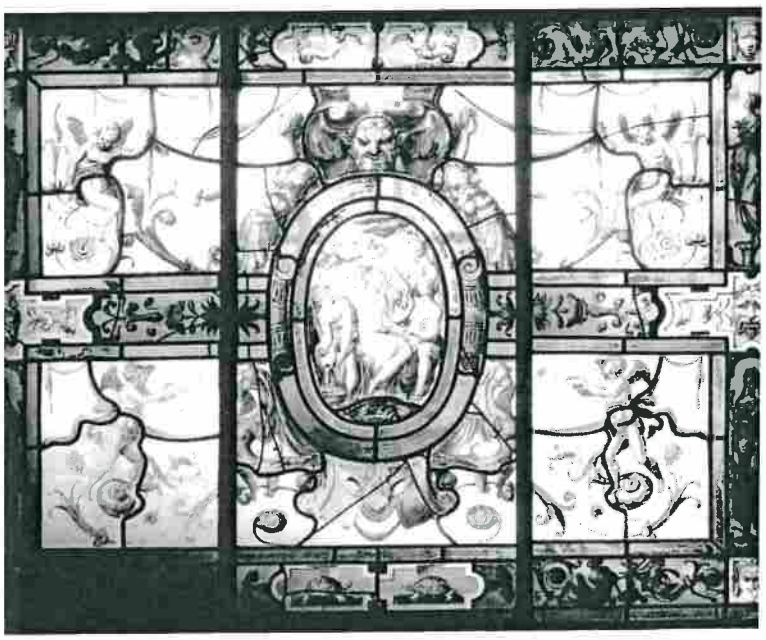
But obviously the Medici collections demanded a more compelling display, a display that would present them as symbols of the duke's intellectual and political prestige and would integrate them within the ubiquitous theme of the palace, that of Medici glorification and dynastic continuity.

Cosimo I's Studies

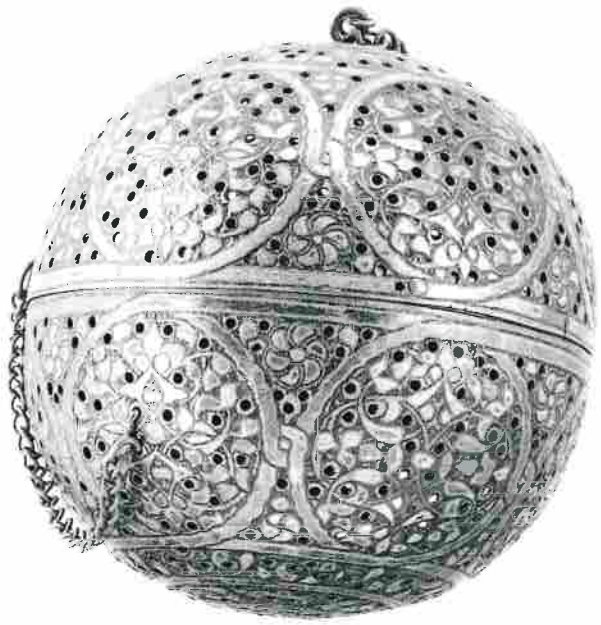
Acutely aware of the power of representation, Cosimo must have realized that the symbolic meaning of the collection he so passionately assembled could fully be expressed only in rooms appositely designed for its display. In the late 1550s, in conjunction with the remodeling of his palace, he asked Vasari to transform some small rooms of the palace into collector's studies. Such rooms had become a common feature in the residences of rulers and aristocrats as well as in the houses of scholars, merchants, and professionals, and had been a favorite of the earlier Medici. Lorenzo the Magnificent had a collector's study filled with artifacts that he prized not only for their intrinsic monetary value, but also as gifts of important people and as examples of unusual crafts. Cosimo made a point of reacquiring as many of Lorenzo the Magnificent's collectibles as he could.

Eclectic in character, encyclopedic in scope, and elegant in furnishing, Cosimo I's cabinets of art and curiosities were not ceremonial spaces but rather secluded parts of the princely palace. No record has survived of how his collector's studies were actually used, but it is plausible that, like similar, better documented studies, they were made primarily for his own enjoyment. Some selected guests, usually fellow rulers, ambassadors, and high-ranking collectors, might have been invited to visit them as an acknowledgment of their high distinction. The public at large knew of Cosimo's studies through literary descriptions, diplomatic reports, and hearsay, but especially through the reading of Vasari's *Lives*, where their content and decoration were minutely recorded.

4.1 Glass Window. Florence, Palazzo Vecchio, Studiolo di Calliop



Cosimo's intention to integrate his collection with his cultural claims is particularly explicit in the Studiolo di Calliope, a small room in the Apartment of the Elements (Fig. 4.1).[7] For this study, Vasari painted a sophisticated ceiling panel, designed a stained-glass window, had



4.2 Damascene spherical perfume-burner, Syria, fifteenth century, brass, silver, and gold. Florence, Museo Nazionale del Bargello

4.3 Vincenzo Danti, Sportello for one of Cosimo's studies, ca. 1560, bronze. Florence, Museo Nazionale del Bargello

lavish furniture built, and crimson velvet applied to the wall. The Studiolo di Calliope contained mainly small statuettes and reliefs in bronze and it was complementary to the Studiolo di Minerva, another small room in the same apartment, which instead displayed small objects in marble.[8] The objects displayed in the Studiolo di Calliope had been removed from the twelfth cupboard of the secret guardaroba and selected according to the primary criteria adopted in most European collections: their small size and the material from which they were made. The organization of a collection by material enjoyed a very distinguished precedent in Pliny's *Natural History* and it was used in the royal collections at Ambras, Prague, Munich, as well as in the collections of sixteenth-century scholars and apothecaries. Traditional though it was, the organization of a heterogeneous collection by material presented the advantage of blurring the boundaries between natural and artificial, carved and uncarved, near and exotic, modern and ancient. It also provided a visual experience that, in due course, would facilitate the understanding of the history of the natural world.[9]

But a more attentive analysis of the beautiful little objects selected for the Studiolo di Calliope reveals that they were displayed in such a way as to evoke Cosimo I's dynastic and cultural claims. The Etruscan statuettes were displayed alongside the medieval heads by Nicola Pisano removed from his pulpit in Pisa Cathedral, a bronze relief of the Virgin by Leonardo da Vinci, and numerous works by Donatello, including the death mask of a Medici lady.[10] This display of Etruscan, medieval, and Renaissance bronzettes was a visualization of the cultural and artistic continuity between the old and the new kingdoms of Etruria, a theme that court

humanists, such as Giambattista Gelli and Pier Francesco Giambullari, developed in their historical writing, and Giorgio Vasari applied to his interpretation of Tuscan art.[11] Similarly, the twenty-four miniature portraits of the Medici family made by Bronzino's workshop, which hung on the door of the studiolo that led to a secret passage, did not simply represent family members but, by dividing them according to the two different branches of the family, restated once again the legitimacy of Cosimo I's rule.[12] Also the precious artifacts from exotic lands that were included in the Studiolo di Calliope may have exemplified Cosimo I's political claims, such as the direct connection with Lorenzo the Magnificent who had once owned the Islamic incense-burners still today kept in Florence (Fig. 4.2), or the relationship he forged with Spanish political patrons who almost certainly gave him the eight miniature Aztec animal heads that Benvenuto Cellini had mounted in gold.[13] The relevance of the Studiolo di Calliope to Cosimo's persona would have been even more evident if Vasari's proposal to display there the Etruscan statue *Chimaera* had been feasible (the statue was too large to be included in the studiolo). Interpreted by Vasari as an allusion to the Capricorn of the duke's impresa, this famous Etruscan bronze would have fused the interrelated themes of the Studiolo di Calliope: the artistic and cultural continuity between the new and old kingdom of Etruria, and Cosimo I's legitimacy as the heir of the Medici dynasty.[14]

Less public, but equally important to the relationship between Cosimo's persona and his own collection, were the two other studies that the duke had refurbished in his private apartment around 1560. The very small room known as the Tesoretto was furnished and decorated as the safe for the papers of a just and learned ruler (Fig. 4.4). Its ceiling fresco, a collaborative effort of Cosimo Bartoli and Vincenzo Borghini, was modeled on Raphael's Stanza della Segnatura and, like the Vatican room, it suggested the harmony of divine and terrestrial knowledge as the supreme attribute of an inspired ruler.[15] Cosimo I's second study, located below the Tesoretto, was even more secret. Its main feature was a safe where, according to Vasari, "important papers of the Duke" (*scritture d'importanza del Duca*) were kept.[16] The centrality of the safe was marked by the bronze door made by Vincenzo Danti (Fig. 4.3). Although the subject of Danti's relief has been variously interpreted as *Augustus Burning the False Books of the Sibyls* or as *The Burning of Numa's Books*, it is generally acknowledged that its iconography referred to the classified contents of the papers Cosimo kept in the safe and, more importantly, to illustrious Roman models of rule.

The duke's efforts to organize his collections coherently did not stop at the display of his small studies in the ducal palace, but also involved another major project pertaining to large-scale ancient statues, the most prestigious collectibles of any Renaissance ruler. Around 1560 he planned and realized an *antiquarium* in the great hall on the first floor of the Pitti Palace, the property acquired with Eleanor's dowry in order to accommodate the growing family and court. The *antiquarium* in the Pitti Palace conformed to the sixteenth-century fashion of displaying ancient statues in the courtyard of aristocratic residences. Pope Innocent VIII had envisaged the first of such courtyards in the Belvedere Villa in the Vatican Palace, and noble families had followed the fashion throughout Italy. The statues displayed in this grandiose hall during Cosimo's rule were recorded in the 1568 edition of Vasari's *Lives*, specifically in the appendix entitled, "Antiquities that are in the hall of the Pitti Palace" (*Anticaglie, che sono nella sala del Palazzo de' Pitti*).[17] There were twenty-five life-size or over-life-size classical statues Cosimo had either inherited, acquired, or received as diplomatic gifts, and

4.4 Tesoretto. Florence, Palazzo Vecchio

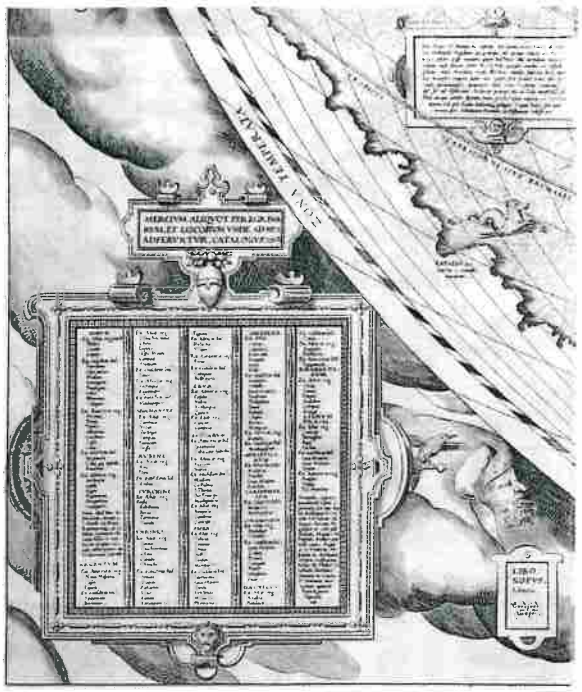
this collection included some renowned pieces such as the Medici Venus. The great hall in the Pitti Palace was as much a magniloquent display of the Medici collections of ancient statues as it was a demonstration of the political power and diplomatic ties that had made those acquisitions possible.

