

TITLE: *The Hereford Mappamundi*

DATE: *ca. 1290 A.D.*

AUTHOR: *Richard de Bello*

DESCRIPTION: This is the largest map of its kind to have survived in tact and in good condition from such an early period of cartography. It has been preserved in the Hereford Cathedral (England) for over 700 years, and, besides its antiquity, it is notable for the quality of its workmanship and for the variety of the drawings that adorn it. For this map the entire skin of a calf had to be properly treated to make writing and coloring possible. Calfskin prepared in this manner is called *vellum* (from the Latin word *vitulus*, a calf). The vellum, measuring 1.65 x 1.35 m, is attached to a framework of oak, the actual map being set in a 1.32 m diameter circle. Although it bears no date, it is possible, from what is known of Richard's life and from a study of the map, to say that in its present form it was probably finished between 1285 and 1295. There is a reference (unusual for any medieval map) to its authorship, in a note in the bottom left-hand corner (in translation):

Let all who have this history,
Or shall hear or read or see it,
Pray to Jesus in His Divinity,
To have pity on Richard of Haldingham and Lafford,
Who has made and planned it,
To whom joy in heaven be granted.

These place names are in Lincolnshire (Holdingham and Sleaford are the modern forms), and this Richard has been identified as one Richard de Bello, prebend of Lafford in Lincoln Cathedral about the year 1283, who later became an official of the Bishop of Hereford, and in 1305 was appointed prebend of Norton in Hereford Cathedral. Nothing certain is known of his activities after 1313, and it is probable that he died soon after (1326), bequeathing his map to the cathedral.

While the map was compiled in England, names and descriptions were written in Latin, with the Norman dialect of old French used for special entries. The circle of the world is set in a somewhat rectangular frame background with a pointed top, and an ornamented border of a zig-zag pattern often found in *psalter-maps* of the period (#223). Inside the border-frame are drawings illustrating some basic premises of Richard's map. At the head of the frame is a representation of the *Day of Judgment*, with the figure of Christ displaying the scars of His crucifixion in the center. Standing on the right of Christ an angel holds a cross in one hand and three nails in the other. At Christ's feet is a group of four figures including the Virgin Mary. Here she displays her breasts and makes her plea, the wording in Norman-French:

Here, my dear Son, my bosom is whence you took flesh
Here are my breasts
from which you sought a Virgin's milk. Show pity, as you said you would, on
all Who their devotion paid to me for you made me Savioress.

The other three figures consist of a woman placing a crown on the Virgin Mary and two angels on their knees in supplication. On Christ's right-hand side is an angel who calls to the blessed dead (her words issuing through a trumpet) *Arise and come to everlasting bliss*. The line of figures to the left of this angel represents those who have arisen from their graves and includes the leading angel, a bishop, a crowned king, a monk, three

nuns, and two persons coming out of opened graves. On Christ's left hand another angel pronounces doom on the lost, also through a trumpet, *Arise and go into hell-fire prepared for you*. Six lost souls, roped together, are being dragged to the devil, who has wings, horns, and hooves; to be passed on to an evil spirit and consigned to the jaws of hell (quite literally the open jaws of a monster with menacing teeth and glaring eyes is shown awaiting them). A strange figure seems to be desperately trying to escape from the jaws, after arising from his grave.



Still within this decorative border, in the left-hand bottom corner, the Roman Emperor Caesar Augustus is enthroned and crowned with a papal triple tiara and delivers a mandate with his seal attached, to three named commissioners. The seal, inscribed *S. Augusti Caesaris Imperatoris* authorizes Nicodoxus, Theoclitus, and Polyclitus to survey the world and report to the senate. The text of the *edict*, *Exiit edictum ab Augusto Cesare ut describeretur huniversus orbis* (Luke 2:1) is above Caesar's head. The modern translation reads: *In those days a decree was issued by the emperor Augustus for a registration to be made throughout the Roman world*. The meaning of the word *describeretur* involves not simply registration but a survey, leading perhaps to confusion by the author of the *Hereford map* between the two events (and the two Caesars). Pliny alludes to a large world map by Vipsanius Agrippa (#118) displayed in Rome at the time of the emperor Augustus (ca. A.D. 14), which may have resulted from the survey of the provinces ascribed by tradition to Julius Caesar. It is in this corner also that Richard de Bello makes his plea for the prayers of all who see his *estorie*, as he calls his map.

In the right-hand bottom corner an unidentified rider parades with a following forester holding a pair of greyhounds on a leash. A faded inscription above the rider's head states that a description of the world from Orosius'



history is portrayed within the circle: *Descriptio Orosii de ornesta mundi sicut interius ostenditur* [Orosius' description of the *ornesta* of the world; the word *ornesta* is thought to refer generically to medieval maps]. Paulus Orosius was an early fifth century A.D. historian who wrote a history against pagans that was made popular in England by a translation of King Alfred's. The entire pictorial background to this world map found within this frame is, therefore, informative, explanatory, and useful as an introduction to the map itself.

The geographical form and content of the *Hereford* map is derived from the writings of Pliny, Solinus, Augustine, Strabo, Jerome, the *Antonine Itinerary*, St. Isidore, and Orosius. However, the overriding theme is that of a religious one, as can be seen not only from the drawings just described, but also from the following description of the map itself. In design, the *Hereford* map can be labeled a modified and extremely elaborate T-O plan (#205).



Double circles are drawn concurrently with the circular world. These give the points of the compass and twelve winds. The four cardinal points are marked by encircled squatting figures and minor points by eight encircled animals' heads, a section for each wind. The outer circle is divided into four sections. The East is at the top, *Oriens* (the rising sun); the South on the right, *Meridiens* (mid-day); the West at the bottom, *Occidens* (the setting sun); the North on the left, *Septentrio* (the seven stars of the Great Bear). The inner circle, divided into twelve sections, contains the table of winds, derived from Timosthenes a Greek admiral of the third century B.C. Four large golden letters in Lombardic script are looped to the inner circle by ligatures; they spell M-○-R-S (*mors*) the Latin word for *death*. They are a reminder that life is mortal and that the world is dominated by death, an essential part of the spiritual message of the *Hereford* map. The letters also have a practical value in locating the points of the compass within the inner circle. M and ○ give the clue to *Oriens*, ○ and R to *Meridiens*, R and S to *Occidens*, S and M to *Septentrio*.

As is traditional with the T-O design, there is the tripartite division of the known world into three continents: Europe, Asia, and Africa. As previously mentioned, East is at the top of the map, and the whole is surrounded by the uncrossable great ocean. The following is an analysis of the five main areas of the map itself: Asia, Africa, Europe, the Mediterranean and the allegorical features; each area being treated separately.

ASIA: This "continent" forms the upper, eastern portion, of the map; actually consuming more than half as it encompasses the 'world-center' Jerusalem. Most commonly, we find Jerusalem at the center of more ornate medieval T-O maps. The influence may have come from St. Jerome, who stated that 'Jerusalem is situated in the middle of the Earth', linking this to the suggestion that God performs his works 'in the middle of the earth' from Psalm 73.1217 with Ezekiel 5.5: 'Thus said the lord: this is Jerusalem: I have put her in the midst of the nations.' The suggestion that this influenced all mapmakers may well be an over simplification, however. Although most maps from the 13th to the early 15th century exhibit this trait, there are maps from other periods that do not. Many simpler schematic maps, for example, do not mark Jerusalem at all, and some others do not seem to have a center of any kind. The dating of the shift of centrality in T-O maps to Jerusalem is unlikely to be coincidental; it was likely the

direct result of the reaffirmation of Jerusalem as the center of the Christian world through the Crusades. When we do find Jerusalem at the center, it can tell us something about the political make-up of the era. The *Hereford* map is one of those that placed Jerusalem at its center. What is interesting is that although the map was made in England, England is placed to the extreme bottom left of the map (North West). This tells us that even its inhabitants did not regard England as the political center. There seem to be three possibilities as to why this is the case and they are not mutually exclusive. First, as Gerald Crone has suggested, the map exists as an inspiration for travel and pilgrimage to the Holy Land. The second possibility is that Jerusalem had become an important political center. Crone believed that there had been a shift in the center of power from Rome, which was nearer the centre of more ancient maps, to Palestine. Jerusalem had become a focal point that conveyed a cultural single-mindedness for the recapture of Jerusalem, and so it became the political focus of the governing authorities. Therefore, the enlarging of this area on maps was politically motivated. The third possibility is that Christianity placed Jerusalem at its temporal and spiritual, rather than geographical, center. It is, after all, the city at the center of New Testament history; the focal point of Christian time. After the Crusades, Jerusalem had become the sacred, physical and temporal center of the Christian world. It was important spiritually and politically. The importance of pilgrimage, whether armed, spiritual or otherwise, is the message of this central location.

The letters **A. S. I. A.**, in red, are hard to locate being widely separated, placed vertically from the *Garden of Eden* to Jerusalem. During the Middle Ages, when clerics were engaged in rediscovering and annotating the writings of their predecessors, certain additions and alterations were made to the then existent Roman maps. The practice of placing the East at the top was acceptable to the Church, owing to the special sanctity attached to that quarter, and, *Paradise*, shown here as an island, was inserted at this point. On the *Hereford* map there is a drawing of Adam, Eve and the serpent, and below to the right, their expulsion from the *Garden*.

They also wished to show as much detail in the Holy Land as possible, consequently the area allotted to Palestine was disproportionately enlarged. Palestine on this map, as well as other parts of the map, have a number of Biblical places and incidents inserted, i.e., a pictorial crucifixion outside a walled-Jerusalem; the track of the people of Israel from Egypt across the Red Sea to Jericho; the Ark on Mt. Ararat in the Armenian mountains; the granaries of Joseph (*Joseph's Barns*) as the pyramids were considered to be; the very conspicuous Tower of Babel; Moses on Mount Sinai receiving the tablets; Lot's wife; and the river Jordan flowing through to the Sea of Galilee to the Dead Sea, where Sodom and Gomorrah lie submerged. Some of these details of the Holy Land were taken from itineraries made for the use of pilgrims.

In Asia, north of the Black Sea, live the *cannibal Essedones*. Behind two men hacking and devouring a corpse, an inscription tells us that the *Essedones* celebrate the deaths of their parents by eating their flesh rather than consigning them to the worms. Nearby, two other inscriptions describe them. Below the cannibals, one announces that the *Scythian Essedones* fashion drinking cups from their friends' skulls. The other, located near the map's northeast rim and by the mountains where Alexander supposedly imprisoned Cain's offspring, warns that the *Essedones* will be among those who overrun the earth at the time of the Antichrist.



The cannibal Essedones hacking and devouring a corpse in Asia



A modern reproduction of the Hereford Mappamundi

On the right of Palestine is Egypt, which is included in ASIA. Here the Nile and its delta are shown, along with the sphinx and the pyramids. Cairo is misnamed *Babylon*, and *Alexandria* is depicted with its lighthouse. On the left of Palestine is Asia Minor, between the Aegean Sea and the Black Sea, along with *Troy*, *Laodicea*, *Antioch*, and *Noah's Ark*.



