PLATE 1. THE STAR FRESCO FROM TELEILAT GHASSUL, JORDAN. According to some interpretations, this represents a cosmological map, with the known world at the center surrounded by a first ocean, a second world and second ocean, with the eight points perhaps symbolizing the islands of the world beyond and the celestial ocean. The rectangular feature (bottom right) has been suggested as part of a plan drawing of a temple, but again this is highly speculative.
Diameter of the original: 1.84 m. Courtesy of George Kish, University of Michigan, Ann Arbor.

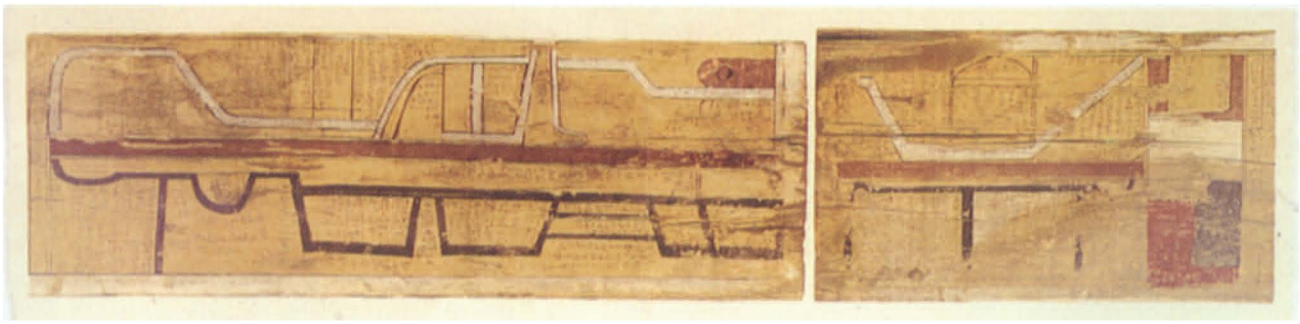

PLATE 2. MAP IN THE *BOOK OF THE TWO WAYS*. An example of a topographical composition, probably intended as a passport to the afterlife, found on many coffin bases from al-Bersha, Middle Egypt, ca. 2000 B.C.
Size of the original: 28 × 63 cm. Photograph courtesy of the American Geographical Society Collection, University of Wisconsin, Milwaukee, from Youssouf Kamal, *Monumenta cartographica Africae et Aegypti*, 5 vols. in 16 pts. (Cairo: 1926–51), 1:6. By permission of the Egyptian Museum, Cairo (coffin 28,083).

PLATE 3. THE THERA FRESCO. These fragments of a Santorin fresco, datable to ca. 1500 B.C., contain a number of cartographic scenes. They also suggest the incipient development of color conventions: the rivers are in blue, but are outlined in gold; the shape of the mountains is also indicated by a double blue line. The drawings themselves are executed in plan, in elevation, or from an oblique perspective. The overall effect is of striking relief, with the different places very clearly distinguished, so that the fresco is not dissimilar to some of the many other picture maps that characterize the cartography of ancient and medieval Europe. There are three frescoes. The longest (split into two here) contains the story of a fleet: it departs from a seashore town at the left (*upper section*), and arrives at its home port at the right (*lower section*). The other sections show a river in plan and a fragmentary view of warriors, flocks, and women.
Lengths of the originals: 3.5 m (river fresco) and 4 m (fresco of ships). By permission of the National Archaeological Museum, Athens.

PLATE 4. FRESCO FROM THE BOSCOREALE VILLA, NEAR POMPEII. This detail clearly shows a globe drawn in approximate perspective. The object has also been referred to as a sundial.
Size of the original detail: 61 × 39.7 cm. By permission of the Metropolitan Museum of Art, New York (Rogers Fund, 1903 [03.14.2]).

PLATE 5. THE PEUTINGER MAP: ROME. The Peutinger map, dated to the twelfth or early thirteenth century, derives ultimately from a fourth-century archetype, suggested by vignettes such as that of Rome in this segment, in which the city is personified as an enthroned goddess holding a globe, a spear, and a shield.
Size of the original: 33 × 59.3 cm. By permission of the Österreichische Nationalbibliothek, Vienna (Codex Vindobonensis 324, segment IV).