Around 1560 Cosimo's collection was effectively distributed in specialized rooms that enhanced the beauty and preciousness of the artifacts while, at the same time, reinforcing his public persona. The small artifacts tastefully displayed in collector's studies, the personal papers secured in private studies, and the life-size statues located in the Pitti hall: all converged to present him as a sophisticated collector, a virtuous and inspired ruler, a talented diplomat, and a legitimate heir of the Medici dynasty. It is from this reorganization of the Medici collection in specialized rooms that emerged the novel idea of having a cabinet of art and curiosities arranged geographically.

Collecting According to Maps

Unquestionably, the Guardaroba Nuova was meant for the display of a coherent group of distinguished pieces selected from Cosimo I's impressive holdings. Its function as a cabinet of art and curiosities is documented in its original name and confirmed by Vasari, who, in the 1568 edition of his *Lives*, published the list of Cristofano dell'Altissimo's portraits in the Guardaroba Nuova immediately following the list of the statues in the Pitti *antiquarium*, thus implying the similar function of the two halls as showpieces for Cosimo's collections. But how did the Guardaroba Nuova fit in the organization and display of the Medici collections around 1560? Which artifacts were kept in the room? Did the Guardaroba Nuova depart from or conform to the organizing principles of collections in Florence and elsewhere?

When one looks for an explicit answer to these questions the documentary evidence is regrettably absent. Vasari vividly described the planned iconography of the Guardaroba Nuova, but he was extremely vague about the objects to be kept in the room, "the most important, precious, and beautiful things," and inexorably silent on the organizing principles of their display. Even the inventories of the Medici guardaroba under Cosimo, which are so instrumental in the historical reconstruction of other rooms of the ducal palace, are of little help in understanding the Guardaroba Nuova. The two most relevant inventories, one made in 1570 when the courtier in charge of the guardaroba changed and another made in 1574 at the duke's death, listed the objects kept in the room, but these inventories did not reflect any particular order.[18] According to these inventories, the richly decorated Guardaroba Nuova that had demanded so much effort in terms of funds, planning, and cartography, was finally used as an ordinary room of the general guardaroba: to store objects that, although valuable for their material and artistry, were used mainly as furnishing for the ducal court. Pillows, tapestries, hangings, fabrics, and occasionally semi-precious stones fill the cupboards with no apparent order. Did these inventories reflect the intended organization of the room? Or were they compiled after the intended cosmographic meaning of the room had already been abandoned? The evidence drawn from these inventories would seem to confirm this. But such an interpretation is untypical of the very practical and parsimonious Cosimo and in sharp contrast to his attitude towards his own collection around 1560.



4.5 Abraham Ortelius, detail of fig. 5.22: *Mercium aliquot peregrinarum, et locorum unde ad nos adferuntur, catalogus* (Catalogue of Some Foreign Goods, and of the Places from which They Are Brought to Us)

4.6 (*facing page*) Egnazio Danti, *Indostan fuori il Gange* (Map of Hindustan Outside the Ganges), not dated, panel. Florence, Palazzo Vecchio, Guardaroba Nuova

Instead, if attention is focused not on the documentary evidence provided by the Medici inventories but on the visual evidence provided by the room's iconography, a very different picture emerges. The iconography of the Guardaroba Nuova strongly suggests that the objects had to be stored geographically, namely their place in the cupboards related to the geographical places represented by the maps. The maps on the cupboards' doors were to be a visual catalogue of the collection. They were labels to locate easily the objects both in the room's cupboards and in the world's geography. As the maps dictated the overall order of the iconography, the frieze of plants and animals, and the busts of ancient rulers, they also dictated the display of the samples of goods and curiosities of the world. In this respect, the room was an exceptional attempt to organize a major collection of artifacts according to maps.

In the Guardaroba Nuova the maps themselves hold the interpretative key to the organizing system of the artifacts of the world. The legends of the maps succinctly narrate the history of a place and the characteristics of its people, but they also list the objects for which the mapped place was renowned. The products, artifacts, and resources of a place were customarily reported in brief form in the cartouches of Renaissance printed maps. The Dutch cartographer Abraham Ortelius even included in his world map of 1564 a catalogue of precious goods and the places where they could be found (Fig. 4.5).[19] In the legends of Danti's maps, however, the products of each place were so meticulously listed that the viewer is encouraged to interpret them not only as an illustration of the mapped place but also as a reference to the artifacts to be placed behind the map panels. Such congruence is even more evident once Danti's legends are read in conjunction with those by Bonsignori. Written after 1577, Bonsignori's legends make no mention of the natural and artificial products of the mapped lands, perhaps an indirect indication that the original function of the maps as a visual catalogue of the artifacts kept in the room had already been abandoned. But Danti's legends tell a very different story.

His legend of the map *Hindustan Outside the Ganges* (*Indostan fuori il Gange*), for instance, exemplifies how precious products and marvelous animals were associated with the mapped region (Fig. 4.6):

> This part of India outside the Ganges extends up to the Cathay and it includes many provinces, which contain numerous notable things. In Ergimut in the said province one can find the most perfect musk. In the mountains of Ava one can find very beautiful rubies, and in the mountains of Satgaym, beside rubies, one can also find diamonds. In Caindu and the nearby cities people spend fifteen corals in exchange for money, and in

the Salty Lake one can fetch very beautiful pearls. In the territory of Carazan one can find snakes of amazing length, and in the mountains of Lachi there are very ferocious lions. In the province of Agrigaia there are oxen as large as elephants, which have wool as fine as silk. In the mountains below Carazan one can find also rhinoceros. It is said that in the Desert of Camul there are spirits that deceive travelers by showing them the wrong way in order that they will get lost in the desert.[20]

If the spirit of the desert could hardly have been stored behind this map, the musk, pearls, corals, and precious stones, with which Cosimo I's collection was rich, could be easily found there. Also the exotic and marvelous animals of this region could have been present in the room, either metonymically, through a horn, a tooth, a piece of skin, or by derivation, through a product from the animal in question, such as the very soft wool of the "oxen as large as elephants" (*buoi grandi come elefanti*), or by depiction in the planned but never realized frieze below the map. In the legend of the map of China it can be read that the region was renowned for its porcelain (the legend even provides a recipe for the making of porcelain), for the printing press, which "they had before us" (*hanno avuta prima di noi*), for drapery in silk, cotton, and wool, and for powerful artillery, while the Chinese sea is rich in pearls.[21] The legend for the map of Indochina explains that it was an area rich in gold, silver, and precious stones which the King of Portugal brought to Europe in great quantity. India was celebrated for spices and precious stones, Ceylon for cinnamon, rubies, sapphire, topaz, and granites. The mountains of the province of Bedane in central Asia produced "beautiful balas" (*balasschi bellissimi*), orange rubies. The province of Arachosia in Asia was acclaimed for lavender and myrrh. Persia was very fertile and well known for the variety and abundance of flowers, samples of which could either be kept dried in the cupboard or depicted in the planned frieze below the map. Arabia had spices, mines of gold, silver, and many other metals. Anatolia and Syria were famous for their ancient scholars of arithmetic and astronomy, whose books and instruments could be kept in the corresponding cupboard. Livonia and Lithuania were celebrated for leather, sables, and ermines. The British Isles for gold, silver, and especially for the "very refined tin that looks like silver" (*stagno finissimo che pare argento*), Scotland for, "a certain stone that burns amazingly like coal and it is said to be a kind of agate"(*una sorta di pietra, che arde mirabilmente come il carbone, qual dica(n)o ch è una specie di Gagate*). The Island of Madagascar was rich in silver, amber, saffron, cloves, red sandalwood, beside many other spices, flowers, and animals that could have been depicted in the frieze below. The Cape of Good Hope was well known for its monkeys, peacocks, and ivory. New Spain was rich in minerals, gold, silver, copper, tin, and iron, as well as forests of pine trees, cypresses, oaks, and cedars.

The interpretation of the maps of the Guardaroba Nuova as a visual catalogue of the artifacts kept in the room and of the geographical order as a system for their retrieval is suggested by the very layout of the Guardaroba Nuova and by the maps themselves. Such an interpretation is further confirmed by the fundamental analogy between the Guardaroba Nuova and the Studiolo of Francesco I, a cabinet much better documented in all its planning stages, which was designed after the Guardaroba Nuova and which, it should be emphasized, was connected to it by a secret stairway (Fig. 4.7).[22] The comparative analysis of the two Medici cabinets of art and curiosities is germane to the very idea of displaying a collection of artifacts geographically, or simply, of collecting according to maps.

Vincenzo Borghini invented the program for Francesco I's Studiolo at Vasari's request.

4.7 Studiolo of Francesco I. Florence, Palazzo Vecchio

In two famous letters to Vasari, Borghini not only discussed the iconography of the Studiolo based on the four elements, a scheme often used in European collections, but also explained the criteria of his iconographic invention: "It seems to me that the invention ought to conform to the material and quality of the things that have to be stored there, so that it [the invention] will make the room pleasing, and it would not be entirely inappropriate, in fact that it would be a sign, a sort of inventory to retrieve things, referring the figures and the paintings, which are above, around, and on the cupboards, to what the cupboards contain."[23] The iconography of the Studiolo had to be closely related to the objects that were to be kept there. Moreover, the painted doors were a visual catalogue of the collection or, to use Borghini's own words, the invention was, "a sign, a sort of inventory to retrieve things." Obviously, Francesco I's Studiolo and the Guardaroba Nuova shared the idea of connecting the artifacts with the painted doors visually and conceptually.