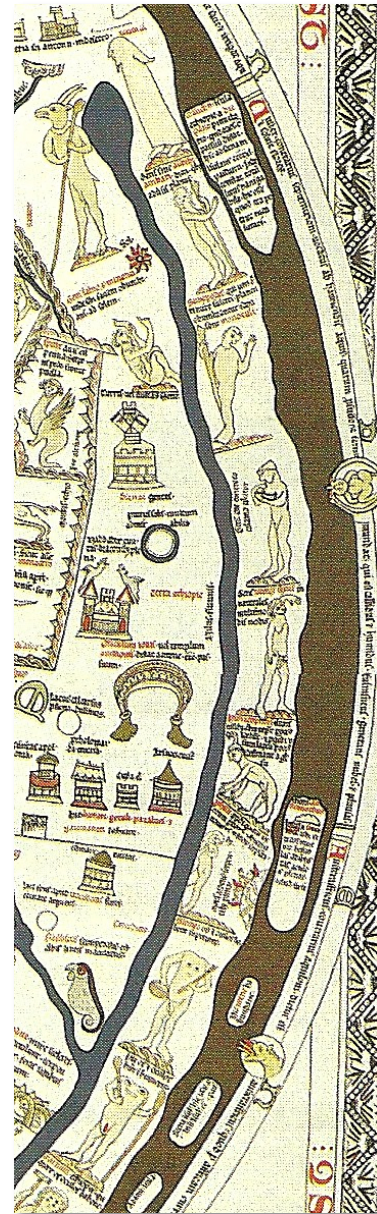
Hereford Mappamundi, detail: the Tower of Babel and Mesopotamia

The actual *Babylon* stands conspicuously in the middle as a multi-storied city. An enigmatic creature, perhaps the spirit of evil, protrudes from one side, the *Tower of Babel* is near at hand, the *Euphrates* River flows into the city and out the other side. A long description gives details of the origin of this city with mighty walls and 100 gates. Above *Babylon* is *India* in gold letters, a country of mountains and rivers, dragons, giants and pygmies, and strange beasts and birds. Above *India* is the *Garden of Eden* with four rivers flowing from it which submerge (to prevent men from finding their way back to *Paradise*) to reappear as the legendary sources of the rivers *Tigris* and *Euphrates* which are shown flowing south to the *Persian Gulf*; and the river *Ganges* which is shown flowing east forming a delta before reaching the ocean, and the *Nile*. To the left of *India*, in northwest Asia, across mountain ranges that may represent the *Himalayas*, are the Chinese, called *Seres*, with a reference to their silk as an article of export. To the right of *India* are *Arabia*, the *Red Sea* and *Persian Gulf* extending to the ocean enclosing the island of *Sri Lanka* at the base.

In the Middle Ages scholars were also greatly interested in the exploits of *Alexander the Great* who became legendary, therefore a number of drawings and inscriptions in Asia are associated with him: i.e., five bell-tents, the central one with a cross, rising from an altar-style base on the boundary between Asia and Africa; a gateway with opened doors at the end of an eight-mile mountain pass, representing the *Caspian Gates* through which *Alexander* was said to have passed on his way north; the city of *Choolissima*, conventionally drawn, capital of the land of *Magog*, taken by *Alexander* after a long siege; two islands in the northern ocean, *Miopar* and *Mirabilis*, appeased by presents and entreaties; the island of *Terraconta* inhabited by intractable cannibalistic Turks "from the stock of *Gog* and *Magog*"; and finally the battlemented wall

with which he imprisoned “the accursed descendants of Cain”. Below this area is the land of the *Scythian* races. Obviously knowledge of this part of the world was very limited and the space was thus filled with dramatic pictures.

AFRICA: This continent is located in the lower portion of the map on the right. Strangely the name *EUROPE* in great gold letters stretches down the length of Africa, similarly Europe is labeled *AFRICA*. It should be noted that the extremities of Africa and Europe are correctly given in small writing, *terminus Africe* and *terminus Europe*. The most conspicuous feature in Africa is the blue band of the Nile running parallel with the ocean. The river begins as a lake near *Mount Hesperus* and apparently ends as a lake, but it submerges to reappear as the Lower Nile, forming Africa’s eastern boundary. Behind the blue band of the river is a grim array of 20 grotesque figures to indicate the existence of primitive peoples, comparable to those displayed on the *Vercelli*, *Psalter* and *Ebstorf* maps (a glossary of these creatures follows this monograph). On the north the continent is bounded by the Mediterranean, with cities along the coastline, notably Carthage facing its rival Rome across Sicily. *Mons Mercurii* opposite Crete is Cape Bon. It is clear that Africa has been drawn from information collected from maps and itineraries of the Roman Empire prior to 600 A.D. Consequently the Roman provinces are delineated, *Libya*, *Tripolitania*, *Numidia*, and *Mauritania*. The Atlas Mountains are shown forming a single peak. There are also many non-human monsters illustrated in Africa, for example, a phoenix, a crocodile, a poisonous salamander, and a monocerus which is probably intended for a rhinoceros. The ocean is dotted with islands, including the Canaries, Madeira and Tenerife are called the *Fortunate Islands*, an allusion to their temperate climate.



EUROPE: When we turn to this area of the *Hereford* map we would expect to find some evidence of more contemporary 13th century knowledge and geographic accuracy than was seen in Africa or Asia, and, to some limited extent, this theory is true. By the 13th century trade and commerce were well developed, and travel throughout Europe was relatively easier. However this type of ‘word-of-mouth’ information is slow to be collected and eventually reflected on maps. Scholars, such as G.R. Crone, believe there to be about a two-century lag between the actual circulating knowledge of the world and the geographical content on the *Hereford* map. Europe is not easily recognizable since actual coastlines are disregarded in this highly stylized format and the river systems seem to dominate. The Danube, Rhine, and Rhone rivers are accurately shown rising in the Alps and flowing to their respective mouths. The Iberian and Italian peninsulas are not represented as such. Beginning with Spain, at the bottom-center, the Pyrenees form a line running north and south, with

many rivers and towns displayed. Italy is merely a bulge between the Mediterranean and the Adriatic; the Alps are fairly accurate, with towns in the area being chiefly

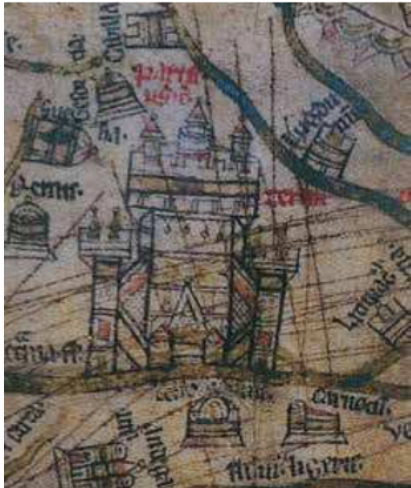


derived from the *Antonine Itinerary*. Rome is honored by a popular hexameter, *Roma caput mundi tenet orbis frena rotundi* [Rome, the head, holds the reins of the world].

Greece has its *Mt. Olympus* and such cities as *Athens* and *Corinth*; the Delphi oracle, misnamed *Delos*, is represented by a hideous head. *Macedonia*, *Thrace*, and *Bulgaria* are also shown in this area.

France, with the bordering regions of Holland and Belgium is called *Gallia*, and includes all of the land

between the Rhine and the Pyrenees. Cities in particular are hardly neutral: the map shows *Troy*, *civitas bellicosa* with a white lag on the tower; Christian Rome has its seven churches inside and outside the walls; Constantinople is represented upside down because of the schism. Paris, owing to its famous university, has one of the most



imposing castellated buildings on the entire map. Unfortunately, though, the area of France has been defaced by indelible scratching and scribbling, probably done at a time when anti-French feelings ran high in England. The *Rhine*, *Moselle*, *Seine*, and *Loire* are incorrectly given a general north-south direction, consequently displacing some sixty towns that occur near them.

Norway and Sweden are shown as a peninsula, divided by an arm of the sea, though their size and position are misrepresented. Norway, alone, is named, and there is a strange figure that seems to depict a man on snow skis, with an inscription, roughly translated, *he runs on skis*. There is only a

vague conception of the form of the Baltic Sea. Germany is equally obscure and vague, *Upper Germany* is noted as being occupied by Slavic people, and *Lower Germany* has a note, *this is Saxony*. The principle rivers, the *Rhine*, *Vistula*, *Ems*, *Weser*, and *Elbe* are given, and the towns included are *Bremen*, *Hamburg*, *Magdeburg* and *Prague*. North of the *Danube* is *Dacia* with a note, *this is Russia*, and a picture of a bear. The river *Don* forms the boundary between Europe and Asia.

On the other side of Europe, *Iceland*, the *Faeroes*, and *Ultima Tile* are shown grouped together north of Norway, perhaps because the restricting circular limits of the map did not permit them to be shown at a more correct distance. As can be seen,

beyond the perimeter of the former Roman rule, the detail and accuracy is rather lacking. What contemporary knowledge the map does display of this area comes from the 11th century writer Adam of Bremen.

The British Isles are drawn on a larger scale than the neighboring parts of the continent, and this representation is of special interest on account of its early date. With the exception of four maps drawn by Matthew Paris, about 1250 (#225), this is the earliest medieval attempt at a detailed map of these islands to have survived. The appearance of this portion of the *Hereford* map, in particular the narrow form of the English Channel and North Sea, strongly suggest that an existing map of the British Isles (probably not Matthew Paris') has been fitted into the general framework of this world map by cutting out a segment of the main land mass of Europe. This would explain the distortion of the coastline, particularly in southeast England, and perhaps also the complete omission of East Anglia. The circular shape of the map, again, no doubt accounts for the curved outlines of western Scotland and Ireland.



The city of Troy and the Aegean Sea

On the *Hereford* map, the areas retain their Latin names, *Britannia insula* and *Hibernia*, *Scotia*, *Wallia*, and *Cornubia*, and are neatly divided, usually by rivers, into compartments, North and South Ireland, Wales, Cornwall, England, and Scotland. Cathedral cities such as *Durham*, *Lincoln*, *Hereford*, and *Canterbury* are displayed; castles and towers such as *London*, *Conway*, *Caernarvon*, *Dover*, and *Edinburgh*, and the mountains of *Snowdon* and *Grampians* are just some of the exceptional detail included among these special isles.