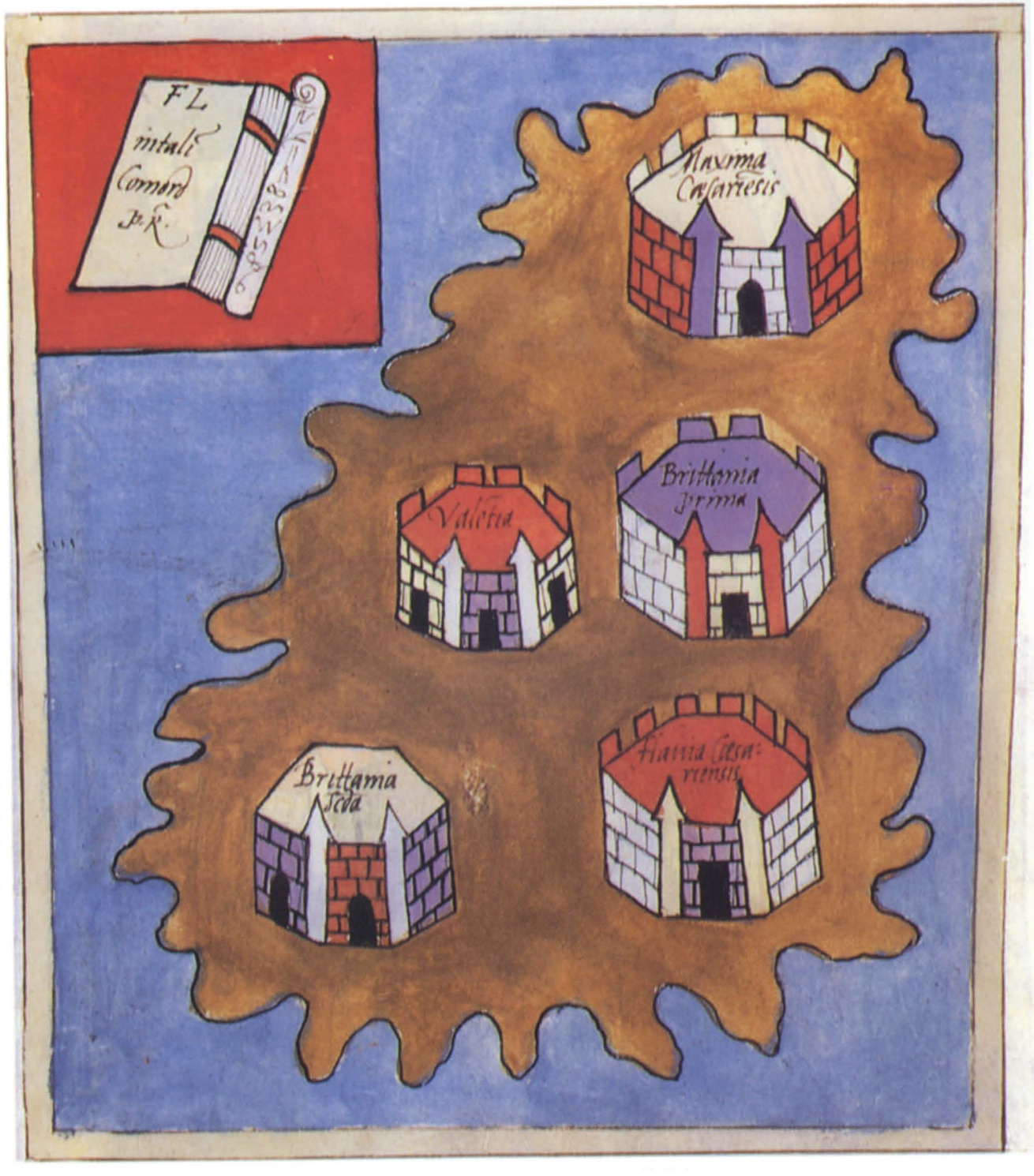

PLATE 6. THE *NOTITIA DIGNITATUM*: BRITAIN. Five provinces are arranged incorrectly in this sixteenth-century copy, at several removes, of a fourth-century original. For example, Maxima Caesariensis, which had London as its capital, is placed not in the southeast but to the northeast near Lincoln.

Size of the original: 31 × 24 cm. By permission of the Bayerische Staatsbibliothek, Munich (Clm. 10291, fol. 212r).

PLATE 7. THE MADABA MOSAIC MAP. Fragment of a sixth-century mosaic now preserved in a church in Madaba, Jordan. Size of the map as preserved: 5 × 10.5 m. Photograph courtesy of Fr. Michele Piccarillo, Studium Biblicum Franciscanum, Jerusalem.

PLATE 8. JERUSALEM ON THE MADABA MOSAIC MAP. The depiction of some churches and other structures is sufficiently realistic for modern scholars to identify them. Photograph courtesy of Thames and Hudson. By permission of the Department of Antiquities, Jordan.

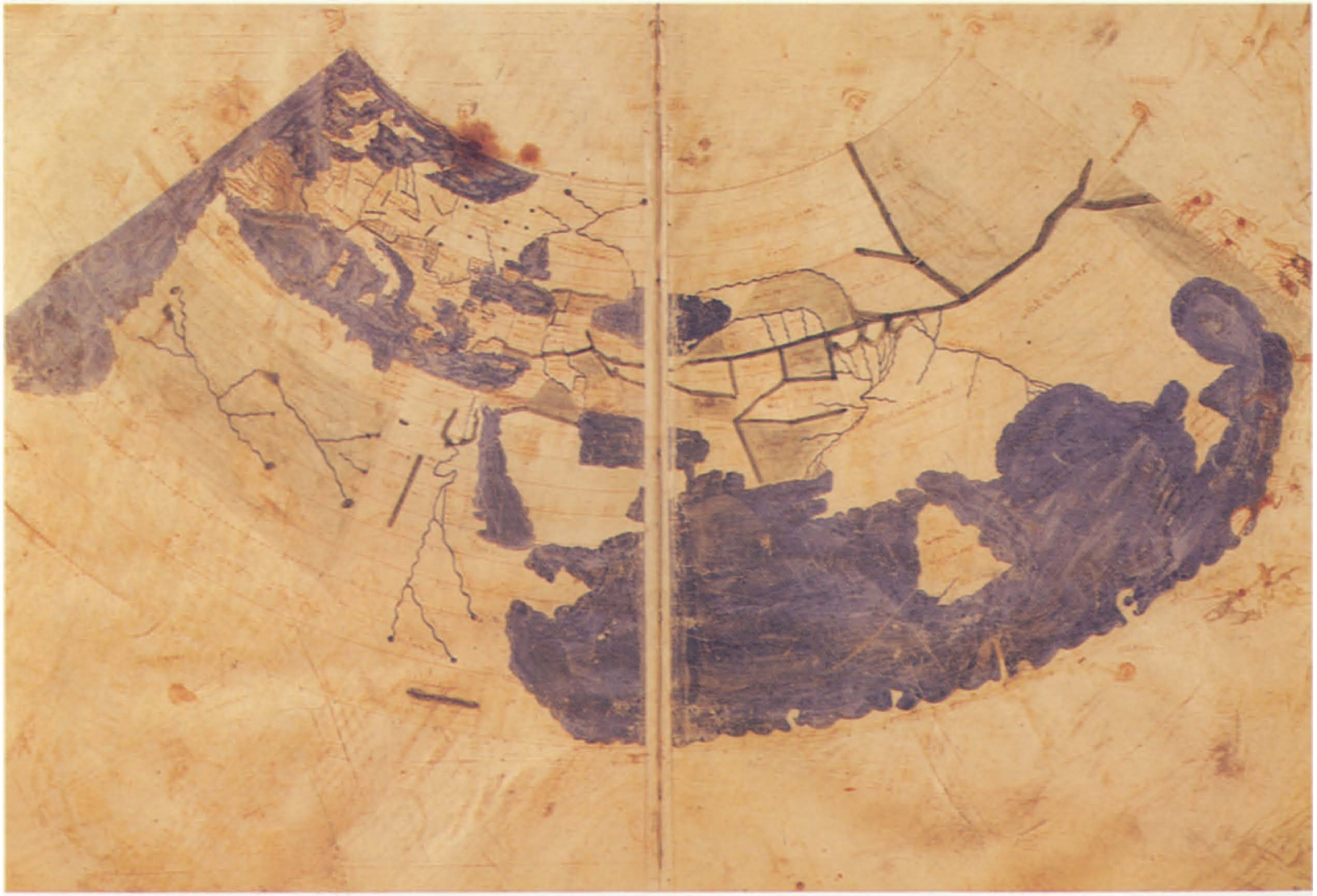

PLATE 9. MAP OF THE INHABITED WORLD FROM A THIRTEENTH-CENTURY BYZANTINE MANUSCRIPT OF PTOLEMY'S *GEOGRAPHY*. Drawn on Ptolemy's first projection, the map is followed in this recension by the twenty-six regional maps. The codex is one of the earliest extant to contain Ptolemaic maps. Size of the original: 57.5 × 83.6 cm. Photograph from the Biblioteca Apostolica Vaticana, Rome (Urbinas Graecus 82, fols. 60v–61r).

PLATE 10. EMPEROR CHARLES IV WITH ORB. This example, from a fourteenth-century armorial, depicts a common theme in medieval art—both sacred and secular—in which Christ or a sovereign is shown with a diagrammatic, tripartite globe, or orb, signifying the rule of its holder over the world.
Size of the original detail: 13.6 × 6.5 cm. Copyright Bibliothèque Royale Albert I^er^, Brussels (MS. 15.652–56, fol. 26r).