Borghini's invention for Francesco's Studiolo was inspired by the interaction between nature and art, and was based on the traditional scheme of the four elements, earth, air, fire, and water. Different kinds of objects were connected with each of the elements. Crystals, porcelains, glasses, rings, and precious stones were to be associated with the element of air; horns and bones of animals, medicines and mixtures (*composti*), iron and other metals related to fire; pearls and corals to water; marbles such as porphyry, jasper, chalcedonies, and agates, as well as precious woods such as ebony were connected to earth. This scheme was not unusual for displaying collections of *naturalia*, *artificialia*, and *exotica* in the second half of the Cinquecento. But what made Borghini's invention highly original was the fact that the traditional scheme of the four elements was illustrated by panels representing the making, effects, and myths concerning each element. Moreover, Borghini made clear that the artifacts selected for the Studiolo had to be memorable and rare, "referring always to singular things that bring with them a certain marvel, because common things ought not to be placed in such rooms."[24] In a subsequent letter to Vasari, he made clear that the content of the collection dictated the iconography, not vice versa. Borghini wrote:

> Above all I need to know that the objects, which have to go in the cupboards, have been defined (take note of all this part that I am about to say) so that I can adjust the exterior paintings to the things inside; if the cupboards correspond to the things that are above, they would come even better, that is: things relating to fire, such as distillations and artifacts molded with fire in iron, steel, glass, and similar materials, would be under the statue of Vulcan and the element of fire; medals, artifacts in gold, rubies and minerals of similar things under [the statue] of Pluto and Ops and the element of earth; similarly, jewels under Juno, crystals under Zephyrus, pearls under Venus, and so forth; having established this partition, I need to know how many stories go in each cupboard and what it will contain. For instance, in the first cupboard, which has two exterior panels to be painted, will be located precious medicines, such as balsams, unicorn's corn, remedies against poisons, and similar things; in another [cupboard] there is only one panel and inside there will be medals, and so forth.[25]

In Borghini's invention, the four elements and the objects were further inserted in a cosmographical scheme of correspondence, which included the four cardinal points, pagan gods and goddesses, the dichotomy male–female, and much more. But in the letter dated

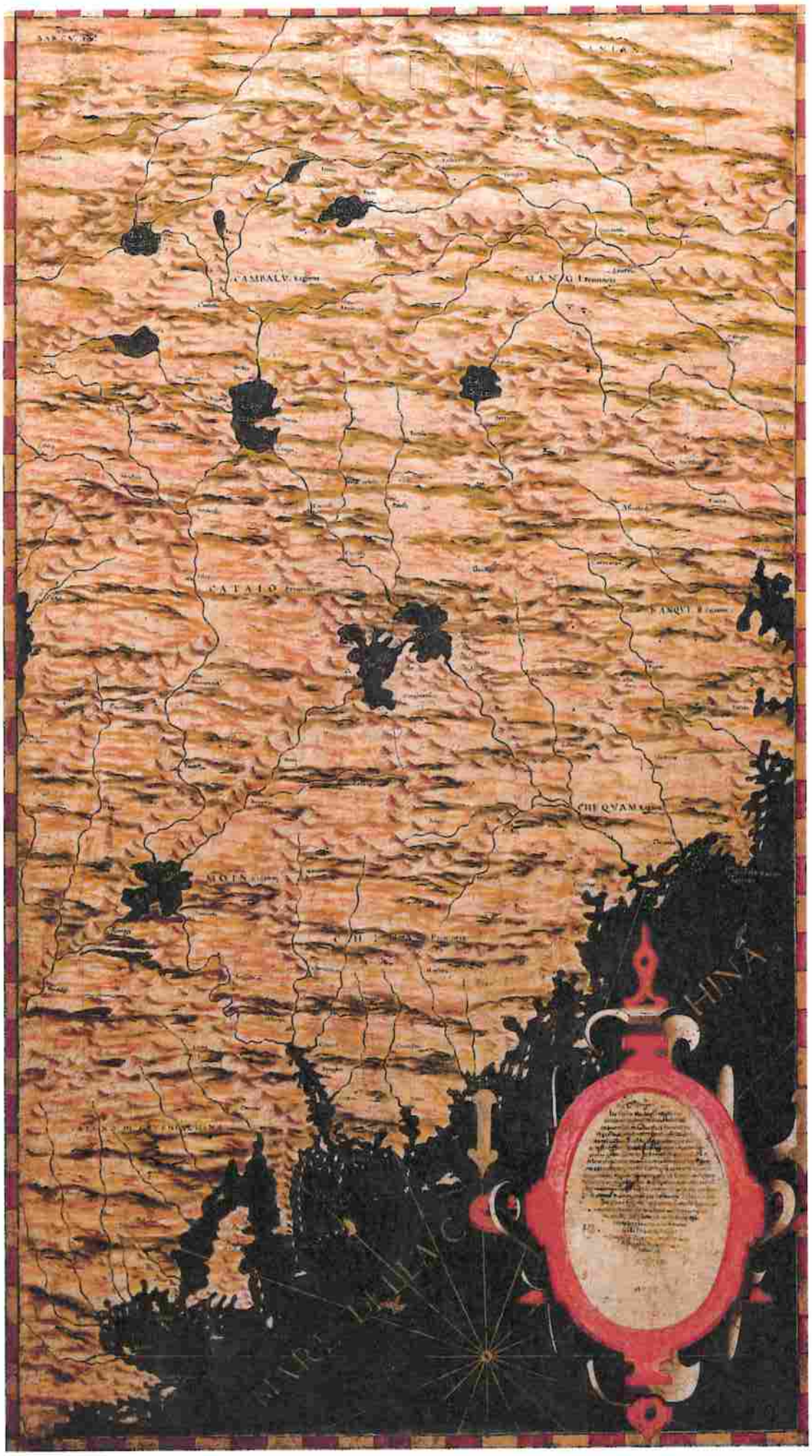
3 October 1570, Borghini also discussed another element, which is germane to the iconographic invention of the Guardaroba Nuova. In the effort to provide both a coherent program and a variety of subjects that would please Francesco I, Borghini suggested painting, "female personifications of the provinces: for example, in Germany there are excellent clocks and machines, and in France beautiful works made out of gold; on the cupboards where similar objects were to be kept there could be painted, in a little panel, a personification of Germany holding these clocks and machines in her hands, as if it were the reverse of a medal or other similar things."[26] Later Borghini discarded the idea of representing personifications of the provinces on the panels as unsuitable to the physical space of Francesco's Studiolo. But his association of precious objects with regions of the world, which incidentally also had ancient precedents in Strabo and Pliny, further supports the interpretation suggested here that at the Medici court artifacts could be grouped according to place and, consequently, displayed according to maps.

In the Guardaroba Nuova Cosimo I imagined a unique cabinet of art and curiosities in the panorama of Renaissance collections, one that not only was organized geographically but that would have also given unprecedented display to his exotica. In fact, Cosimo and his advisers must have had in mind a specific group of artifacts when they envisaged the geographical arrangement of the room. Borghini's letters on Francesco I's Studiolo clearly stated the mode of proceeding: first to select a body of objects to be stored in a cabinet of art and curiosities and then devise the iconography based on the nature and character of the selected objects, not vice versa. The geographical order of the Guardaroba Nuova presenting 39 maps of non-European regions and only 14 maps of Europe must have seemed particularly suitable to the proper display of Cosimo's artifacts from remote regions. Indeed, it would have greatly enhanced the visibility and relevance of his exotica within the Medici collection while, at the same time, integrating them in the order of the world.

Cosimo I's Exotica

Exotic goods and artifacts featured in every European collection of some distinction. Loads of exotica were brought to the ports of Europe by Portuguese ships sailing the new sea-route to Africa, Brazil, India, Indochina, and the islands of South East Indies: spices and slaves as well as beautifully crafted objects in metal, ivory, and precious stones, unusual plants and animals, and foreign arms. Also the Spanish ships brought a variety of artifacts from the West Indies: gold and silverware, which were systematically melted down and converted into money; jewels in precious and semi-precious stones, which were almost invariably dismantled and mounted anew to conform to European fashion; and feather artifacts. Feather works, oliphants, damascene metalworks, Meso-American masks, but also Chinese porcelain, and Persian carpets were among the ultimate exotica that filtered into European collections. Coming from distant lands and made out of unusual materials or unknown crafts, these exotica carried the components of the marvelous. They were collected and displayed along with the marvels of the ancient and pagan world, and praised for their craftsmanship, strangeness, and rarity. Metonyms of a distant world, such exotica evoked fragmentarily but tangibly lands far away.[27]