THE MEDITERRANEAN: The Mediterranean, conveniently separating the three continents of Asia, Africa and Europe, teems with islands associated with legends of Greece and Rome. Entering this sea from the encircling ocean is an island with two columns, the *Pillars of Hercules*, in the Straits of Gibraltar. Then come the *Balearic Islands*, Majorca and Minorca, and Sardinia sandal-shaped to suit its name *Sandaliotis*. Triangular Sicily is easy to recognize with Mount Etna belching flames; its cities include Syracuse and Palermo. On the island of Crete concentric circles represent the labyrinth devised by Daedalus. Near the red letters *Mare Mediterraneum* is a mermaid, to the left of which is the island of Delos, surrounded with dots for the islets of the *Cyclades*. On the island of Rhodes the column of the Colossus still stands though it collapsed fifty years after erection. Cyprus, *Lemnos* with an ox-like creature above it, *Troy* a most war-like city is on the mainland, and *Constantinople* lies on the European side of the sea, but is upside down. The two upright fingers branching up from the Mediterranean are the Aegean and the Black Sea with the *Golden Fleece* at its extremity.

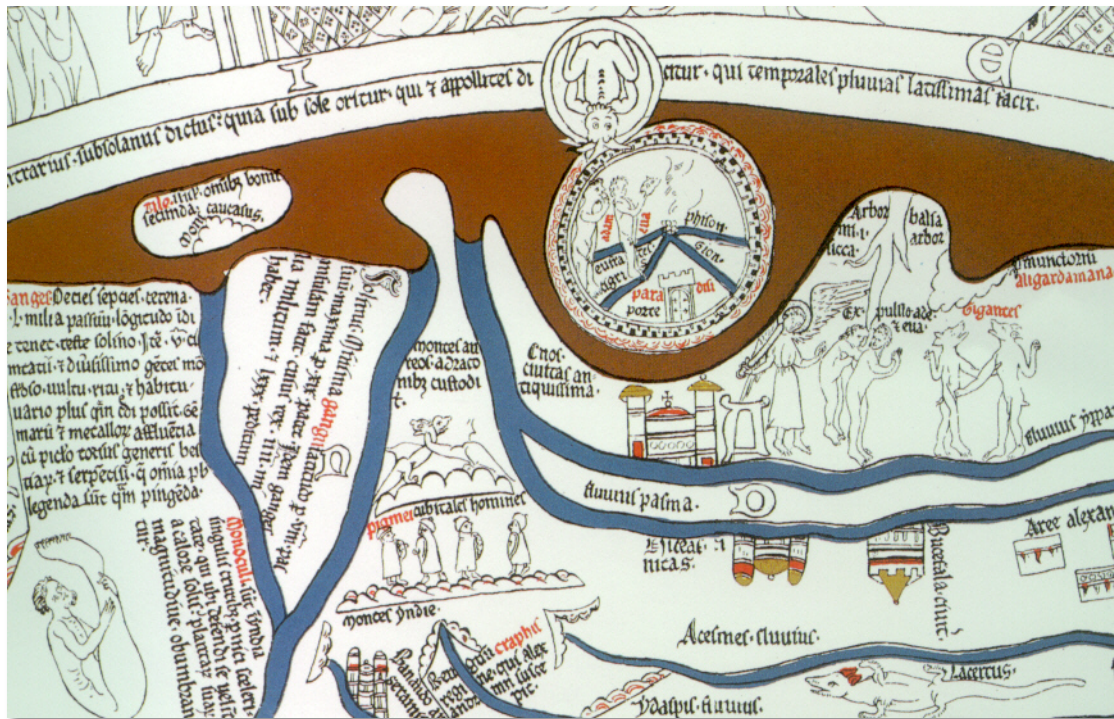
While the maker of the *mappamundi* placed many terrestrial monsters at the edges of the world, he locates almost no sea monsters in the circumfluent ocean, which

he depicts as a narrow, de-emphasized band, but in the Mediterranean there is a prominent representation of a siren, as well as a swordfish whose sword is curiously represented on its flank rather than projecting forward from its mouth, a sea serpent and also the monsters *Suilla* (Scylla) and *Caribdis* (Charybdis), which derive from Homer's *Odyssey*. Scylla is depicted as a head, and Charybdis as a coiled figure intended to represent a whirlpool. In fact, the only two sea monsters represented in the circumfluent ocean are two more or less canine heads spewing water, each labeled *Suilla*, that is, Scylla, which are evidently whirlpools, one to the north and one to the south of the British Isles – that is, near where the *Hereford* map was made.

SUMMARY: According to most authorities, it is very probable that the *Hereford* map was copied in considerable detail from another, older map that was, as it were, a descendant of a Roman map drawn in the fourth or possibly even the first century A.D. Earlier, notice was made of the inscription in the border-frame of the *Hereford* map attributing a survey of the known world to Emperor Augustus. The historian G.R. Crone points out that this reference has special significance because Augustus had also entrusted his son-in-law, M. Vipsanius Agrippa, with the task of designing a world map (*Orbis Terrarum*, #118); essentially a world map that emphasized the extent of the Roman Empire in the first century A.D., it was publicly displayed in Rome and praised by Pliny. An examination of the names of the countries, cities, and other features, and the details of the boundaries on the *Hereford* map shows that these are in great part of Latin origin. Agrippa's lost map, along with later ones of the Roman Empire, form the basis from which the *Hereford* map, together with medieval additions, illustrations and Christian symbolism, was constructed. Additional non-Biblical sources, some previously mentioned, include excerpts from Pliny and the *Antonine Itinerary*, from Orosius and Martianus Capella, from Solinus and the *Aethici*, from the *Alexander Romance*, and from certain *Bestiaries* and *Herbaria*. The *Hereford* cartographer draws from Orosius many of his general notions of the world-outline, and in particular refers to him on the position of the Ganges River, the course of the Nile, and the names of various mountain ranges in Asia and Africa. From Solinus he naturally takes most of his *mirabilia*; and from Isidore the chief part of his ethnology. Capella is especially used as a source in reference to the Mediterranean islands; Aethicus of Istria supplies material for the regions of the Far North.

It is thought by some scholars that this map was originally intended as a "reredos", a decorative background for an altar; there were about twenty altars at that time in the cathedral at Hereford; in fact an 18th century writer described the *mappamundi* as "an ancient altar-piece". This would account for the more than normal emphasis on Christian features in its design. However, if the map were intended for an altar its construction would be a legitimate undertaking for a prebendary in cathedral precincts, and justify his use of cathedral documents, drawing equipment and pigments, but the idea of its being an altar-piece may have been 18th century conjecture. An alternative suggestion would be that it was designed for educational purposes, particularly to stress the teaching of the Christian faith. In either case the work was suitable for a prebendary. It should be emphasized that the mapmaker, Richard, was a cosmologist as well as a cartographer; that is he was explaining the world as well as drawing it. This was important because it came at a time when the general population was uneducated and very provincial. In the *Hereford* map they could revel in this pictorial description of the

outside world, which taught natural history, classical legends, explained the winds and reinforced their religious beliefs.



Detail of Paradise and its four major rivers, Adam and Eve, and a Skiapod (lower left)

GLOSSARY OF NATURAL HISTORY AND ABNORMAL PEOPLE

Translated inscriptions in *italics*

Natural History:

ALERION. Asia. Alerion the only pair in the world. Eagle-like birds of prey. Often represented without beak or feet. Heraldically like footless martlets. Coat-of-arms of Lorraine family.

ANTS. Africa. Here huge ants guard golden sand. Ants dig up gold and guard it.

BASILIK. Asia. Basilisk half a foot marked with white stripes. Hatched by a serpent from a cock's egg, and so also called cockatrice; its breath fatal. Reptile with head of cock, or triple-tufted crest like a royal crown, called basilisk from Greek word for king; King of the serpents. No cock's head in map.

BONNACON. Asia. In Phrygia there is born an animal called bonnacon; it has a bull's head, horse's mane and curling horns, when chased it discharges dung over an extent of three acres which burns whatever it touches. Identified with bison.

BUGLOSSA. France. A buffalo. From its literal meaning in Greek it also signifies the plant ox-tongue, so called from its shape and roughness of its leaves.

CAMEL (Bactrian). Asia. Bactria has very strong camels that never wear out their hooves. Arabian camels have one hump, Bactrian camels have two, as in the map. Camels prefer dirty water to fresh, detest horses, live a hundred years. Example of humility, they kneel to be loaded.

CENTAUR. Egypt. Fauns half-horse men. Centaur wrongly labeled faun; fauns were half goat, half men; centaurs half horse, half men; trunk and arms of man joined to body and legs of horse, as depicted in map. Idea of centaur probably derived from appearance of savage riders. Cavalry still called horsemen.

CIRENUS BIRD. Palestine. Unidentified, possibly cinnamologus, Arabian bird that feeds on cinnamon.

CROCODILE. Egypt. Name derived from crocus, of yellow color like saffron. Reputed to weep hypocritical tears when devouring its victim.

DRAGONS (Dracones). India. Golden mountains defended by dragons. Mythical fire-breathing creature with wings, scales and claws; malevolent in west, benevolent in east. Heraldry, common. Welsh dragon.

EALE—see YALE.

ELEPHANT. India. India also has the largest elephants, whose teeth are supposed to be of ivory; the Indians use them in war with turrets (howdahs) set on them. Two species of elephant, the African and the smaller Indian. The chaste elephant and his wife represent Adam and Eve in the time of their innocence.

GRIFFINS (Gryphae). Asia. Arimaspi contend with griffins for emeralds. Griffins with heads and wings of eagles resemble lions in their bodies they will fly away with an ox. The idea of gigantic winged creatures might be taken from fossilized bones and horns thought to be the claws of monstrous birds.

As when a Gryphon through the wilderness
Pursues the Arimaspiian who by stealth
Had from his watchful custody purloined
They guarded gold. *Milton; Paradise Lost II. 943.*



LEOPARD. Africa. The offspring of a lion and panther mating, *leo pardus*. Member of the cat family, a nocturnal hunter.

LION. Africa. Roams on mountain tops; placed in the map between two mountain ranges. Sleeps with eyes open, an example to the Christian to be vigilant. Spares prostrate foe, a lesson in compassion. The winged lion is the emblem of St. Mark. Heraldry: lion passant guardant in arms of Great Britain.

LYNX (Linx). Asia Minor. The linx sees through walls and produces a black stone— a valuable carbuncle in its secret parts. Wolf-like, tufted ears, short tail, keen sight.

MANDRAKE. (Mandragora). Egypt. Mandragora a plant most wondrously potent. It had aphrodisiac and narcotic properties; used as an anesthetic in ancient Greece. Short spikes, forked root occasionally of human shape. If anyone tries to uproot it, it would shriek and he would die or become insane.

MANTICORA. India. Solinus: The Manticora is born in India with a triple row of teeth a man's face; bluish-grey eyes; red color; lion's body; scorpion's tail and voice of a Siren. It was said to revel in human flesh, was swifter than a bird, in its tail were three fatal stings that could be used as darts.

MARSOK. Asia. Marsok a beast changed from one (color) to another. Quadruped, two feet webbed, two feet with toes or claws. Probably a chameleon that can change the color of its skin to harmonize with its surroundings.