PLATE 11. ORB IN THE LAST JUDGMENT. The tripartite globe or orb is frequently found beneath Christ's feet in medieval representations of the Last Judgment, symbolizing the end of the world.
Size of the original vignette: 12 × 9.8 cm. By permission of the Pierpont Morgan Library, New York (MS. 385, fol. 42v).

PLATE 12. THE THREE SONS OF NOAH. From a fifteenth-century manuscript of Jean Mansel's *La fleur des histoires*, this clearly shows the ark on Mount Ararat and the division of the world between the three sons of Noah: Shem in Asia, Ham in Africa, and Japheth in Europe.
Size of the original: 30 × 22 cm. Copyright Bibliothèque Royale Albert I^er^, Brussels (MS. 9231, fol. 281v).

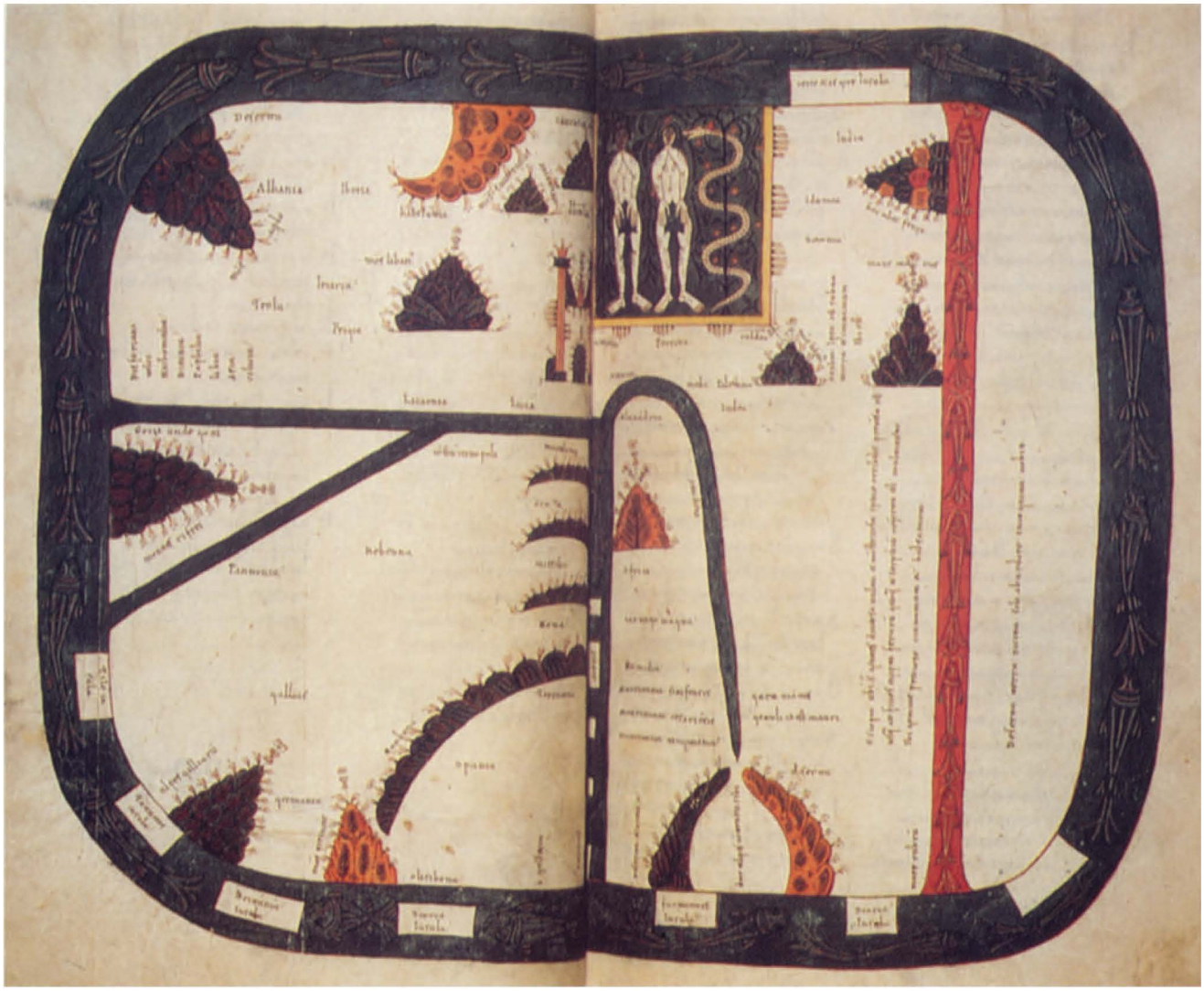

PLATE 13. THE BEATUS MAP FROM THE SILOS APOCALYPSE. Dated to 1109, this map represents a tradition of rectangular maps that can be traced back to a now-lost prototype of 776–86 in the *Commentary on the Apocalypse of Saint John* of Beatus of Liebana. Displaying a Spanish-Arabic style, the main characteristic of this map is the fourth continent, which Beatus considered inhabited.
Size of the original: 32 × 43 cm. By permission of the British Library, London (Add. MS. 11695, fols. 39v–40r).

PLATE 14. THE DUCHY OF CORNWALL *MAPPAMUNDI*. This recently discovered fragment is from the lower right corner of a 1.57 m diameter *mappamundi* that has been carbon dated between 1150 and 1220. From a preliminary reading of the legends, the fragment bears similarity to both the Hereford and Ebstorf maps. It shows the area of West Africa. Size of the fragment: 61 × 53 cm. From the archives of the Duchy of Cornwall, by permission of His Royal Highness the Prince of Wales.

PLATE 15. HIGDEN'S *MAPPAMUNDI*: OVAL TYPE, MID-FOURTEENTH CENTURY. Perhaps following Hugh of Saint Victor's instructions for drawing a world map in the shape of Noah's ark, the oval maps of Higden represent the earliest of three types. Although it has been claimed that this manuscript is in Higden's own hand, most authorities recognize the British Library version (see fig. 18.67) as closer to the original archetype. From Ranulf Higden, *Polychronicon*.
Size of the original: 26.4 × 17.4 cm. By permission of The Huntington Library, San Marino, California (HM 132, fol. 4v).

PLATE 16. VESCONTE'S *MAPPAMUNDI*, 1321. At the beginning of the thirteenth century, *mappaemundi* began to incorporate the content and style of portolan charts. The world maps of Pietro Vesconte, drawn for Marino Sanudo's work promoting a crusade, represent the beginning of this trend. Not only is the Mediterranean Sea derived directly from such charts, but Vesconte also extended a network of rhumb lines over the land. From Marino Sanudo, *Liber secretorum fidelium crucis* 1306–21.
Diameter of the original: 35 cm. By permission of the British Library, London (Add. MS. 27376*, fols. 187v–188r).