Exotica were also showcased as symbols of their owner's network of friendships, political alliances, and diplomatic ties. Some exotica, such as featherworks, acquired value, at least initially, because of their close connection to the emperor. The Spanish conquistador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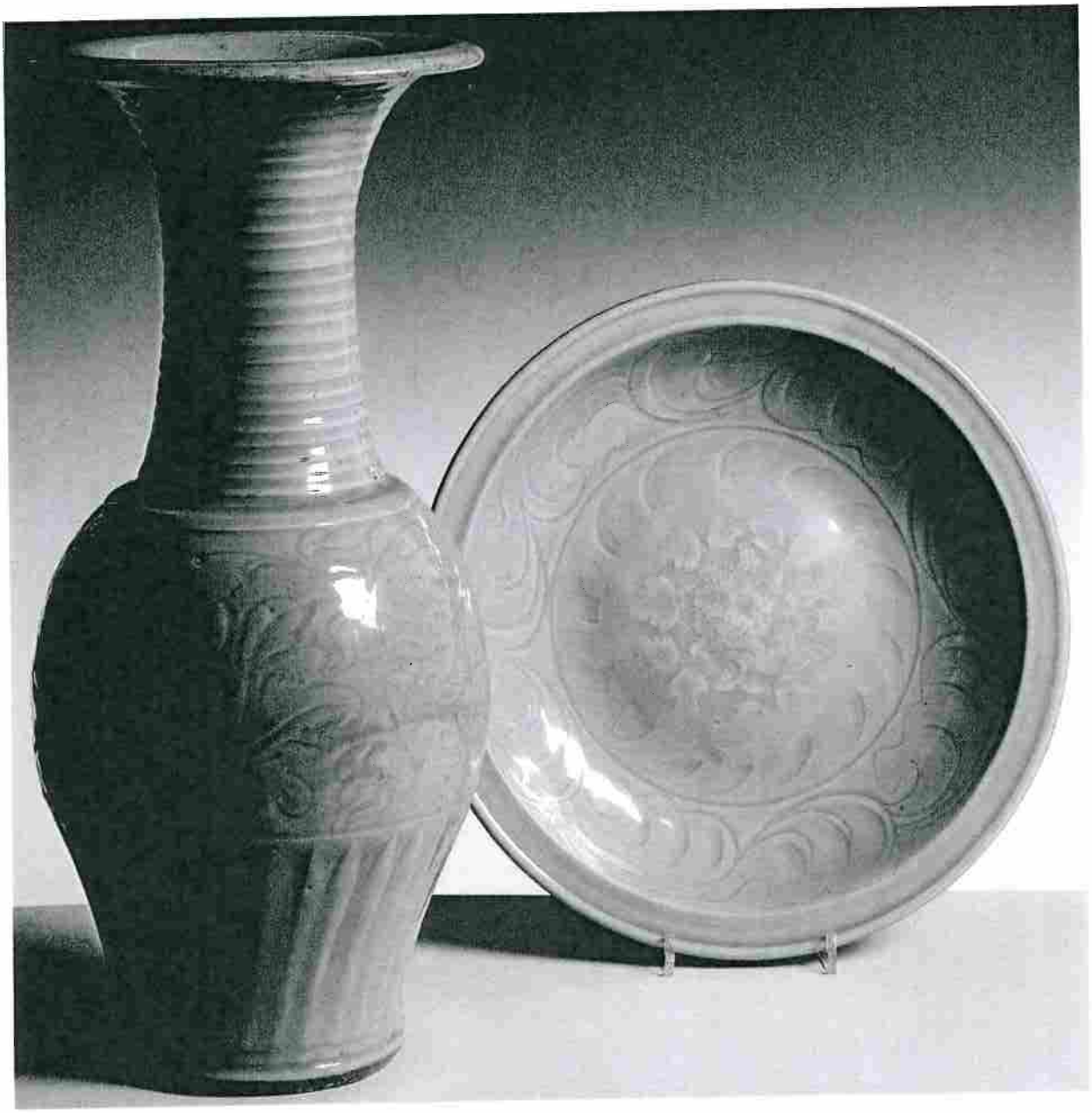


4.8 Celadon Plate and Vase, China fourteenth to fifteenth century, porcelain. Florence, Museo degli Argenti

Guardaroba Nuova, the maps of Asia and America appeared on the doors of the same cupboards so that any object coming "from the Indies" (*dalle Indie*) could be stored there with no further specification of whether it came from the East or the West Indies. Maps of Europe and Africa shared the same cupboards. Also in this case a rather loose arrangement must be imagined, although the European artifacts would have been distinguished immediately from African ones. On the other hand, the connection between some artifacts and a region of the Old World might have facilitated a more rigorous arrangement for some European products, such as the connection between glassware and France, or scientific instruments and Germany mentioned by Borghini. The arrangement of the four continents in the

4.9 (*facing page*) Egnazio Danti, *China* (Map of China), 1575, panel. Florence, Palazzo Vecchio, Guardaroba Nuova

Guardaroba Nuova corresponded to the way the world was represented in Renaissance world maps: Europe and Africa shared the center while Asia and America occupied the periphery to the east and the west respectively.

The geographical display adopted in the Guardaroba Nuova and the use of maps as a visual catalogue to the artifacts kept in the room was a novelty in European cabinets of art and curiosities, but a novelty that relied on the Renaissance use of Ptolemy's geographical order to organize encyclopedic knowledge.

Ptolemy's Geographical Order

Ptolemy's geographical order was well known in the fifteenth and sixteenth centuries thanks to the diffusion of his *Geography*, the most authoritative geographical text in Renaissance Europe. Unknown to the Latin West during the Middle Ages, Greek manuscripts of Ptolemy's *Geography* arrived in Florence at the very end of the fourteenth century together with Manuel Chrysoloras, the scholar of the Greek language, who planned a Latin translation which was eventually completed by his pupil Jacopo d'Angelo in 1406. The eight books of Ptolemy's geographical manual aroused an immediate interest among scholars, humanists, and

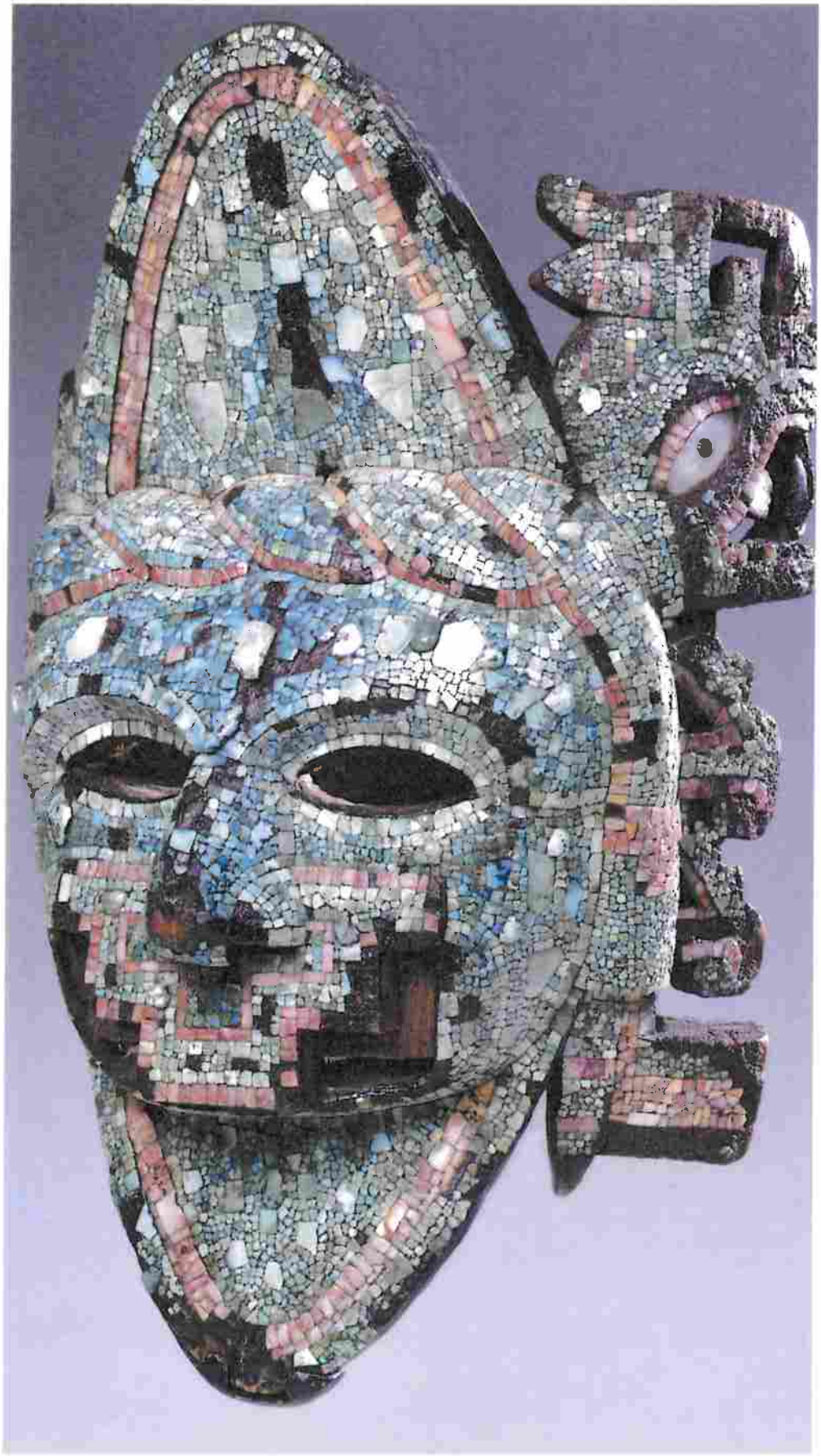
4.10 Falcon hood with ivory stand bearing the Medici-Toledo coat of arms, ca. 1550, leather, ivory and feathers. Florence, Museo Nazionale del Bargello

4.11 (*facing page*) Egnazio Danti, *Armenia* (Map of Armenia), not dated, panel. Florence, Palazzo Vecchio, Guardaroba Nuova

merchants, who were all obsessed with the measurement of the universe, the philology of ancient texts, and the reconstruction of the classical world. Ultimately, Ptolemy's geographical manual had a lasting influence on Renaissance mapping comparable only to the significance that Pliny's *Natural History* had on natural philosophy and Vitruvius's *Ten Books on Architecture* on Renaissance architecture.[33]

The major contribution of this second-century manual of geography to map-making consisted in connecting terrestrial locations to astronomical observations: places on earth were located on an imaginary spatial grid that covered the earth's globe according to theoretical coordinates of latitude and longitude. Book One started with a theoretical discussion of geography, distinguishing geography, the graphic representation of large parts of the world,


ARMENIA
PARTE DEL MARE
PARTE DEL MARE
GIORGIANA



4.12 Mixteco-Pueblo Mask, wood and mosaic in turquoise and shell. Rome, Museo Nazionale Preistorico Etnografico L. Pigorini (MPE 4213)