MERMAID. Mediterranean. A woman down to the waist with the tail of a fish. Conventionally holds a mirror in one hand, combing lovely hair with the other. According to myth created by Ea, Babylonian water god. Sometimes identified with Sirens, the mythical enchantresses along coasts of the Mediterranean, who lured sailors to destruction by their singing. Ulysses contrived a way of escape. To her regret the mermaid had no soul, and was regarded as a temptress. There may be significance in the soulless mermaid placed in the map close to the unattainable Holy Land, or she may be a possible temptation to sea-faring pilgrims.

MINOTAUR. Misplaced in Scythia. Scythia. Here I found beasts like the minotaur useful for war. The place for this bull-headed monster is Minos' kingdom of Crete. Associated with bull-cult and Cretan ceremonial bull-leaping.

MONOCEROS—see Rhinoceros (Unicorn).

OSTRICH (Ostricius). Europe. Ostrich head of a goose; body of a crane; feet of a calf. Capable of digesting iron; reputation for folly in leaving the sun to hatch its eggs and burying its head in the sand when pursued.

PARROT (Psittacus). India. Solinus: Indian sends for the parrot a bird of green color with purple neck. According to Aristotle the tongue of a parrot resembles that of man.

PELICAN. Asia. For my young I rend my heart. The mother bird was reputed by St. Augustine and Isidore to kill its young by kisses or blows, and after three days the male bird would wound himself in the breast and revive the brood with his own life-blood. A symbol of the Resurrection.

PHOENIX. Egypt. The bird phoenix lives for five hundred years it is the only one of its kind in the world. According to Herodotus a red and golden bird, the size of an eagle. Every five hundred years the phoenix visited Heliopolis, the city of the sun, with the embalmed body of its father in a roll of myrrh and buried it in the temple of the sun. Then it plunged to its own death in fire, to be re-born from the ashes. Christian symbol of the Resurrection.

RHINOCEROS. Egypt. Solinus: The Rhinoceros a native of India; is the color of boxwood; it erects its single nasal horn when fighting against elephants; being the same length but shorter in the leg it naturally attacks the belly which it realizes is the only vulnerable spot.

SALAMANDER. Egypt. Salamander a most venomous reptile. A species of newt or lizard. Wrongly represented with wings; often colored red because capable of living in fire.

SCORPION (Scorpio). Egypt. Germany. Crab-like stinging creature injecting poison with its tail. Eighth sign of the Zodiac.

SIMIA (Ape). Norway. Simia from a Greek-word, snub-nosed, i.e., unattractive appearance. Anthropoid, man-like, e.g., gorillas, chimpanzees, orangutans.

TIGER (Tigris). Asia. A tiger when it sees its cub has been stolen chases the thief at full speed; the thief in full flight on a fast horse drops a mirror in the track of the tiger and so escapes unharmed. The point of the maneuver is that the thief escaping with a tiger-cub throws down a mirror to delude the pursuer which sees its own reflection in the mirror, mistakes it for the cub, stops to fondle it, loses valuable time and the thief escapes. Tiger meat was eaten to give strength and courage; the cub may have been stolen for this purpose.

TIGOLOPES (Ugolopes). Syria. Webbed feet, tail, holding up a wand.

UNICORN (Monoceros). Egypt. A virgin girl is set in front of this unicorn; at his approach she opens her lap; there he lays his head with all ferocity vanished and stupified and defenseless is captured. A frequent subject for bestiaries. Unicorn's strength and gentleness symbolic of Christ. In heraldry: supporter of royal arms.

YALE (Eale). Asia. Solinus: the eale is born in India with the body of a horse; the tail of an elephant black in color goats jaws; horns more than a cubit long not rigid but moveable as the need arises in fighting; it fights with one and folds back the other. This creature, recorded by Pliny and Solinus, was long regarded as mythical but identified in 1968 by Wilma George as the Indian water buffalo whose horns are not movable; instead of butting it uses one at a time with sideway inclination of head.

Abnormal People:

AGRIOPHANI ETHIOPEs. Africa. Agriophani Ethiopes eat only the flesh of panthers and lions they have a king with only one eye in his forehead. (Solinus). Identified with the Agofagy of the Alexandrian Romance.

ALBANI. Asia. The Albani have grey eyes and see better at night. Their eyesight described by Isidore, their unclean habits by Aethicus.

AMAZONS. Asia. The Pandean race in India is ruled by women. Assumed to be Amazons, female warriors; said by Herodotus to live in Scythia. Amazon means "without a breast," according to tradition these women removed the right breast to use the bow.

ARIMASPIANS (Carimaspi). Asia. Arimaspians fight with griffins for diamonds.

BLEMYAE. Africa. The Blemyae have mouths and eyes on their breasts. (Isidore and Solinus); a wild Ethiopian race frequently invading Egypt; hung down their heads when captured, hence the description.

CYNOCEPHALES. Europe. Men with dog's heads in Norway; perhaps heads protected with furs made them resemble dogs.

ESSENDONES. Asia. Essendones live in Scythia it is their custom to carry out the funeral of their parents with singing and collecting a company of friends to devour the actual corpses with their teeth and make a banquet mingled with the flesh of animals counting it more glorious to be consumed by them than by worms. (Herodotus). Solinus adds that they set the skulls in gold and used them as drinking cups.

GANGINES. Asia. Solinus: they occupy the source of the Ganges and live only on the scent of apples of the forest if they should perceive any smell they die instantly. (Aethicus; Pliny). Their name derived from the river Ganges.

GANGINES OF ETHIOPIA. Asia. There is no friendship with them. Two men seen embracing, but they have no friendship with others.

HERMAPHRODITE. Africa. A race of dual sex born with many strange instincts. (Solinus; Mela; Isidore).

HIMANTOPODES (Limantopodes). Africa. Himantopodes; they creep with crawling legs rather than walk they try to proceed by sliding rather than by taking steps. Quite simply, they crawl on all fours as depicted.

HYPERBOREANS. Asia. The Hyperboreans as Solinus says: are the happiest race; for they live without quarrelling and without sickness for as long as they like, and when weary of life they fling themselves into the sea from a well-known rock; they think that is the best kind of burial. (Herodotus; Pindar).

MARMINI (Maritimi). Africa. Maritime Ethiopians who have four eyes. Keen sighted.

MONOCOLI (Sciapods). Asia. The Monocoli in India are one-legged and swift when they want to be protected from the heat of the sun they are shaded by the size of their foot. (Solinus; Pliny). Not to be confused with Monoculi, one-eyed.

MOUTHLESS RACE IN ETHIOPIA. Africa. A race with mouth grown fast together fed through a reed.

PHANESII. Asia. Phanesii are covered with the skin of their ears. A bat-like people with enormous drooping ears. Identified with Auryalyn in the Alexandrian Romance.

PHILLI (Psylli). Africa. Psylli test the chastity of their wives by exposing their new-born children to serpents. (Solinus). Legitimate babies are untouched by the serpents. The burning mountain full of serpents is threateningly near.

SCIAPOD – see **MONOCOLI**.

SCYTHIANS. Asia. A race of Scythians dwelling in the interior; unduly harsh customs; cave dwellers; making cups not like the Essendones out of the skulls of friends but of their enemies; they love war; they drink the blood of enemies from their actual wounds; their reputation increases with the number of foes slaughtered and to be devoid of experience of slaughtering is a disgrace. (Solinus; Mela).

SPOPODES. Asia. They have horses' feet, as the Greek name implies.

TROGLODYTES (Trocoditee). Africa. Troglodytes exceptionally villainous capture wild animals by leaping on them. (Solinus). Cave dwellers.

TURKS (Turchi). Asia. The island of Terracontia where the Turks dwell; descendants of Gog and Magog; a barbarous and unclean race devouring the flesh of youths and abortions. Associated with Mongols and Tartars, a threat to the Greek Empire. (Aethicus).

The best pictorial collection of monsters are in *The Marvels of the East* by M.R. James (Roxburghe Club) 1929, with representations from manuscripts in the British Library and the Bodleian Library, and "Marvels of the East", by R. Wittkower, *Journal of the Warburg and Curtland Institutes*, V. (1942), p. 129, which is fully illustrated and contains a detailed study of the whole subject. See also *John Mandeville's Travels* from the Hakluyt Society.

Although the map has graced Hereford Cathedral for hundreds of years, it achieved widespread recognition as a result of the Royal Academy's *Age of Chivalry* exhibition in London during the winter of 1987-88. Then, in November 1988, the Cathedral shocked the nation with a proposal to avert bankruptcy by auctioning off their *Mappa Mundi*. So great was the public outcry that the National Heritage Memorial Fund stepped in to keep the map at the Cathedral. Since 1996, the *Mappa Mundi* has been housed there in the New Library Building. Thanks to the efforts of so many, each of us still can make our own pilgrimage to Hereford to contemplate what Helen Wallis has called "one of the great treasures of Western and Christian civilization."

Since the late 1980's much work has been done on the *Hereford* map. In his *Mappa Mundi*, P.D.A. Harvey presents a beautifully illustrated, up-to-date survey of the map and its cartographical context. Scott Westrem's indispensable *Hereford Map: A Transcription and Translation* offers a critical commentary of the map's predominately Latin inscriptions, and - comes with English translations, discussions of sources, and observations about the map's images - all keyed to numbered photographic plates. In *Mapping Time and Space*, Evelyn Edson contextualizes the *Hereford* map by showing how medieval mapmakers viewed their world. Naomi Kline's *Maps of Medieval Thought* regards the *Hereford* map as a paradigm for understanding recurrent themes in medieval art and history. Along with the first volume in David Woodward's monumental *History of Cartography* project, the new edition of John Friedman's *The Monstrous Races in Medieval Art and Thought*, and Naomi Kline's delightful CD-ROM *A Wheel of Memory*, the *Hereford* map is more accessible and better understood than it has been in centuries.

In 1999, a symposium in Hereford attracted the leading *mappamundi* scholars, most of whom agreed upon the hand of a man called Richard of Battle, known in Latin as Richard de Bello, a canon of Lincoln and Salisbury, a prebendary of Sleaford who may have lived in Holdingham; but they were unsure if this was one man, or a Richard of Battle Snr and Jnr, related or not. Four years later, the map historian Dan Terkla presented a paper on the *mappamundi* at the 20th *International Conference on the History of Cartography* at Harvard. He speculated that four separate men were directly responsible for the map's design, three of them named Richard - Richard of Haldingham and Lafford, Richard de Bello, Richard Swinfield - and the other, Thomas de Cantilupe. The second Richard, he believes, was a younger relation of the first, who worked on the map at Hereford after moving from Lincoln; the third was a friend working as a financial administrator and bishop at the cathedral; while Thomas de Cantilupe was Swinfield's predecessor and may also have been the mounted huntsman on the map's fringe.