PLATE 17. WESTERN EUROPE IN THE CATALAN ATLAS. Forming a segment of the traditional circular *mappamundi*, this late fourteenth-century world map was constructed on twelve panels, with the Mediterranean based on the outlines of the portolan charts. Size of the original segment: 65 × 50 cm. Photograph from the Bibliothèque Nationale, Paris (MS. Esp. 30, pls. 5v–6r).

PLATE 18. THE FRA MAURO MAP. Representing the culmination of medieval cartography on the eve of the Renaissance, this map is a compendium of geographical sources, including the Portuguese explorations in Africa, Ptolemy's *Geography*, the Marco Polo narratives, and the portolan charts. The surviving map is a copy—made at the request of the Venetian Signoria—of a map commissioned by Afonso V of Portugal in 1459.
Size of the original: 1.96 × 1.93 m. By permission of the Biblioteca Nazionale Marciana, Venice.

PLATE 19. *MAPPAMUNDI* OF PIRRUS DE NOHA. From an early fifteenth-century incipit by Pirrus de Noha of the *De cosmographia* of Pomponius Mela. Size of the original: 18 × 27 cm. Photograph from the Biblioteca Apostolica Vaticana, Rome. (Archivio di San Pietro H. 31, fol. 8r).

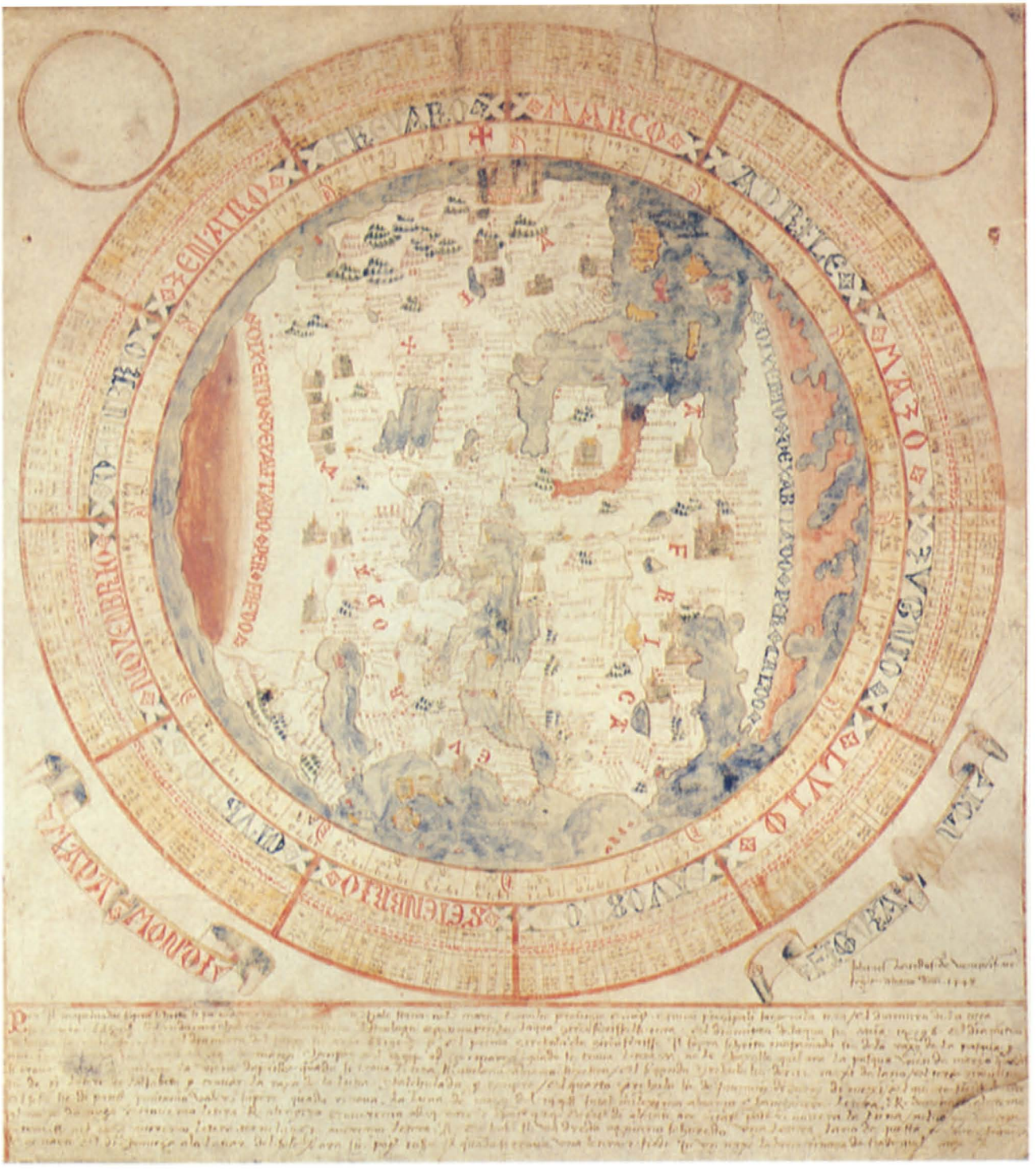

PLATE 20. *MAPPAMUNDI* OF GIOVANNI LEARDO, 1448. Sharing many characteristics with the other two surviving world maps of Leardo, among the more striking features are the surrounding Easter calendar and the strongly colored uninhabited north polar and equatorial torrid zones. Size of the original: 34.7 × 31.2 cm. By permission of the Biblioteca Civica Bertoliana, Vicenza (598A).

PLATE 21. THE WORLD MAP OF ANDREAS WALSPERGER. This 1448 map, which has extensive text explaining the cartographer's intentions, distinguishes between Christian (red) and Islamic (black) cities.
Diameter of the original: 42.5 cm. Photograph from the Biblioteca Apostolica Vaticana, Rome (Pal. Lat. 1362b).

PLATE 22. THE "ANGLO-SAXON" MAP. The heavy gray and bright orange colors on this tenth-century world map depart considerably from the usual blues, greens, and reds on the *mappaemundi*.
Size of the original: 21 × 17 cm. By permission of the British Library (Cotton MS. Tiberius B.V., fol. 56v.).

PLATE 23. AN EXTENDED "NORMAL-PORTOLANO." This example, showing the standard areas of the Mediterranean and Black seas as well as western Africa, is from the fifteenth-century Cornaro atlas. Whereas most portolan charts used sixteen equidistant points to define the intersections of the rhumb lines, this chart has twenty-four.
Size of the original: 53.3 × 40.6 cm. By permission of the British Library, London (Egerton MS. 73, fols. 36–36^{a}v).