4.13 Egnazio Danti, *Nuova Spagna* (Map of Mexico), 1564, panel. Florence, Palazzo Vecchio, Guardaroba Nuova

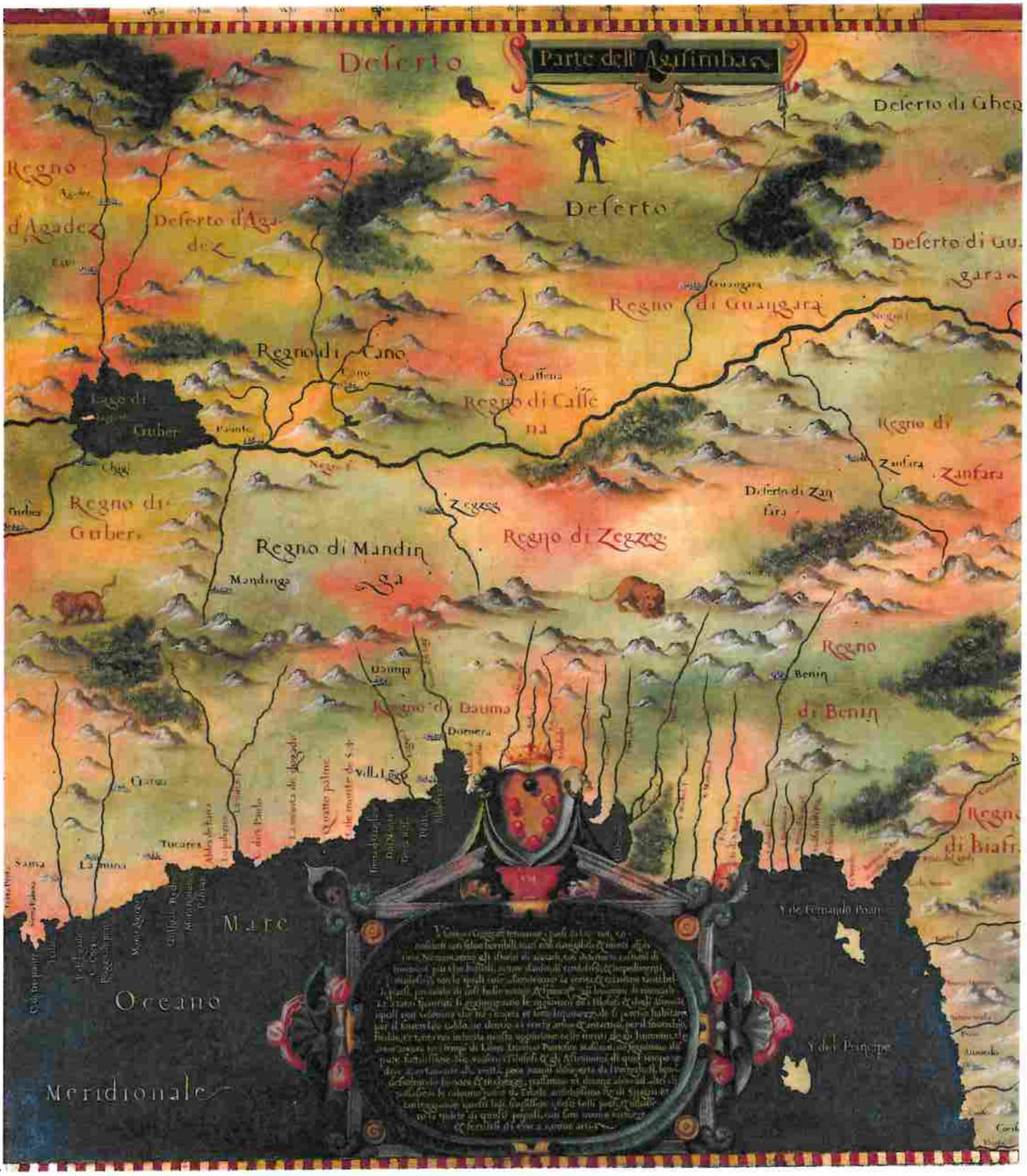
4.14 Oliphant bearing the Medici-Toledo coat of arms, Central Africa and Florence, ca. 1539. Florence, Museo di Etnografia e Antropologia

from chorography, the graphic representation of smaller parts of the world. It included an explanation of different projections that maintained the proportions of distances between the sphericity of the earth and the flat surface of the map. The remaining seven books included a brief verbal description of the world divided into three parts and a list of geographical coordinates for about 8000 places of the known world, which also had a tripartite organization.

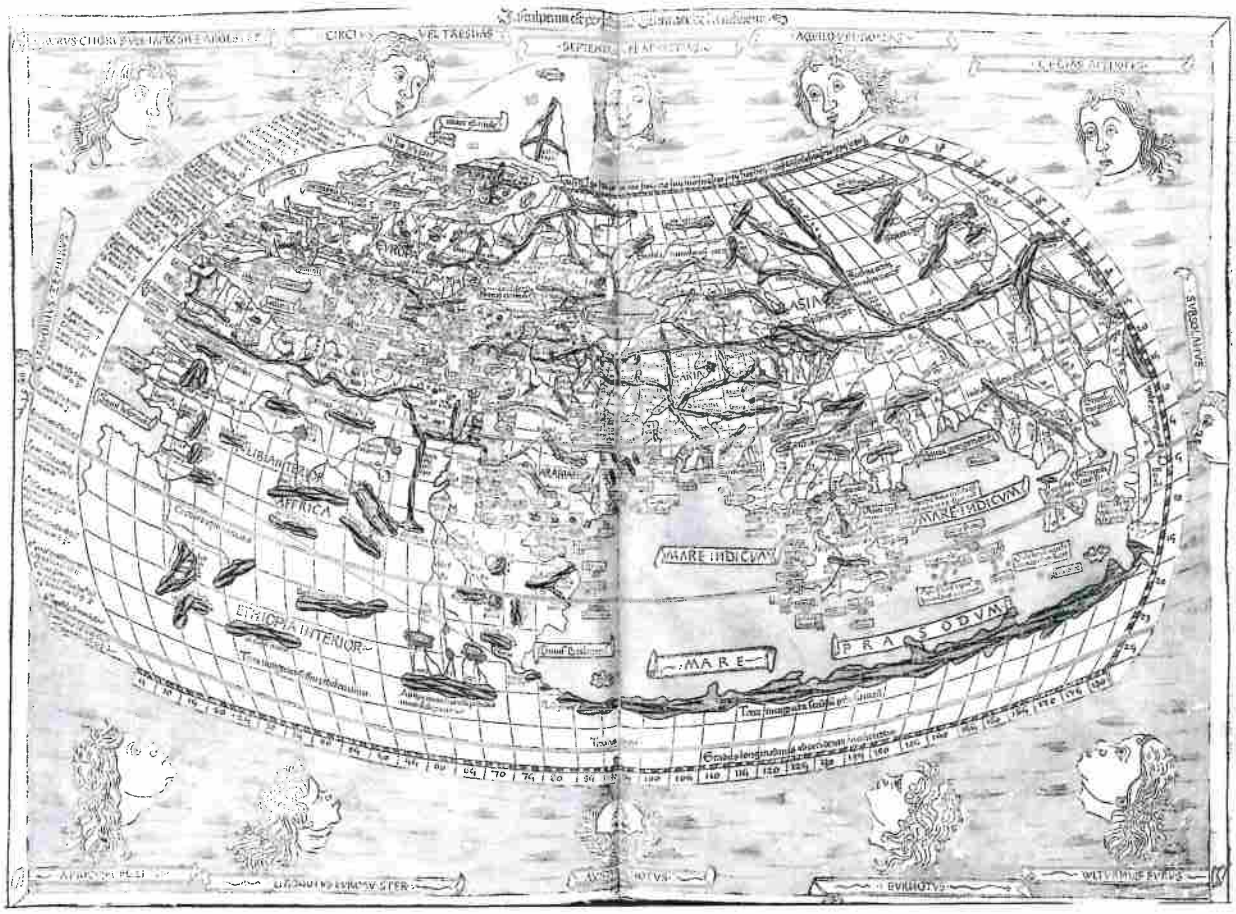
Indeed, Ptolemy's geographical manual was organized according to the three continents that made up the known world: Europe, Africa, and Asia. Ptolemy discussed the known world as a whole in a general table, which he called the "table of our world" (*tabula nostri orbis*) at the end of Book Seven, but then divided it into three continents, which in turn were further divided into smaller parts. In Book Eight, the last book of the manual, each region of the world was discussed independently and introduced by a separate heading: "First Table of Europe," "Second Table of Europe," and so forth for each continent. Ptolemy did not number the "table of our world," but he inserted the tables that followed it in a tight sequence. So the first table of Europe always corresponded to the British Isles, the second table of Europe to Spain, the third to France, and so forth. Similarly, the first table of Asia always represented Anatolia, and the last table of Africa always represented central Africa.

Ptolemy's geographical order moved from the general to the particular, from the world map to the maps of continents and regions, and in this respect, it was structurally different from the circular order of a periplus, a text describing the circumnavigation of islands and continents, that started and ended in the same place. Ptolemy's order fostered the progressive move from the global to the local and the syncretistic view of the relationships between the whole and its parts. It also composed the different parts of the earth's globe in the coherent architecture of the universe.

Ptolemy's sequence of tables for the world's regions was fixed in the text and thus fully conveyed in the manuscripts that filtered into the West, including in those that did not include maps. Renaissance editors, however, interpreted Ptolemy's "tables" as maps, even though the word "table" could refer to both a text and an image. Thus they illustrated their



4.15 Stefano Bonsignori, *Parte dell'Agisamba* (Map of Côte d'Avoire), 1580, panel. Florence, Palazzo Vecchio, Guardarob Nuova



4.16 Map of the Known World, woodcut, from Ptolemy, *Geographia*, Ulm 1482. Princeton University Library

editions of Ptolemy's *Geography* with one world map (Fig. 4.16), which was not numbered, and with twenty-six regional maps: ten maps of Europe, four of Africa, and twelve of Asia. Moreover, the Renaissance editors reinforced the connection between text and maps that was implicit in Ptolemy's manual: they inscribed the pertinent text from Book Eight on the back of each map, and used the heading of each section in that book as the title for each corresponding regional map.[34]