Terkla asserted that the map formed a part of what he called the *Cantilupe Pilgrimage Complex*, a collection of possessions and relics associated with the bishop, who was canonized in 1320. De Cantilupe's shrine in the north transept had proved a huge draw on the pilgrim trail even before his sainthood, after word spread of its uncanny associations with miracles. Almost five hundred miraculous acts were recorded by the custodians of the shrine between 1287 and 1312, with seventy-one miracles listed in April 1287 alone - the year the royal family visited.

In 2000, a rather different *mappamundi* scholar, Scott D. Westrem, travelled from the United States to examine the map without the glass, and his forensic report displays Sherlockian sleuthing. 'The vellum on which it was drawn came from the hide of a single calf, probably less than one year old when it was slaughtered,' he surmised. He

observed that the map was drawn on the inner side of the skin, noting the silvery fleshy membrane. He described how the cured hide was carefully scraped to remove hair and residual fat, and suggested that the skinner's knife slipped only once during the process, severing the skin near the tail end, probably when it encountered scar tissue. 'The skin's quality is very high and apparently of even thickness; there is almost no sign of the rippling that results from the impression of the rib cage and other bones, indicating that the beast was consistently well fed.

LOCATION: Hereford Cathedral, Hereford, England

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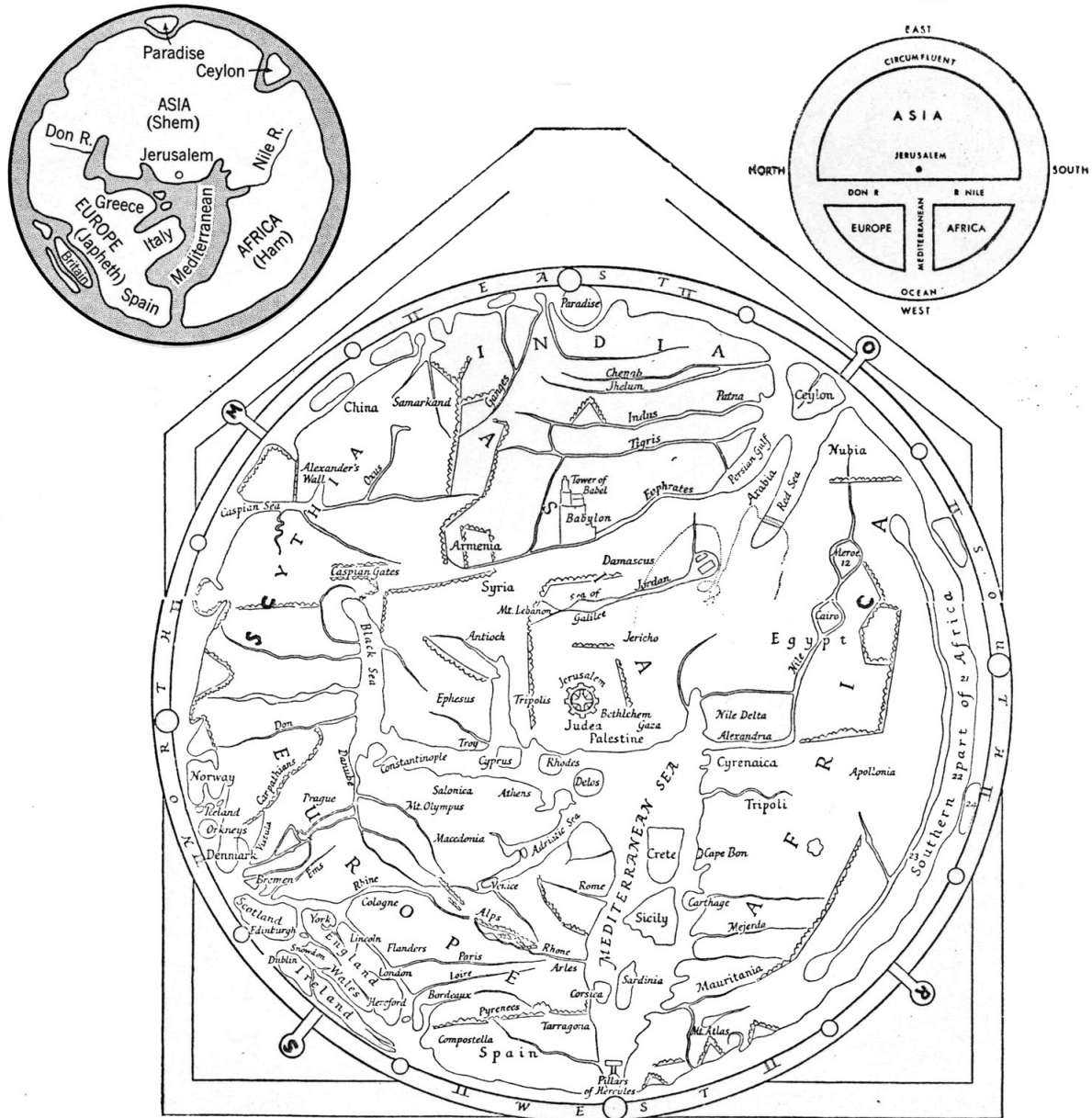
*illustrated



The Hereford mappamundi, 1.65 x 1.35 m, is attached to a framework of oak, the actual map being set in a 1.32 m diameter circle, in the Hereford Cathedral, U.K.



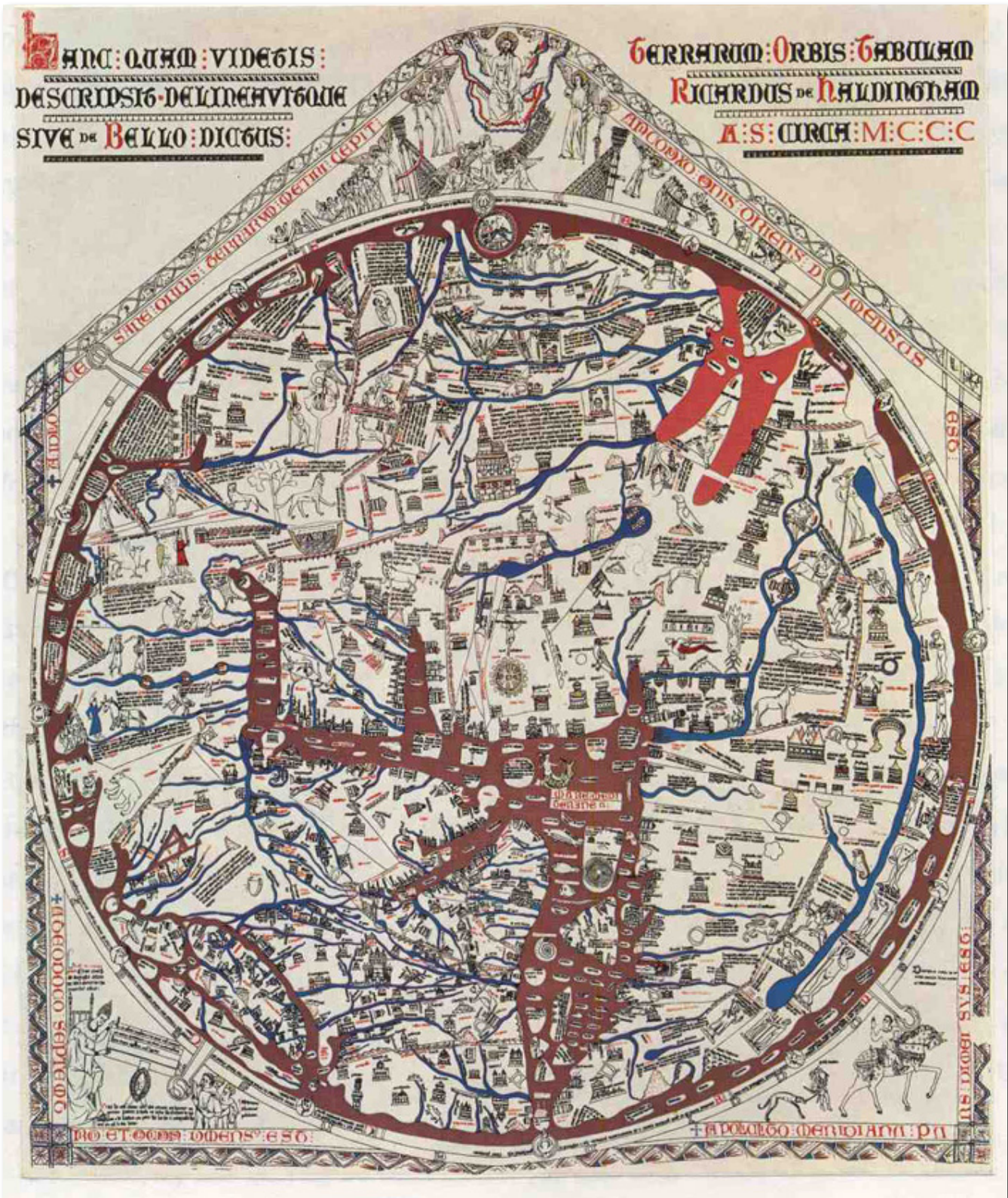
The Hereford mappamundi, 1.65 x 1.35 m in the Hereford Cathedral, U.K.



Outline map from Crone with some names in modern form, the labeling of AFRICA and EUROPE corrected and void of all illustrations except the Tower of Babel.



Hereford Detail: Nile River, Africa and "monstrous races"



Making a Mappamundi: The Hereford Map

Scott D. Westrem

Produced some seven hundred years ago, a large map of the world that is housed today in the cathedral at Hereford, on the English border with Wales, is a great encyclopedia of knowledge imprinted and illustrated on a single page, but a page that measures over five feet long running vertically down the middle and almost four-and-one-half feet horizontally. On it the terrestrial landmass of the earth—what we today would call Asia, Africa, Europe, and adjacent islands—is depicted as having a round format; the great Ocean Sea believed to separate east Asia from western Europe was both enormous and unknown to the medieval world, and cartographers found no cause to devote much attention to this great void. The map is literally oriented: thus East is at the top and North to the left. In conformity with biblical passages describing Jerusalem being set “in the midst of the nations,” the Holy City is found at the map’s exact center (where, in fact, an image of the crucified Jesus appears). The surface of the map is replete with inscriptions—or map “legends,” numbering nearly 1,100 by my count—most of which are simple names of towns, rivers, mountains, and islands, but some of which contain detailed cosmological, ethnographical, historical, theological, and zoological information (or at least lore). Many hundreds of these legends have an adjacent depiction.¹ The single sheet of vellum—or fine parchment—on which this round earth is drawn is itself pentagonal, conforming to the shape of the calf that gave its skin to the history of cartography, and in the corner spaces between the pentagonal frame and the circular earth are scenes of the Last Judgment (at the top), of Caesar’s commissioning of geographers to assemble a complete account of the world (at lower left), and of a huntsman calling out in French to a rider on a horse in a rather puzzling illustration that probably has a connection to an important juridical proceeding in the diocese of Hereford in the late 1280s (at lower right). Each of these scenes might be—and has been—the subject of focused scholarly study in its own right.² Although such marginal designs of religious and historical significance are relatively uncommon in known examples of medieval cartography, the image of the earth in Hereford Cathedral is the largest traditional world map—or *mappamundi*—that survives from the Middle Ages.³