PLATE 24. THE 1439 VALSECA CHART. This illustrates the different color conventions used on portolan charts: the three colors of the rhumb lines (black or brown, green, and red); the rubrication of significant places; and the coloring of islands, such as Rhodes (white or silver cross on a red field), and of certain river deltas. More ornate Catalan-style charts, like this one, added their own elaborate conventions.
Size of the original: 75 × 115 cm. By permission of the Diputación de Barcelona, Museo Marítimo, Barcelona (inv. no. 3236).

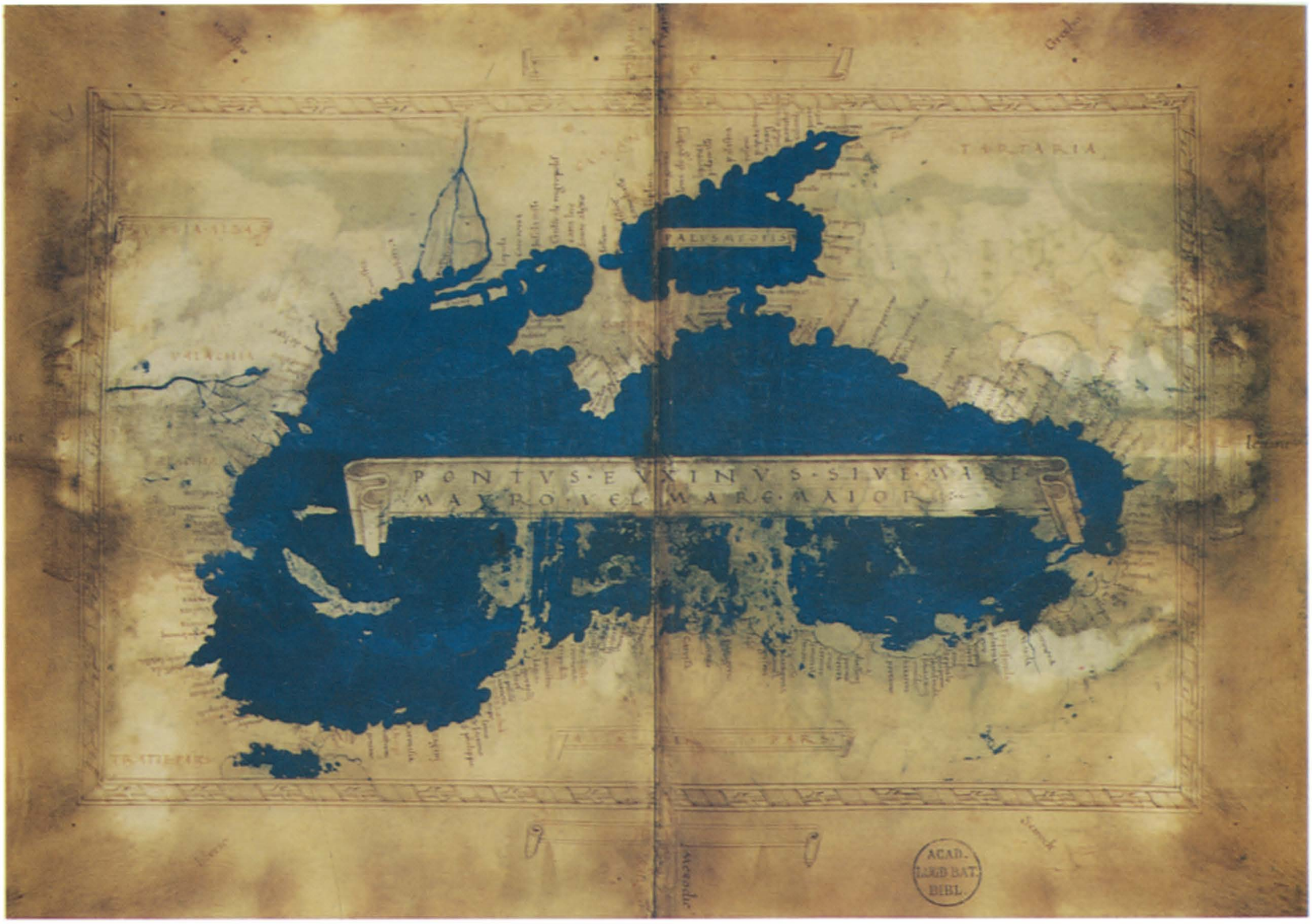

PLATE 25. A CONTEMPORARY DERIVATIVE OF A PORTOLAN CHART. This map of the Black Sea takes its coastal outline and names from a portolan chart, but it omits the navigational rhumb lines. It is from a manuscript island book, the *Insularum illustratum*, by Henricus Martellus Germanus, who worked in Florence ca. 1480–96.
By permission of the Biblioteek der Rijksuniversiteit, Leiden (Codex Voss. Lat. F 23, fols. 75v–76r).

PLATE 26. A CATALAN CHART IN THE ITALIAN STYLE. This unsigned and undated chart emphasizes the difficulty of using only stylistic characteristics to distinguish between the Italian and Catalan portolan charts. Although this example is drawn in the austere fashion associated with Italian work, analysis of its place-names and the presence of town symbols indicate that it was probably produced in Majorca in the late fourteenth century.
Size of the original detail: 63 × 68 cm. By permission of the Biblioteca Nazionale Marciana, Venice (It. IV, 1912).

PLATE 27. AN ITALIAN CHART IN THE CATALAN STYLE. Made in 1482 by Grazioso Benincasa, this chart reverses the situation in Plate 26. Despite its internal detail and decoration it was in fact drawn in Bologna by the most prolific of the fifteenth-century Italian chartmakers. The repeated coats of arms beneath a cardinal's hat are those of Raffaello Riario, for whom the chart was made.
Size of the original: 71 × 127.5 cm. By permission of the Biblioteca Universitaria, Bologna (Rot. 3).

PLATE 28. REPRESENTATION OF THE MADONNA AND CHILD. This particular example is from the neck of the 1464 Petrus Roselli chart. Other charts bear cornerpieces of various saints, in a practice that seems to have been a Venetian hallmark. Height of the original figure: 7 cm. By permission of the Germanisches Nationalmuseum, Nuremberg (Codex La. 4017).