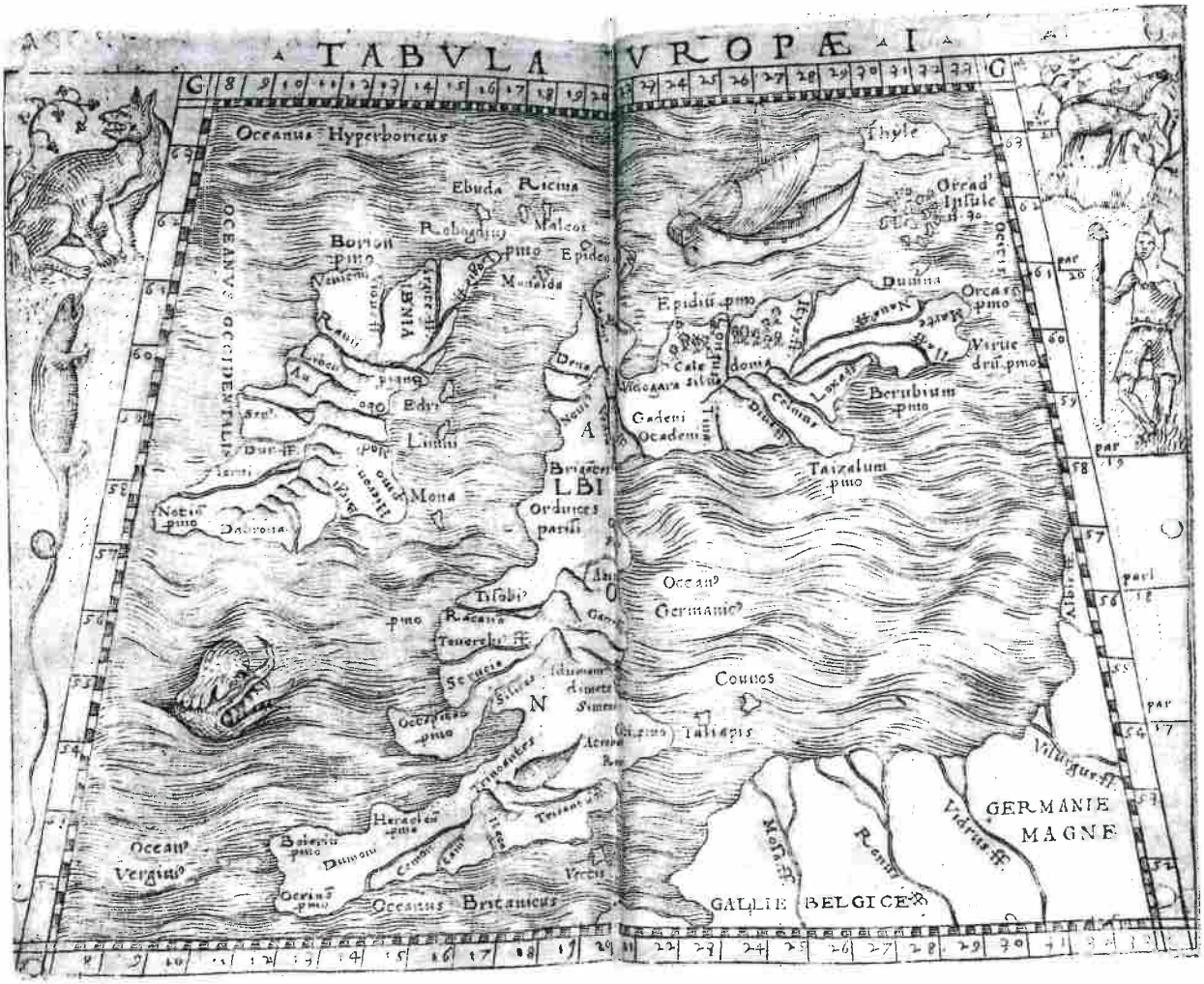
Significantly, however, Ptolemy's sequence of maps was adopted not only for the Renaissance editions of his text, but also for the mapping of the world Ptolemy did not know about. As new lands were discovered in the fifteenth and sixteenth century, they were interpreted as extensions of the Ptolemaic world to the north and the east, and maps illustrating Northern Europe, Central and South Africa, Southeast Asia, and the West Indies were integrated within the Ptolemaic world. Later, when sailors, scholars, and map-makers realized that the West Indies were physically separated from Asia and so large as to constitute a continent in itself, they added a fourth part to Ptolemy's traditional three. Ptolemy's rigid order was expanded to include the continent of America and modern maps were added to the canonical 26 maps (in addition to the world map) that Ptolemy had made.[35]

It is this modified Ptolemaic order integrating ancient geography with modern discoveries that was widely used in the sixteenth century, both in the editions of Ptolemy's *Geography* as well as in cosmography books, atlases, and in the Guardaroba Nuova.

Indeed, the Renaissance editions of Ptolemy's *Geography*, which were highly praised as reprints of an ancient text, were also valued as the repository of the mapping of the modern world. Although the geographical information provided by the modern voyages and discoveries was disseminated in the numerous printed maps that appeared in great numbers during the fifteenth and sixteenth centuries, the most comprehensive assemblage of modern maps was to be found in the manuscript and printed editions of Ptolemy's text.[36] In 1428 the French Cardinal Guillaume Fillastre added a modern map of northern Europe, a region unknown to Ptolemy, to his manuscript copy. A few years later, the Florentine artist Pietro del Massaio started to make seven additional modern maps for the copies of Ptolemy's text that he had prepared, a practice that became routine in his workshop. In 1482 the Florentine poet Francesco Berlinghieri added for the first time four modern maps (*tabulae novellae*) to the canonical twenty-six Ptolemaic maps in the printed editions of Ptolemy's *Geography* (Florence, 1482).[37] In the following decades, the modern maps (*tabulae novellae* or. *tabulae modernae*) increased steadily from edition to edition. Eventually they outnumbered the Ptolemaic maps, while at the same time Ptolemy's text was complemented with modern commentaries conveying new information on projections, instruments, travels, and lands. For example, to mention only the Italian translations closest to the planning of the Guardaroba Nuova, the pocket-size publication edited by Giacomo Gastaldi in Venice in 1548 included 34 modern maps and an extensive commentary.[38] The Venetian edition of 1561 published by Girolamo Ruscelli included 37 modern maps and a verbose commentary, remaining for a long time the most complete set of modern maps available in print.[39]

The way the *tabulae modernae* were added to the original ancient text is extremely telling in understanding how Ptolemy's geographical order was adapted to the expanding world of the Renaissance (Figs. 4.17 and 4.18). First, the modern maps mimicked Ptolemy's originals in their visual rendition as well as in their order. They adopted the Ptolemaic grid and one of the Ptolemaic projections, and followed his order from the general to the particular (the general map of a continent came before its regional maps). Within each continent the modern maps kept Ptolemy's numbers (the first modern map of Europe represented the British Isles, and so forth). In most cases, the modern maps also included descriptions of the mapped country printed on their back, although these description tended to be more verbose and eclectic than those of their Ptolemaic counterparts. Second, in some editions, instead of being published as a separate appendix at the end of the book, the *tabulae modernae* were placed in correspondence with the pertinent Ptolemaic map, so that, for example, the modern map of northern Europe followed Ptolemy's maps of the old continent, and the map of the newly discovered Moluccas Islands completed Ptolemy's maps of Asia. In this respect, Gastaldi's edition of 1548 is significant. By intercalating the modern maps with the Ptolemaic maps Gastaldi endowed modern cartography graphically and conceptually with Ptolemy's authority.

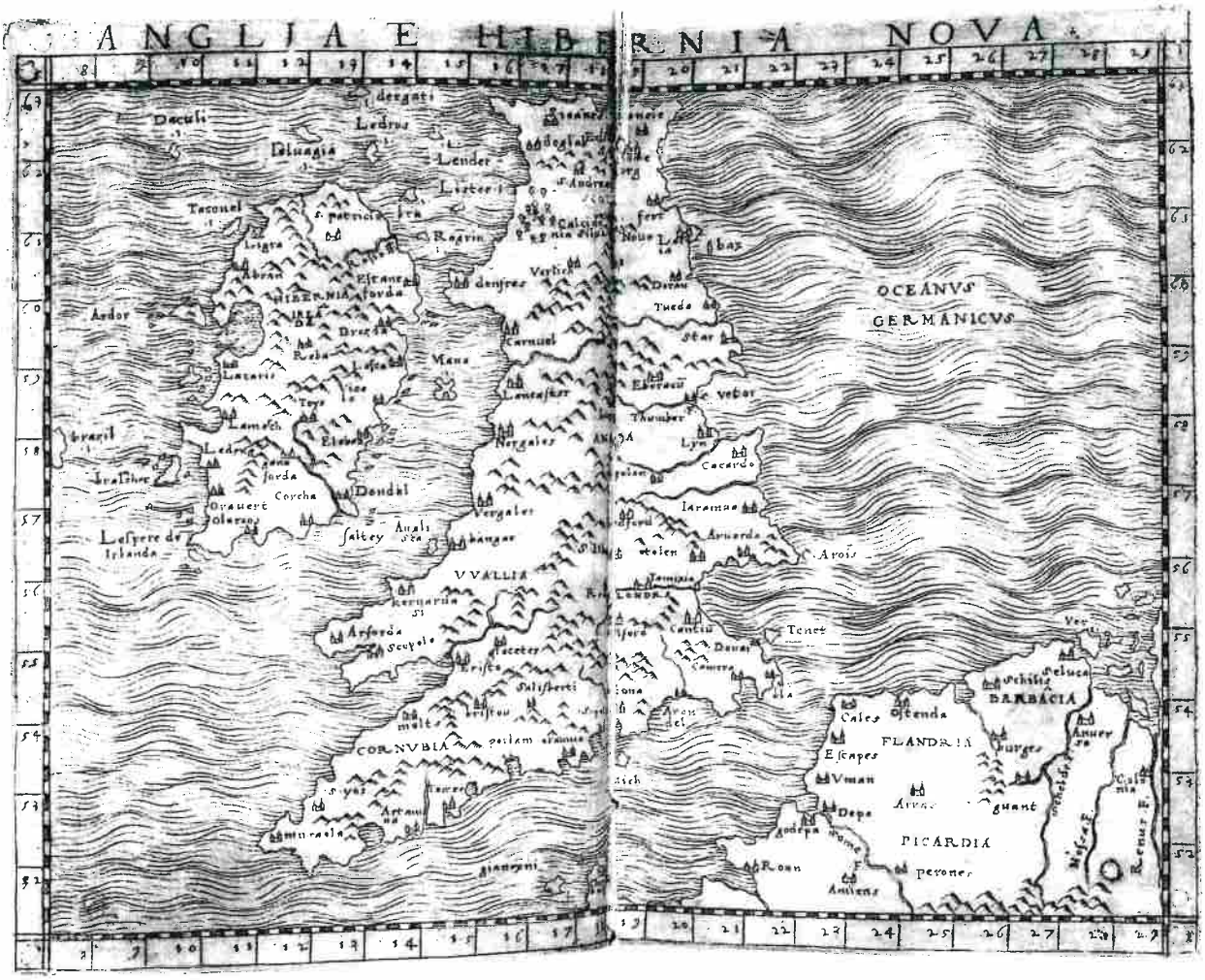
In the course of the sixteenth century, Ptolemy's expanded geographical order started to be used extensively to organize encyclopedic collections of texts. Sebastian Münster adopted it in his *Cosmographia universalis* (Basel, 1544), the bestseller of Renaissance cosmography books (Fig. 4.19). This was an example of the ultimate Renaissance encyclopedia that adapted the traditional scheme of medieval compendiums of universal knowledge to the new passion for geography. In the century after its publication over 40 editions were produced in German, Latin, English, French, Italian, and Bohemian. From edition to edition, it grew in pages, images, diagrams, and indices. Even the author's great emphasis on Germany (about half of