To be sure, other gigantic *mappaemundi* are known from artifact or record. The Ebstorf Map, probably assembled around 1239 on thirty stitched-together sheets of vellum, was almost six times larger than the Hereford Map, although its number of legends represents an increase of only around 15%; it was destroyed by Allied bombs during World War II. The *Catalan Atlas*, which the King of France appears to have possessed by 1375, is also a cartographical monument, but it is a hybrid *mappamundi* and marine chart, oriented to the north and rectangular in format (it is mounted today double-sided on six wooden panels, and is housed in the Bibliothèque Nationale de France). The *Fra Mauro* world map of the mid-1400s (#249, now in Venice) easily outsizes the *Hereford* Map, but it has south at the top—after the fashion of Islamic cartography—and also shows some influence of navigational maps in its delineation of coastlines. We know of three other large-scale world maps from the chronicler Matthew Paris (#225), a cartographer in his own right, who copied one in the king’s chamber at Westminster into his ordinal around 1250; none of the originals and only one of Matthew’s copies survives. The art historian Marcia Kupfer has made something of a career out of finding behemoth *mappaemundi* that have been lost to time, as church or civic walls have collapsed or been plastered over, leaving only a trace of some former glory.⁴

Understandably, a great deal of scholarly attention has centered on important historical questions regarding the *Hereford* map: its date of production, its place of origin, its maker or

makers. As is the case with many other medieval “texts,” the Map has occasioned much dispute with little consensus. Recently, however, an article by the historian Valerie I. J. Flint and an assembly of map scholars organized in the summer of 1999 by P. D. A. Harvey and Peter Barber at Hereford Cathedral has shed helpful light on some aspects of the Hereford Map’s history. It seems likely that the Map—or at least its prototype—was drawn in Lincolnshire or Yorkshire, but that it was very early on (and perhaps originally) in the possession of the bishop of Hereford. (Among other things, the network of rivers and the citing of cities is extremely impressive in northeast England, whereas the depiction of the southwest, in the Hereford area, has some striking inaccuracies.) A recently discovered wooden frame matches drawings of the Map that date from the 1770s (this frame appears to be the same one referred to in the first historical mention of the Map, from 1682); carbon dating of the wood indicates that the frame is at least as old as the Map itself, and a gouged hole at the frame’s exact center may well have been made by the compass foot that was used to draw the circle of the earth, two surrounding rings, and the city of Jerusalem (the Map has an apparently corresponding perforation at its exact center where the compass may have poked through). The eighteenth-century drawings show the Map to have been flanked by images of the angel Gabriel and the Virgin Mary, and it may thus have been part of a triptych of images, although in what way it would have functioned in religious ceremony or contemplation is unknown.⁵

Attention has been paid so intently to archival material, however, that one other question of historical interest has been somewhat overlooked: that is, what went into making a *mappamundi*? Since 1994, I have visited Hereford four times to study the cathedral’s cartographical treasure—most recently in January 2001, when I was able to examine it outside its case under ample light for many hours—and during these visits I have discovered that for some basic empirical questions, the Map is its own best witness as a prime example of what might be called “luxurious cartography.”⁶

It can tell us, for example, that the Map’s making was costly, organized, time-consuming, and taken seriously from the very beginning. The vellum on which it was drawn came from the hide of a single calf, probably less than one year old when it was slaughtered. The skin’s quality is very high and apparently of even thickness; there is almost no sign of the rippling that results from the impression of the rib cage and other bones, indicating that the beast was consistently well fed. The cured hide was carefully scraped to remove hair and residual fat; only at one spot near the bottom, the tail end, did the *luna* (scraping) knife employed in the process apparently slip and sever the skin, probably when it encountered scar tissue. The fact that there is only one instance of such a phenomenon is further testimony to the calf’s good health and breeding. The text and design appear on the flesh side of the vellum, where the inner skin’s silvery membrane has been preserved; its luster is still visible. On the basis of their close analysis of the handwriting and decorative pictures on the Map, announced at the Hereford Map conference two years ago, Malcolm B. Parkes and Nigel Morgan have shown quite conclusively that this work most likely took place between 1290 and 1300.⁷

A team of talented people worked at separate times on the Map. The outer circles were most likely drawn first, with a compass: there are three of these, with the round earth surrounded by a double set of rings, forming a series of concentric circles. In an era before the “discovery” of perspective, this was diagrammatic short-hand in geometrical texts for a sphere. (Scholars who have looked at the *Hereford* map’s earth and dismissed it as a disc or proof of medieval belief in a flat earth are victims of their own myopia.)⁸ Design preceded text, and the order of illustration appears to have commenced with major geographical units (including the general coastline and most or all of the Map’s 105 islands). A group of artists was probably responsible for the images that followed. Human figures and animals seem to have been drawn first, followed by mountains, then rivers, city emblems (or “architectural devices”), and miscellaneous depictions, such as the colossus of Rhodes or Daedalus’s labyrinth on Crete. Some designs were sketched out in pale ink or perhaps crayon before they were more definitively drawn in or altered; the painting of all the

designs—including those along the upper arc and in the two lower corners—probably occurred at one time and almost certainly before the addition of any written text. (The Map's colors were made from vegetable dyes that have much faded over time: the bright blue of the rivers can still be glimpsed in some places, but the green of the seas—as well as of several forests and garments worn by humans—has faded to a brown that leaves us with a much more drab impression of the world than an original spectator would have enjoyed.)

In the upper left-hand corner of a section of the Map that is at its very center (**Figure 1**), for example, a double-humped camel faces to the left just beneath the applied legend number 160. Faint lines of a river run horizontally through the beast's legs: the sketched-in course of this river—the *Bactrus* (modern Balkh-ab, in Afghanistan), flowing from right to left—had to be altered to accommodate the inked-in drawing of the camel, and it was in any event originally set to run impossibly from one mountain range through another one (the second range is adjacent to §159). Halfway down on this same section of the Map, also near the left edge, text combines with image in the description of the so-called “*bonnacon*” (§235). This animal moves toward the left but looks over its shoulder at its own explosion of diarrhea, which, according to the adjacent legend, sprayed a distance of three acres and scalded anything it hit, a rather effective defense system. From the standpoint of the Map's production, the important element here is the *bonnacon*'s tail, which stands up on end and is forked; the scribe has been forced to write the fourth line of his text around the image, which was obviously produced first. The legend also displays the scribe's careful attention to detail in his correction of the Latin word “animal” in the first line of the text, adding two missing letters above the line. All legends on the Map were written (and some were corrected) by this single scribe, except for the illuminated upper-case letters (a handwriting style, known as *Lombardic*, that functioned as a “display script”) found along the Map's pentagonal edge, as well as in the names of the four cardinal directions, found in the outer ring surrounding the earth, and the names of the earth's principal land areas (Asia, India, Africa, and Europe). The uneven spacing and spread of the letters indicates that they were wedged in wherever they would fit in the by-and-large complete design. It was this last artist who committed the Map's greatest blooper by reversing the labels for Europe and Africa, which Valerie Flint has called “a mistake whose dimensions inspire a certain awe.”⁹ Perhaps because his work came last, it was not noticed in the early days of the Map's history. Except for this last faux pas everything about the Map as a physical object bespeaks its exacting, expensive production, a process that may have taken well over a year.

The making of a *mappamundi* was a significant textual matter, and the compilers of the Hereford Map display an impressive awareness—either directly or indirectly—of geographical texts by at least ten writers whose works went into circulation between the first and eighth centuries, as well as the Bible and a number of medieval works. Around 150 of the Map's 1,091 legends can be definitively traced to one of these sources, making this a remarkable example of medieval inter-textuality, since many hundreds of legends are only one or two words long and thus cannot be reliably attributed to any one writer. Moreover, some of these writers were sources for each other—Solinus re-wrote Pliny, Isidore used Solinus, and Hugh of St. Victor carefully studied Isidore, so it is sometimes hard to determine which of two or three possible authorities underlies a given legend. The names of these sources, many of which were pagan writers, and the frequency with which each can be shown to be cited on the Map can be found in **Chart 1**.¹⁰



Figure 1. The center of the *Hereford* map, showing Asia Minor and Syria/Palestine and the east Mediterranean coast (compare the contents on **Chart 4**). The succession of towns on the coast of Asia Minor (§342a/b-345, 348-55) follows very closely their sequence in the *Exposito mappe mundi*. The large city at the top edge is Babylon (its description is the map's longest legend [§181]). At the right edge, a looping line shows the route of the wandering Israelites in their Exodus from Egypt; it crosses the Jordan to the left of a naked woman who looks over her shoulder at the sinking cities of Sodom and Gomorrah in the Dead Sea (she is Lot's wife, turned into a pillar of salt [§254]). The circle one-third of the way from the bottom is Jerusalem, the Map's central point, with a crucifixion scene above it ([§387-89]).

Chart 1. Principal Sources and Analogues for Information on the Hereford Map*(listed chronologically)*

- The Bible; quoted and cited in one legend, underlies some 20 others
- Pliny, *Naturalis historia* (a.d. 79 [unfinished]); definitive source for 12 legends
- Antonini Augusti *itineraria provinciarum et maritimum* [The Antonine Itinerary] (c. 211-217, with later revisions); likely source for 100-150 toponyms
- Solinus, *Collectanea rerum memorabilium* (c. 230/240); definitive source for 53 legends
- St. Jerome, *De situ et nominibus locorum hebraicorum liber* (390); definitive source for 1 legend, likely source for many others
- Julius Honorius, *Cosmographia Iulii Caesaris* (c. 312/400); definitive source for 6 legends
- Martianus Capella, *De nuptiis Philologiae et Mercurii* (c. 410/439); definitive source for 6 legends
- Paulus Orosius, *Historiarum adversum paganos libri vii* (c. 418); definitive source for 6 legends; likely source for at least 33 others
- Isidore of Seville, *De natura rerum* (612-613); definitive source for 11 legends
- Isidore of Seville, *Etymologiarum sive Originum libri xx* (636 [unfinished]); definitive source for 35 legends
- Aethicus Ister, *The Cosmography* (late seventh/early eighth century); definitive source (much revised and abstracted) for 16 legends
- Others: Adamnan, *De locis sanctis* (c. 700 [1 legend]); Paul the Deacon, *Historia Langobardum* (late 8th century [1 legend]); Hugh of St. Victor, *Descriptio mappe mundi* (c. 1130 [2 legends, perhaps 3 others]); the French translation of The Letter of Prester John (c. 1200 [2 legends])
- Roger of Howden (?), *Expositio mappe mundi* (c. 1190); 437 (of 1,091) legends appear verbatim or nearly so in this work, with another 50 indirect matches; of 484 itemized data-bits in EMM, 401 are found verbatim or nearly so on the Map. The two known manuscript copies are fragmentary; internal references suggest that the original version contained sections on Iberia, the British Isles, and islands in the Black and Mediterranean Seas, which are not covered in the surviving text.