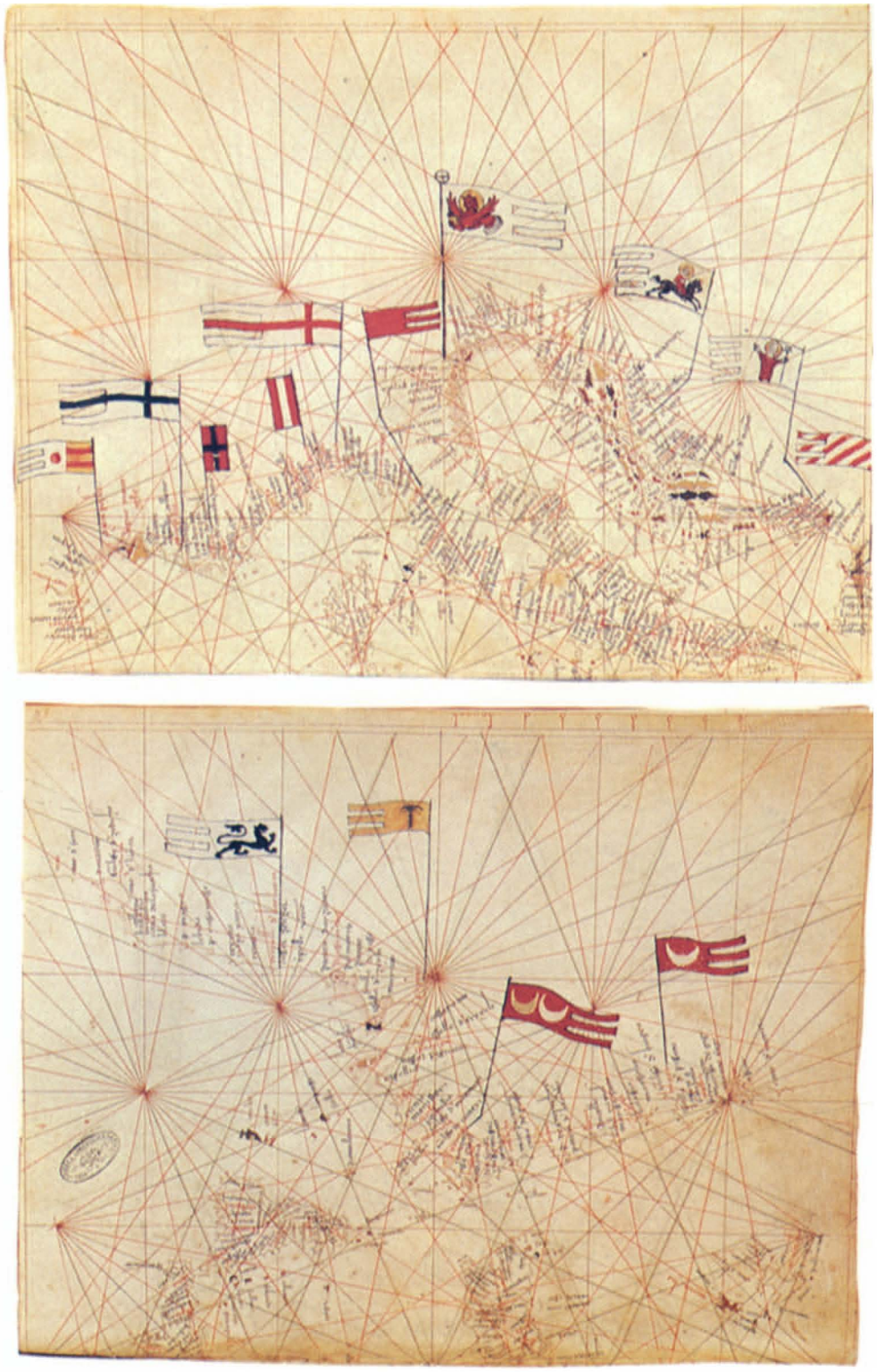

PLATE 29. CITY FLAGS. The practice of placing flags above cities, as on this chart from an atlas of 1321 attributed to Pietro Vesconte, is less useful for dating than it might appear. The flags are sometimes imprecisely positioned and may be inappropriate for the place concerned. For example, Christian flags were often shown flying above cities many years after their conquest by the Ottoman Turks.
Size of each original: 22.5 × 29.3 cm. Photograph from the Bibliotheca Apostolica Vaticana, Rome (Vat. Lat. 2972).

PLATE 30. THE CARTE PISANE. Probably dating from the end of the thirteenth century, this portolan chart is accepted as the oldest extant example. Pisa is the city from which it supposedly emerged in the nineteenth century; its authorship is generally, though not universally, considered to be Genoese. Among the chart's noteworthy features are the twin rhumb line networks, with centers near Sardinia and the coast of Asia Minor. Outside the two circles, which are inked in here but would be left hidden on later charts, some areas are covered by a grid whose purpose remains unclear.
Size of the original: 50 × 104 cm. Photograph from the Bibliothèque Nationale, Paris (Rés. Ge. B 1118).

PLATE 31. PORTRAIT OF A CHARTMAKER. This corner-piece from one of two atlases by Pietro Vesconte dated 1318 shows a mapmaker working on a chart. The legend above the vignette reads, "Petrus Vesconte of Genoa made this map in Venice, A.D. 1318," and it is tempting to suppose that the portrait is of Vesconte himself.
By permission of the Civico Museo Correr, Venice (Collezione Correr, Port. 28, fol. 2).