4.17 *Tabula Europae I* (First Map of Europe), engraving, from Ptolemy, *Geografia*, Venice 1548. Houghton Library, Harvard University (Typ. 525.48.715 vol. 2)

the book is dedicated to Germany), and his numerous anti-Roman and anti-Catholic remarks did not limit its circulation. In 1575, 25 years after its original publication, the papal administrators opted to censure it rather than ban it altogether. Münster's *Cosmographia universalis* had become the tool of those who wished to learn about the world without the inconvenience of traveling, as well as the textbook of descriptive geography for young men and women who prepared for their political and social lives, and the desired travel companion of those who, like Michel de Montaigne, traveled in foreign lands. Because of its wide success, Münster's formula for organizing encyclopedic knowledge reveals the full implications of Ptolemy's geographical order for Renaissance culture.[40]

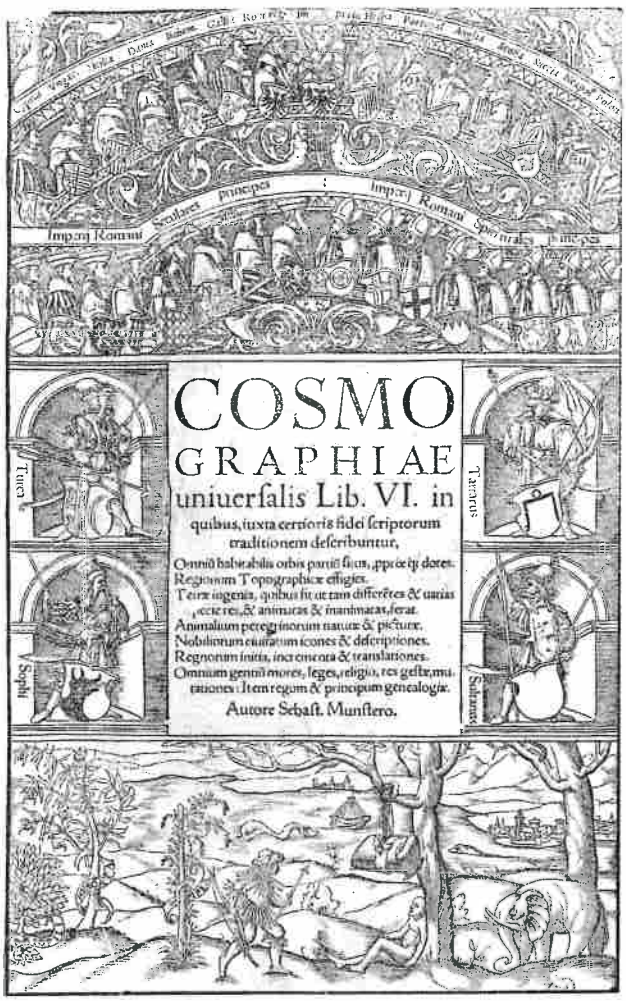
Like other compilers of encyclopedias, Münster ransacked the writings of earlier authors on history, monsters, marvels, ethnography, zoology, botany, and much more. But unlike his predecessors, he imaginatively reorganized the selected fragments of universal knowledge geographically, adopting Ptolemy's order. From the cursory description of the creation of the cosmos and its division into climatic zones, Münster moved to the description of the regions of the world: Europe, Asia, Africa, and America. He complemented his geographi-



4.18 Giacomo Gastaldi, *Anglia et Hibernia Nova* (Modern Map of the British Isles) from Ptolemy, *Geografia*, Venice 1548. Houghton Library, Harvard University (Typ. 525.48.715 vol. 2)

cal narration with an ample visual apparatus of maps, city views, portraits, coats of arms, genealogical trees, ancient inscriptions, coins, and medals. In Münster's *Cosmographia universalis*, geography explained the actions of people, and included the descriptions of the world's inhabitants, their buildings, customs, animals, plants, and products. Geography was not ancillary to history, but rather, it was "a discourse of memory in relation to history" or, as might be said today, the very structure of history.[41] In this book, Ptolemy's geographical order worked as a system to organize universal knowledge, while the maps functioned as a visual aid to its memorization and retrieval.

Similarly, Abraham Ortelius adopted Ptolemy's geographical order in his book *Theatrum orbis terrarum* (Antwerp, 1570). His geographical order was slightly different from Ptolemy's sequence, since Asia was listed before Africa, but still he regarded it as truly Ptolemaic because it moved from the general to the particular, from the map of the world to the maps of continents and regions. Unlike Münster, Ortelius relied primarily on maps, eliminating other kinds of images and limiting the verbal descriptions of places to the length of a page or two, which were printed on the back of each map. For this innovative map book, gener-



4.19 Sebastian Münster, *Cosmographia universalis*, Basel 1550, frontispiece. Houghton Library, Harvard University (Typ. 565.50.584 F)

ally regarded as the first modern atlas, he chose the traditional title for sixteenth-century encyclopedias, *Theatrum orbis terrarum* (Fig. 4.20). The title suggested that Ortelius's book was an encyclopedic, albeit brief, description of the entire world, which, like Münster, he augmented from edition to edition. But Ortelius's theater of the world, which was organized geographically and visualized by maps, also hinted at the function of the geographical order as a system of organization and retrieval of knowledge.[42]

In the introduction of his book Ortelius explained the mnemonic function of maps. In a passage often quoted he wrote: "whatever we read accompanied with maps placed in front of our eyes like mirrors, remains in our memory longer." Then he added that maps not only make reading more pleasant and fruitful, but also they "bring in front of the eyes the actions and the places where the deeds happened, as if they were present."[43] In both passages Ortelius referred to maps as visual aids to the recollection of events and, more importantly, to their capability to exercise the memory. Ortelius suggested that the reading of Exodus along with a map of the Holy Land would have fixed more firmly in one's memory the biblical wanderings of the Jews. Similarly, by reading Herodotus together with a map the scholar would have moved within the mapped land as the Greeks and Persians moved through the region during the Persian wars. Because maps offered a syncretistic view of the world, both spatial and temporal, they made history present.

Not only were maps often added to Bibles and history books, or even to literary texts such as Ludovico Ariosto's *Orlando furioso*, but Ptolemy's geographical order was also widely used by printers and scholars. The Venetian and Roman printers who assembled composite atlases at the request of individual patrons did so according to Ptolemy's order.[44] The number and selection of maps varied from copy to copy, but their order remained unchanged: they were "collected and arranged according to the order of Ptolemy," as the frontispiece that Antonio Lafrery engraved for one of these atlases proclaimed under the effigy of Atlas (Fig. 4.21). Federico Borromeo, the erudite cardinal of Milan, wrote with admiration about a professor who could converse competently about the world because he had memorized Münster's maps and his geographical order.[45] Ulisse Aldrovandi, who spent his life studying, growing, collecting, and illustrating specimens of the world's flora and fauna, used geography in some of his catalogues, a practice shared by many other scholars. Jean Bodin wrote about the role of geography as the organizing principle of the world and its history. In his *Methodus ad facilem historiarum cognitionem* (Paris, 1572), cosmography gave to history the order of exposition from the general

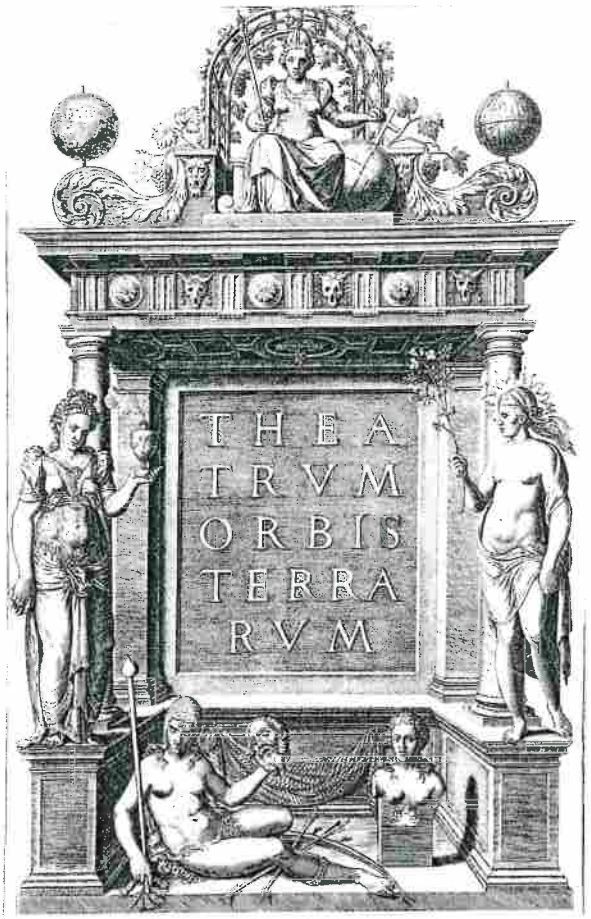
image of the world map to the particulars of continents, regions, and cities. Cosmography also provided history with the interpretative key to the deeds and manners of people. In Bodin's historical method the order of geography was the organizing principle of the world and its history, not the eye of history.[46]

Finally, Ptolemy's geographical order was used to organize the Guardaroba Nuova, an encyclopedic collections of artifacts that, like similar rooms, was regarded as a microcosm of the world. Like the Renaissance editions of Ptolemy's *Geography*, the Florentine map cycle started with a world map which, according to Vasari, had to be represented in two *mezze palle*, or hemispheres, perhaps an indication that Girolamo Ruscelli's edition of 1561 was consulted since this is the only Renaissance edition to include a map of the world representing the earth's globe as divided into two hemispheres, (such a representation was, however, common in printed maps). The *mezze palle* of the earth's globe were followed by two celestial maps depicting the two halves of the sky, a feature not included in the Renaissance editions of Ptolemy's book but often present in individual world maps or in other geographical manuals. Then the maps of the continents followed: fourteen maps of Europe were followed by eleven maps of Africa, fourteen maps of Asia, and fourteen maps of the West Indies. Although no edition of Ptolemy's *Geography* matches exactly the number of maps planned for the Guardaroba Nuova (most likely their number was dictated by the perimeter of the room and the size of the cupboards), Gastaldi's edition of 1548 integrating graphically and conceptually Ptolemy's order with modern cartography must be regarded as fundamental to the conception of Cosimo I's cabinet of art and curiosities. As in Gastaldi's edition of 1548, the Florentine maps of the regions known to Ptolemy were intercalated with the modern maps that Danti and Bonsignori made to complete the mapping project of the ancient geographer. Like contemporary cosmography books, the maps of the Guardaroba Nuova ordered the images of plants and animals of the mapped territories as well as the artifacts peculiar to each region. Ultimately, the Guardaroba Nuova was a three-dimensional display of Gastaldi's edition of Ptolemy's *Geography* and Münster's *Cosmographia universalis*. As in these contemporary books, the modern world was structured according to the authority of the ancient geographer, just as the natural world was organized according to Pliny and architecture measured according to Vitruvius.[47]

The Geographical Order as a Heuristic System

The persistent use of Ptolemy's geographical order in such diverse encyclopedias as Münster's *Cosmographia universalis*, Ortelius's *Theatrum orbis terrarum*, Jean Bodin's *Methodus*, the Roman and Venetian composite atlases, and Cosimo's Guardaroba Nuova suggests that this order was regarded not only as an effective system to find one's position in the world, but also as a heuristic system to organize and retrieve the knowledge of the world.