The range of information is also impressive. **Chart 2** presents an overview of the various kinds of data on the Map. This chart is based on my division of the terrestrial landmass on the Map into five basic units; in addition, 31 legends are found in the peripheral areas of the vellum outside the circle of the earth (sectional divisions are highlighted on **Figure 2**). In this division Asia occupies the top half, Europe the lower-left quadrant, and Africa the lower-right quadrant; separate categories exist for the Euxine—or Black Sea—and Mediterranean islands, spread across the middle of the Map and forming a kind of radius bar in the lower half, and for a corridor of monstrous people or humanoids along the right edge of the Map, but not figured specifically as Africans.¹¹ The numbers record how many legends have a particular cartographical topic as their principal subject. A few legends combine topics, identifying a river or a kingdom, for example, that is more directly related to a theological or historical matter. In such cases, the geographical feature is regarded as secondary, and it is included in the number recorded between parentheses on the second line in each box.¹² Percentages run across along every row (for categories) except for the right-most column, in which they run vertically (for overall totals).

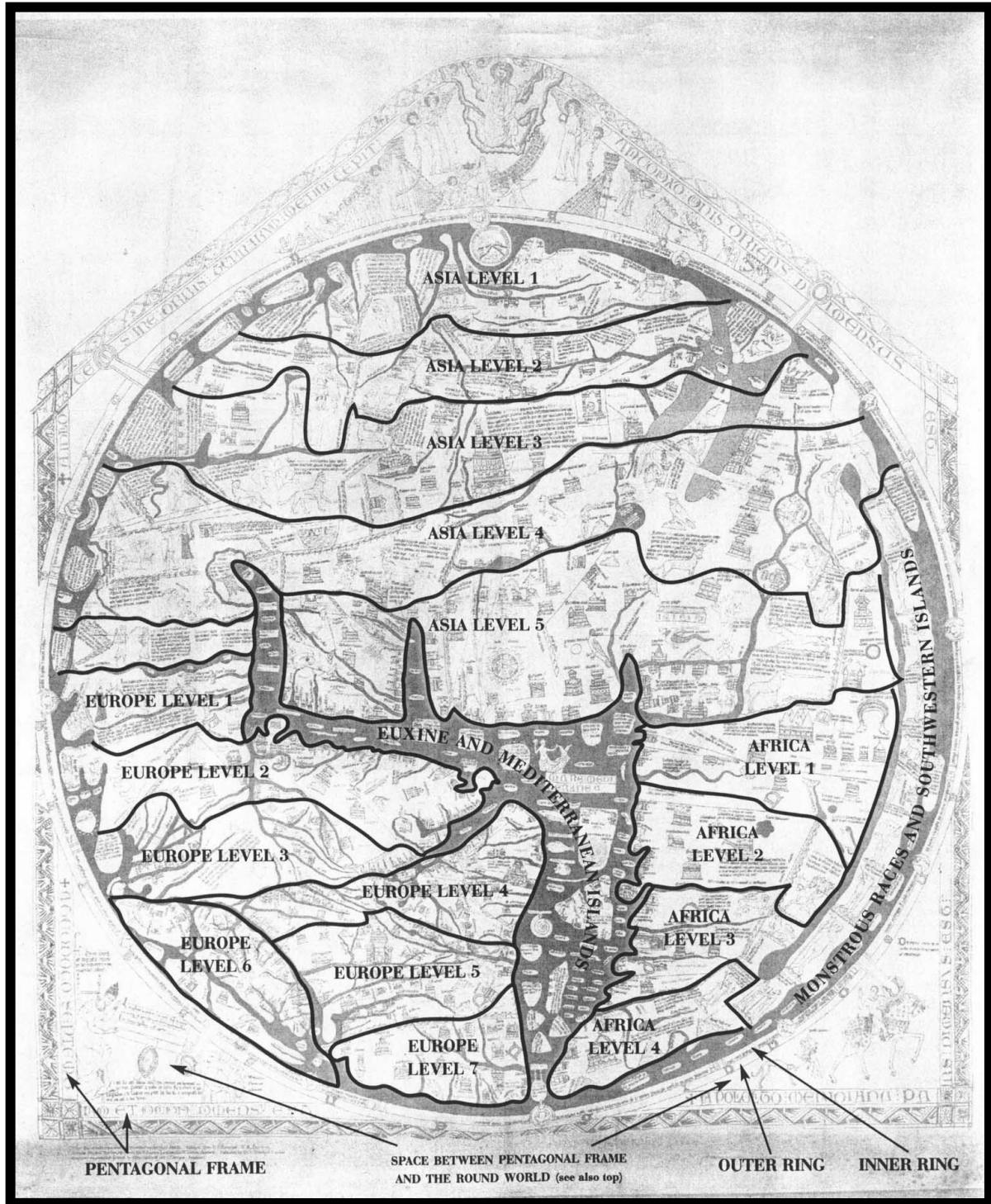


Figure 2. Sectional divisions of the earth employed on Chart 2 (and in Westrem, *The Hereford Map*.)

The chart may enable us to see the world in a more analogous way to that in which its makers envisioned it. Asia is notable for its ethnic groups and animals; it is the arena for almost all the scenes of religious—and most of those of historical—consequence. Europe, by contrast, is largely reduced to physical geography: it has as many kingdoms and provinces as vast Asia, and almost twice as many cities (more than half the cities in the world, and three-fifths of its rivers,

are found in Europe, reflecting its commercial and civic character). Most of the legends in Africa identify regions or towns; the lengthiest legends are measurements of various distances and come from passages in ancient sources that debate whether or not Africa was large enough to be thought one of the earth's principal "parts." Islands are by and large named with no further attention to them, and the corridor of strange humans, unsurprisingly, is largely a collection of (pseudo-) ethnographic information. Scholars who consider the Hereford Map a gigantic Bible story—or even a lesson in Classical history—however, should note the very small percentage of legends that take these subjects as their principal themes.

The likelihood that a cartographer—or even a team of mapmakers—sat with a collection of ten or fifteen manuscripts around them and recorded various passages on a huge piece of calf skin laid before them has seemed an unrealistic way to imagine the assembly of data that come from so many sources and range so widely in content as we see on the Hereford Map. Historians of cartography have conjectured that surviving and lost maps of this kind must have been copied from each other or some, probably French, prototype, although how and in what format this prototype circulated has been uncertain because no one has ever located a "smoking gun." Aware that navigational charts with extremely "accurate" representations of the east Atlantic, Mediterranean, and Black Sea coastlines were being drawn from at least the late 1100s, at the same time that *mappaemundi* were representing a more schematized earth, they have also taken it somewhat for granted that these two images of geographical reality came from different—indeed, in the estimation of some, intellectually quite opposed—circles.¹³

Just what kind of source they may have used has been detected by Patrick Gautier Dalché, one of the most brilliant and innovative historians of medieval culture in the world today, who has found two manuscript copies of a text entitled *Expositio mappe mundi* (hereafter referred to as "EMM").¹⁴ If it is not the recipe for making a *mappamundi*, EMM is certainly a careful record of the content of an existing one (so careful, in fact, that even if it was originally composed only as a *descriptio*, it could have been used to produce another). The text is in essence a collection of 484 data items, which range from detailed reports about Asian locations to simple toponyms listed according to their location along coastlines or rivers. (The text as we have it today breaks off mid-word in both manuscripts, and the original is likely to have had around 200 additional itemized names.) That cartographers did indeed employ EMM (or a text very like it) is proved by the inscriptions on the Hereford Map, where more than 400 of these 484 existing data items appear verbatim or nearly so.¹⁵

EMM is a spatially specific, instructive manual about the appearance of a world map; its language approaches that of a rudimentary science, as the citations recorded on **Charts 3** and **4** indicate. A map "legend" is a *titulus*; many toponyms are noted to be "opposite" (contra) others; some are specifically noted to "span" rivers, appear "to the south of" something else, or be "above," "after," or "below" a different city, mountain, or island. Some territories are "demarcated" (*distinguuntur*) by lines. A design "depicted" (*pingitur*) near a legend is briefly, exactly described. Regions of the earth are divided into sections and treated separately. Thus, the writer observes that the Danube has sixty tributaries, "of which we shall place twelve on the map"; each of the dozen is identified, working from west to east (source to mouth), with key adjacent cities located, usually along one (or at a confluence) of the rivers.¹⁶ This locational and imagistic exactitude is evident in the passages quoted in **Chart 3**, in the left column, in which the author of EMM describes precisely the placement of six islands along the upper-left (northeast) rim of the earth. A comparison of the text of, and instructions for layout in, EMM with the legends and design of the *Hereford Map* on **Figure 3** reveals their exact correspondence.¹⁷

Kind of Toponym	Asia	Europe	Africa	Mediterranean & Black Seas	<i>Monstruosi Populi</i> Corridor	Total
Names of Land Areas (Kingdoms/ Ancient and Modern Provinces)	62 (6) (45.3%)	61 (2) (44.5%)	13 (4) (9.5%)	0 (0%)	1 (1) (0.7%)	137 (13) (12.9%)
Names of Cities/Towns/Ports	120 (7) (30.9%)	210 (1) (54.1%)	44 (6) (11.4%)	14 (3.6%)	0 (0%)	388 (14) (36.6%)
Names of Islands	18 (3) (17.1%)	11 (10.5%)	0 (0%)	66 (1) (62.9%)	10 (2) (9.5%)	105 (6) (9.9%)
Names of Mountains/Hills/Promontories/ Valleys	49 (3) (52.7%)	22 (23.7%)	12 (12.9%)	8 (2) (8.6%)	2 (1) (2.1%)	93 (6) (8.8%)
Names of Bodies of Water (Marine)	5 (3) (23.8%)	5 (1) (23.8%)	0 (4) (0%)	11 (1) (52.4%)	0 (0%)	21 (8) (2.0%)
Names of Bodies of Fresh Water (Including Fountains, but not Rivers)	7 (1) (58.3%)	2 (16.7%)	3 (1) (25.0%)	0 (0%)	0 (0%)	12 (2) (1.1%)
Names of Rivers	49 (7) (33.1%)	89 (1) (60.1%)	9 (1) (6.1%)	1 (0.7%)	0 (0%)	148 (3) (14.0%)
Names of Roads (?)	0 (0%)	3 (100%)	0 (0%)	0 (0%)	0 (0%)	3 (0.3%)
Names of Inhabitants/ Ethnic Groups (Including Humanoids with Strange Shapes/Behaviors)	40 (8) (58.8%)	13 (2) (19.1%)	3 (3) (4.4%)	0 (1) (0%)	12 (17.7%)	68 (14) (6.4%)
Names of Animals (Including Marvelous Beasts)	22 (5) (68.8%)	5 (15.6%)	4 (2) (12.5%)	1 (1) (3.1%)	0 (5) (0%)	32 (13) (3.0%)
Names of Characteristic Products/ Plants/Metals	4 (5) (100%)	0 (0%)	0 (0%)	0 (1) (0%)	0 (0%)	4 (6) (0.4%)
Measurements of Land Areas and Distances	2 (4) (16.7%)	2 (1) (16.7%)	5 (2) (41.7%)	1 (5) (8.2%)	2 (16.7%)	21 (14) (2%)
Concepts/Ideas/Names Associated with Biblical/Christian History	23 (7) (95.8%)	1 (1:Rome) (4.2%)	0 (1) (0%)	0 (0%)	0 (0%)	24 (9) (2.3%)
Concepts/Ideas/Names Associated with "Secular" History/Mythology (Including Monuments)	6 (11) (54.5%)	0 (1) (0%)	3 (1) (27.3%)	2 (4) (18.2%)	0 (0%)	11 (16) (1.0%)
Names Associated with Geographical Writings	0 (12) ----	0 ----	0 (1) ----	0 ----	0 (2) ----	0 (15) ----
Other Category	1 (50.0%)	1 (50.0%)	0 (0%)	0 (0%)	0 (0%)	2 (0.2%)
SUBTOTAL	408 (38.5%)	425 (40.1%)	96 (9.1%)	104 (9.8%)	27 (2.5%)	1,060 (97.2%)
Legends Outside the Earth Circle	----	----	----	----	----	31
TOTAL	408	425	96	104	27	1,091