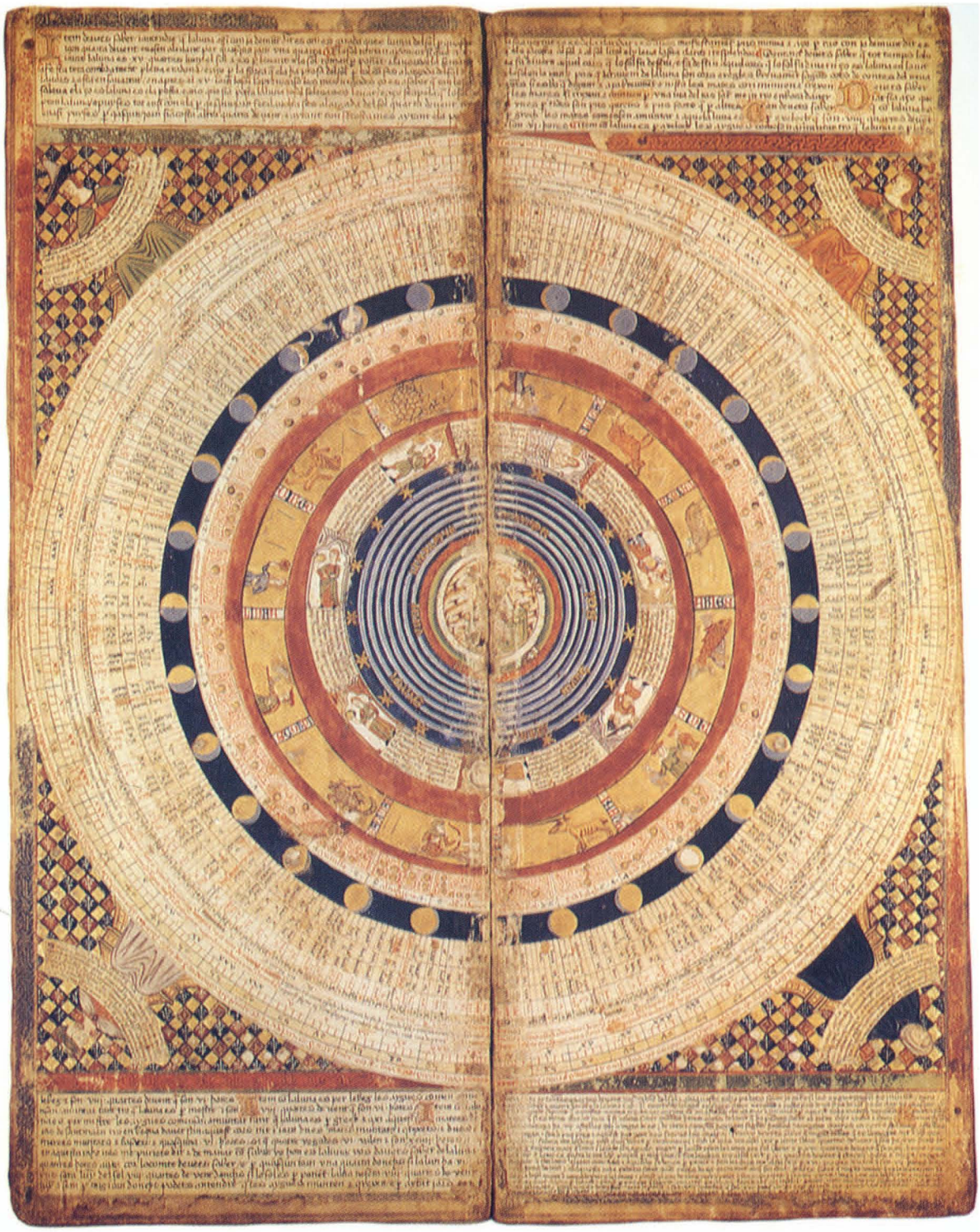

PLATE 32. THE WHEEL DIAGRAM FROM THE CATALAN ATLAS. This is the most splendid of the lunar calendars found in conjunction with a portolan chart. Moving outward from a symbolic representation of the earth, its concentric rings illustrate, in turn, the other elements, the planets and their astrological qualities, the signs of the zodiac, the moon's stations and (against a deep blue background) its phases, then the six bands of the lunar calendar, followed by further astrological texts and figures. The final ring explains the nineteen-year sequence of golden numbers used in conjunction with the lunar calendar. This great wheel diagram is rounded off by cornerpiece female figures representing the seasons, starting upper right with spring and moving counterclockwise.
Size of the original segment: 65 × 50 cm. Photograph from the Bibliothèque Nationale, Paris (MS. Esp. 30).

PLATE 33. ROME FROM AN UNDATED MANUSCRIPT OF PTOLEMY'S *GEOGRAPHY*. This is one of many plans of Italian and Near Eastern cities to emerge from the workshop of Pietro del Massaio, a Florentine artist of the late fifteenth century. Size of the original: 56.8 × 42.1 cm. Photograph from the Bibliothèque Nationale, Paris (MS. Lat. 4802, fol. 133r).

PLATE 34. MAP OF THE DISTRICT AROUND VERONA. Although Lake Garda and the Adige valley may not be drawn to scale on this regional map of the mid-fifteenth century, the idea of a uniform ground scale does seem to have been applied to the detailed representation of Verona. See also fig. 20.13. Size of the original: 305 × 223 cm. Photograph courtesy of Thames and Hudson. By permission of the Archivio di Stato, Venice.

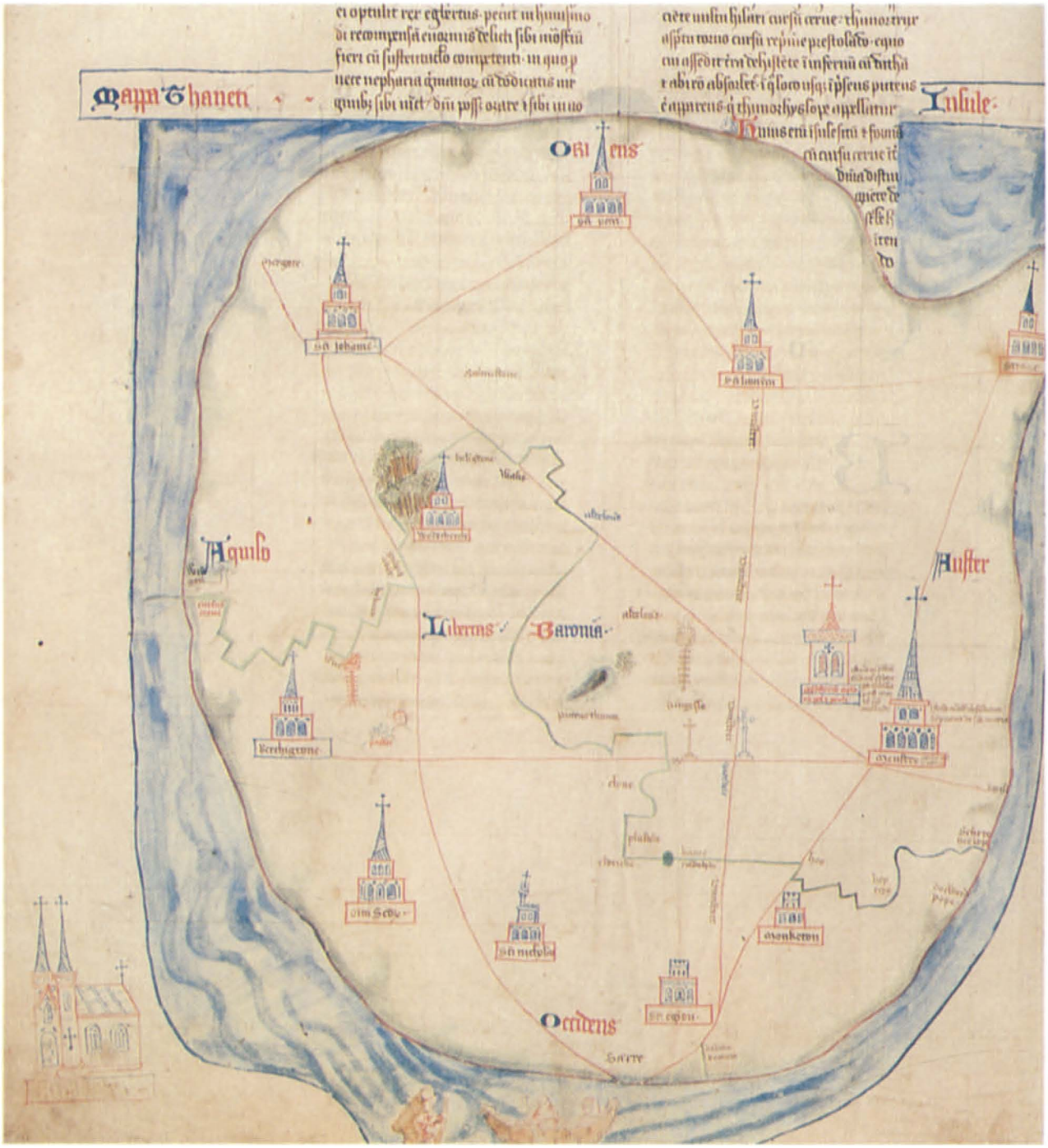

PLATE 35. PLAN OF THE ISLE OF THANET, KENT. Drawn at about the same time as the sketched plan of Clenchwarton (fig. 20.20), ca. 1400, this map represents the other extreme of the stylistic continuum: a carefully drawn and colored artistic work. Size of the original: 39 × 37.5 cm. Found in Thomas of Elmham's *Historia Abbatiae S. Augustine*. By permission of the Master and Fellows of Trinity Hall, Cambridge (MS. 1, fol. 42v).