Since antiquity the invention of heuristic schemes had been regarded as foundational to rhetoric, especially to the art of memory – the part of rhetoric that taught students the elementary techniques to store and retrieve the information they acquired from reading and listening to authors. Ancient rhetoricians and their Renaissance followers believed that visual coding was the most effective way to retrieve the information in the order in which it was stored, but also, more importantly, to move around freely within it so that one could retrieve



4.20 Abraham Ortelius, *Theatrum orbis terrarum*, Antwerp 1570, frontispiece. The University of Virginia Library

only what was pertinent to the speech one was delivering, or the composition one was writing. Consequently, students were trained to turn words, ideas, and concepts into visual form, and to invent effective heuristic systems made up of images. These systems could vary in iconography but their success was determined by the homogeneity of their images and the rigidity of their order. Successful heuristic systems could be based on architectural settings, alphabetical sets, human figures, numerical series, the Zodiac, the Bestiary, or maps of the world.[48]

Ptolemy's geographical order contained all the elements that ancient and Renaissance scholars regarded as essential for a perfect heuristic system: the move from the global to the particular; the organization of a series of images in the form of maps, into a tight sequence; and the possibility of expansion by adding new images, the new maps that were created, as universal knowledge expanded when new lands were explored.

The importance of the geographical order as a heuristic system of universal knowledge is evident in Renaissance treatises on memory. In his *Tipocosmia* (Venice, 1561), Alessandro Citolini summarized his rather tedious journey of universal knowledge with two emblematic geographical objects. One was an enormous book (*un libro di estrema grandezza*) that suggestively recalls a typical sixteenth-century cosmography book. Like Münster's *Cosmographia universalis*, Citolini's *libro di estrema grandezza* organized the encyclopedia of the world geographically, illustrating it with diagrams, images, and maps:

> In the earth they [the readers] saw its parts, the countries of the entire world both in general and in particular, and they even entered at the center of the earth . . . Then it seemed to them that they were entering the most complete garden they had ever seen, since every herb and tree was planted there . . . In another part they saw animals that live on earth, fly, and swim . . . and seeing them in this way, they arrived at understanding not only their mere names but their true essence and form, and not only of them but also of all the other things that have form.[49]

Citolini's second geographical object strikingly resembled Cosimo's Guardaroba Nuova: it was "an enormous sphere [*palla*], in which [the visitors] could enter; and when they entered, they saw the heavens around them; and in the middle, they saw the earth, and they saw things ordered there in a way more pleasing to the eye of the body than to the eye of the mind. And after having heard long discussions and reasoning from the Count [the host], they all concluded that these things were more childish than worth knowing."[50] The visitors

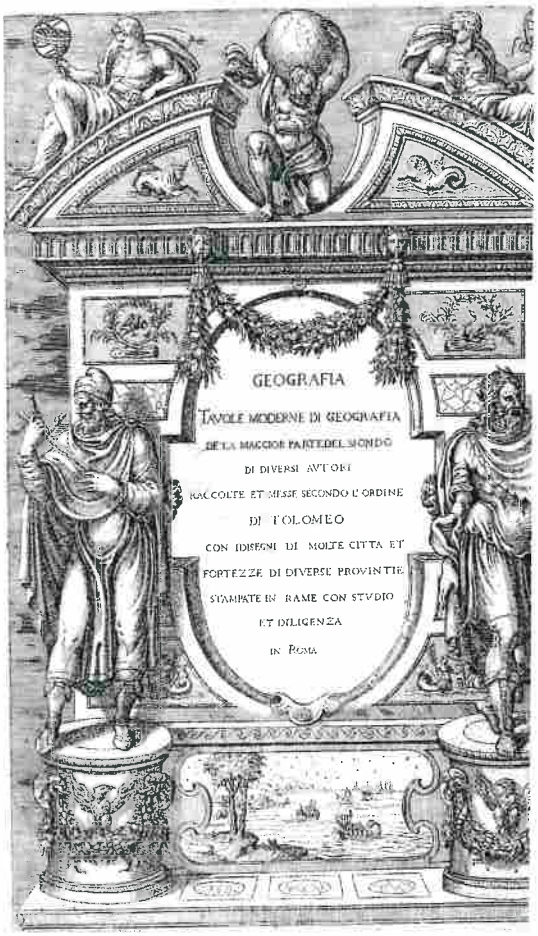
judged the walk-through sphere too simple a divertissement, *cose da fanciulli*. On the other hand, Citolini's sphere conformed not only to the idea of the Guardaroba Nuova but, more generally, to other three-dimensional heuristic systems of the period.

The most famous three-dimensional system of information retrieval was Giulio Camillo's theater, a structure actually built in Venice in the 1540s (and perhaps also in Paris a few years later), a copy at a reduced scale of a Roman amphitheater, which survives only through verbal descriptions. Standing on the stage of Camillo's theater, the viewer would have looked at universal knowledge organized in the arena according to a system that combined the planets and the elements. Walking through the theater the visitor would have encountered the places of memory marked by innumerable little drawers (*cassettini*) containing small rolls of paper with inscribed quotations from different authors. Camillo reified ancient and medieval heuristic schemes into the actual copy of a Roman amphitheater, the images of memory into statues and paintings, the mental compartments of the storehouse of memory into *cassettini*, and the fragmented texts that filled the memory of ancient orators and medieval preachers into rolls of paper stored in drawers.[51]

Another typical three-dimensional system of classification was the Kunstkammer. Renaissance authors realized that cabinets of art and curiosities shared with memory the need to organize encyclopedic knowledge, albeit one made up of artifacts rather than texts, and applied the model of Camillo's theater to the organization and retrieval of collections. The Flemish physician Samuel Quicchelberg wrote a short theoretical treatise on collecting which was inspired by the Habsburg Kunstkammer in Munich, one of the greatest collections of the period where he worked. In Quicchelberg's treatise, the storehouse of memory turned into a real gallery containing a universal collection of art and curiosities.[52]

The Guardaroba Nuova, thus, applied the geographical order of Renaissance atlases and cosmography books to the three-dimensional space of a cabinet of art and curiosities. In the Guardaroba Nuova, the maps illustrated the world systematically but, more generally, they were the images of a memory theater to see, organize, and remember a collection of artifacts, tangible fragments of the encyclopedia of the world. The maps were not simply labels to store and locate artifacts. Rather they constituted the iconography of the geographical order, the images of the heuristic system, just as numbers, letters, and planets were the images of earlier mnemonic systems based on numerical and alphabetical sets, the Zodiac or the Bestiary. Just as Camillo had turned his heuristic system into a

4.21 Antonio Lafrery, *Geografia. Tavole mode geografia . . . raccolte et messe secondo l'ord Tolomeo* (Geography. Modern Geographical M . collected and arranged according to Ptc order), ca. 1575, engraving. The Newberry L Edward E. Ayer Collection (Novacco 2 F O)



three-dimensional amphitheater, and Quicchelberg had transformed the warehouse of the mind into an actual museum, so did the Guardaroba Nuova render three-dimensionally a system of collecting according to maps, indeed the very ordering of maps of contemporary cosmography books.

The project of the Guardaroba Nuova was never fully implemented and, as far as it can be judged , Cosimo I's collections were never arranged geographically. Had it been realized, the geographical arrangement of the Guardaroba Nuova would have added variety to Cosimo's display of the Medici collections. Small artifacts were tastefully displayed in his studies, large ancient statues were located in the hall of the Pitti Palace, his personal papers were secured in secluded rooms, and exotica would have been displayed in the Guardaroba Nuova. As a theater of the world, the Guardaroba Nuova was inherently similar to other European Kunstkammern in conveying symbolically the patron's control over the world through its indoor microscopic reproduction. But the iconography based on maps of the world and its geographical display set it apart from other European examples. The visibility given to the exotica within the Medici collections was also unprecedented. While exotica were prized items in European collections, no ruler had yet set aside a room for them, let alone one that attempted their integration within the geography of the world.

The reconstruction of the organizing principle in the Guardaroba Nuova is at times suggestive and speculative, but the ordering of maps is the only criterion that can explain the physical layout of the room itself, the geographical order of the maps, their content, and their functional analogy with the paintings for Francesco I's Studiolo. Indeed, the device of the painted doors as a visual catalogue of the artifacts kept in the cabinet was immediately adopted for Francesco's Studiolo, although the maps were substituted there with the more familiar scheme of the four elements. Even more importantly, the ordering of maps adopted in Cosimo's cabinet of art and curiosities deeply resonates with the contemporary use of Ptolemy's geographical order as a heuristic system to organize and retrieve encyclopedic knowledge. But this use was possible because Ptolemy's notion of geography had gone through a process of revision in the Renaissance. From the mathematical representation of large areas of the world that Ptolemy had defined, geography transformed into an encyclopedic description of a place projected onto a mathematical framework. The revision of Ptolemy's *Geography*, which incidentally took place in the very commentaries that were supposed to explain his geographical theory, profoundly affected the cartographic language of Renaissance maps, a language that will be analyzed in the next chapter in relation to the maps of the Guardaroba Nuova.