PLATE 36. A PORTION OF THE BOUNDARY OF THE DUCHY OF BURGUNDY, 1460. The boundary passes through the fields that separate the three villages of Talmay, Maxilly, and Heuilley (Côte-d'Or). The artist has given the map three separate horizons that are labeled in turn: north (to the right), east, and west. At the eastern extreme, beyond Heuilley, is the river Saône. This map was possibly produced as a result of the 1444 boundary dispute between Duke Philip the Good and King Charles VII of France.
Size of the original: 56 × 62 cm. By permission of the Archives Départementales de la Côte-d'Or, Dijon (B 263).

PLATE 37. MAP OF INCLESMOOR, YORKSHIRE. One of two later fifteenth-century copies of a map produced during a dispute between the duchy of Lancaster and Saint Mary's Abbey, York, 1405–8, over the rights to pasture and peat on an area south of the river Humber. Size of the original: 60 × 74 cm. Crown copyright, by permission of the Public Record Office, Kew (MPC 56, ex DL 31/61).

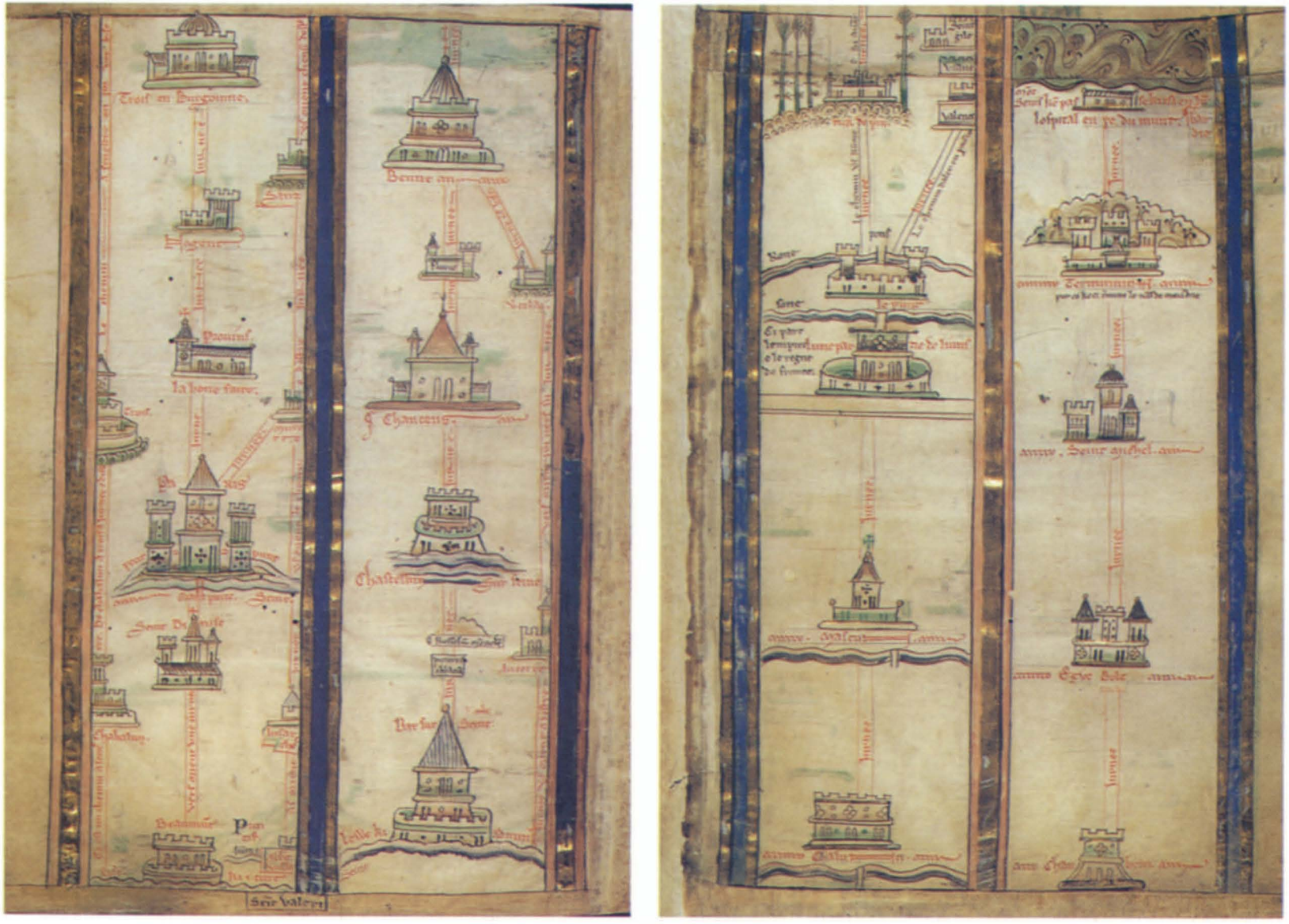

PLATE 38. ITINERARY MAP BY MATTHEW PARIS. This shows two sections of a mid-thirteenth-century itinerary of the route to the Holy Land. The verso depicts Bar-sur-Seine (bottom right) to Troyes (top left); the recto is Tour de Pin (top left) to Chambéry (bottom right). Staging points are depicted, sometimes realistically, by thumbnail sketches set on vertical lines. Intermediate distances are marked with the journey time in days.

Size of each original: 34.8 × 25.2 cm. By permission of the British Library, London (Royal MS. 14.C.vii, fols. 2v–3r).

PLATE 39. GREAT BRITAIN BY MATTHEW PARIS. This famous map, known in four versions, should be read as an itinerary map with its central axis running from Newcastle upon Tyne to Dover in a straight line via the Abbey of Saint Albans (Paris's own monastery). Size of the original: 33 × 22.9 cm. By permission of the British Library, London (Cotton MS. Claudius D.vi, fol. 12v).

PLATE 40. THE GOUGH MAP, CA. 1360. Deriving its name from its inclusion in the map collection of Richard Gough, the eighteenth-century English antiquary, this map of Great Britain shows five roads radiating from London with branches and crossroads. It is much more detailed than the Matthew Paris maps and, in the positioning of towns, rivers, and coastlines, even beyond the routes themselves, significantly more accurate. Size of the original: 56 × 118 cm. By permission of the Bodleian Library, Oxford (MS Gough Gen. Top. 16).