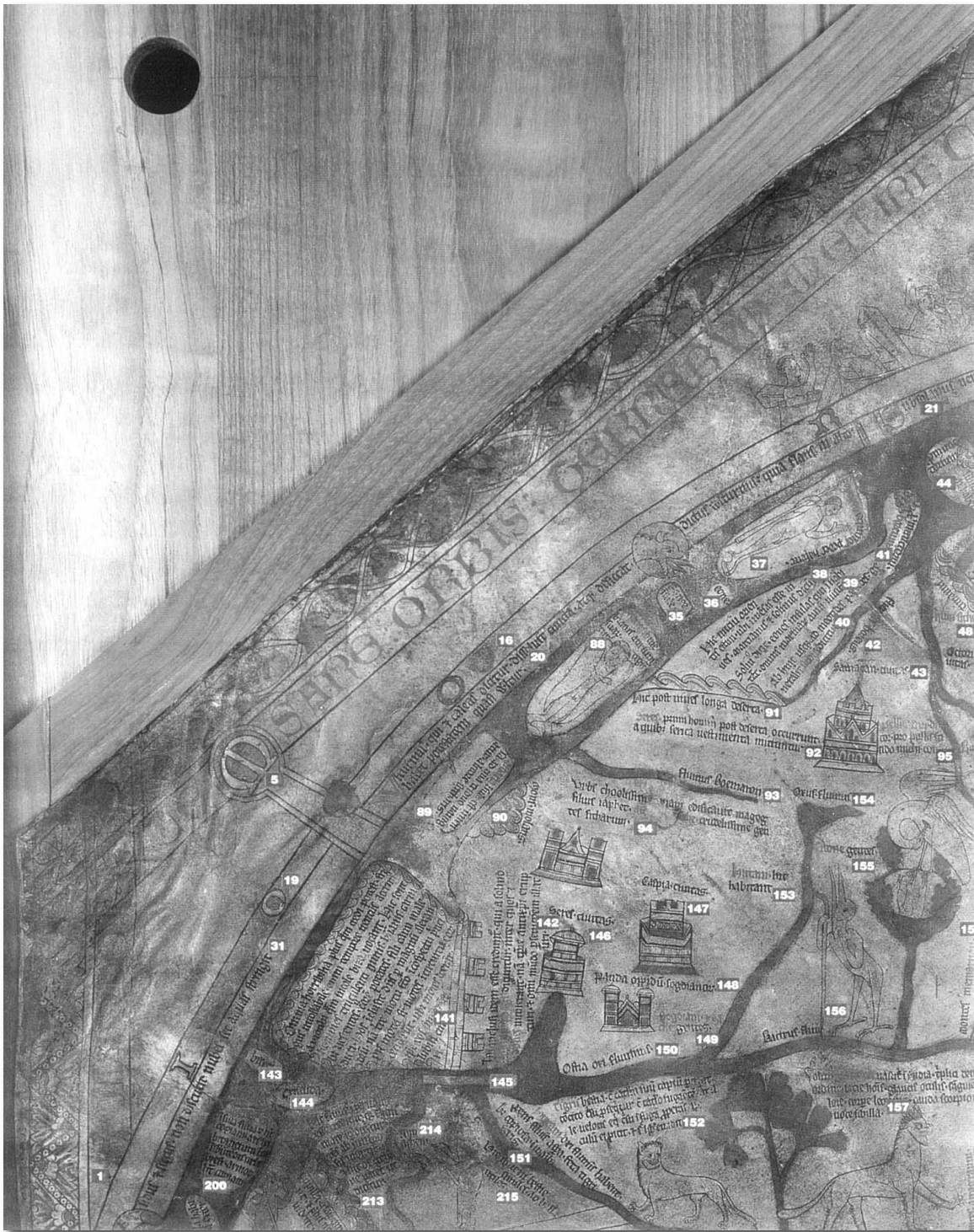


Figure 3. The upper-left corner of the Hereford Map, showing north and east Asia (compare to the contents on Chart 3). Along the edge of the earth, from lower-left to upper right, are the "islands" with the evil offspring of Cain (walled off from the rest of civilization by Alexander the Great [§141]), "enormous Albatia (§89), the Phanesii with the huge ears (§880, the twin Eones islands (§35-36, described in §39), and the Hippopodes (§37).

The places described here are in the northeast, where the writer of EMM in effect tells the mapmaker to begin production. Here a walled-up population awaits the call of the Antichrist, islanders live off of bird eggs, and a race of people use their gargantuan ears like overcoats. All this may confirm the opinion of some readers of medieval geographies and maps that they are expressions of superstition, naïveté, and gullibility. One century ago, the prominent English historian C. Raymond Beazley disdained to include a discussion of the *Hereford Map* into his nearly 2,000-page *Dawn of Modern Geography*, calling it a “monstrosity of complete futility.”¹⁸ **Chart 3** and its corresponding Map section display what was for him a basis for that conclusion. But the data assembled on **Chart 2** suggest that the *Hereford Map*—and an analogue like EMM—are much more sophisticated.

They are so for at least three reasons. In order to appreciate the fuller picture of the relationship between EMM and the *Hereford Map*, one may wish to take a brief look at their discrepancies. As has already been noted, at least 80% of the manuscript text re-appears essentially verbatim on the Map, whereas only about 40% of the Map’s content derives from the EMM. A considerable portion of this difference would most probably be made up if we had access to the original version of EMM, which almost certainly included another 200 entries for place-names in western Europe and the Mediterranean.¹⁹ EMM and the *Hereford Map* correspond most consistently along seacoasts: except in Europe (where rivers and adjacent cities are exactly described), internal land areas are largely missing from EMM, which includes no mention of a region, city, mountain, or river essentially between the Indus and the Jordan. Africa south of the Mediterranean coast is unknown as well. On the *Hereford Map*, these areas are home to a variety of animals and humans. Quite a few of these are peculiar in shape or behavior (like the huge-eared *Phanesii* and the ruthless kin of Cain noted in Chart 3), and they are often located near the edges of the terrestrial landmass. This is as true of Europe as of other regions: Sweden is evidently inhabited by monkey-people (it is labeled “*Simea*” and its population is represented by a gorilla-like creature seated on the ground). Rather than ascribe this to subconscious marginalization of strange people—the psychological spin some scholars have put on this spatial display—or to “medieval ignorance,” we may do better to look for an explanation in science.²⁰

According to medieval zonal theory, the spherical earth was divided into three uninhabitable and two mutually inaccessible but habitable “bands” of territory; this promoted a medical understanding of elemental and bodily “humors” that led to a kind of meteorological determinism. As one approached the edges of the earth’s landmass and encountered increasing cold and aridity or heat and moisture, one inevitably came across people who looked or behaved in extreme ways. The idea is discussed especially in geographies written during the 1200s, such as Thomas of Cantimpré’s *Liber de natura rerum* (1237/1240). A growing interest in the effect of climate on human and animal populations during the thirteenth century may explain some gaps in EMM, which was probably written during the previous century.²¹

Comparing EMM to the *Hereford Map*—this time noting striking parallels—may alert us to a second kind of sophistication. What quite irritated Beazley and other historians of cartography about *mappaemundi* was their general lack of scale: space is not apportioned on the vellum surface in a fashion relatively consistent with space in the “real” world. This is most apparent in the delineation of coastlines, made even more problematic to the modern eye by placing the known landmass into a circular rather than a rectangular frame. (It is also evident in other ways: the Holy Land is half the size of all of Europe, perhaps a reflection of its historical importance to the Christian West, and thus its amplitude is moral rather than geographical.) **Chart 4** (and the related **Figure 1**), however, call attention to a remarkable degree of accuracy in the relationship of toponyms—for cities, rivers, and mountains—both in EMM and in *Hereford Map* legends. On the Asia Minor littoral, for example, one passage in EMM links 39 place-names in a running series, 23 of which are found in **Chart 4** (and visible, in almost exactly parallel order, on **Figure 1**).²² Moreover, the parallel is “correct,” reflecting the actual locations of these places in modern

Turkey. This same accurate parallelism in strings of toponyms can be found along the coasts of Greece, Italy, and north Africa, as well as on the banks of most of the 89 rivers in Europe on the Hereford Map.

The third kind of sophistication requires a better understanding of the history of EMM as a text. In the introduction to his edition of it, Gautier Dalché convincingly argues that although the two known manuscripts were copied in Germany during the mid-15th century—and thus EMM as we have it today post-dates the production of the *Hereford Map* by some 150 years—the work itself was most likely composed in England, probably Yorkshire, in the later 12th century, very likely based on an earlier prototype but much improved by the author's personal experience and knowledge. That author was probably in the entourage of Richard I (Lionheart) on the Third Crusade (1188-1192), and he may have been Roger of Howden, the Yorkshire cleric and counselor who chronicled this event. Roger was, in any event, almost certainly responsible for the two other treatises bound together with EMM in both manuscripts, *De viis maris* and *Liber nautarum*, works of practical navigation from the late-12th century that were used in connection with sea charts. This is a stunning discovery because in this Gautier Dalché demonstrates the falseness of the opposition traditionally thought to have existed between the makers of *mappaemundi* and navigational charts, an opposition usually cast as a stark division between naïve monks applying a Christian overlay to an outdated Greco-Roman model and savvy traders (merchants and/or pilots) laying the groundwork for “modern” cartography in innovative marine maps. The two different cartographical styles interested, and in some cases at least were evidently being produced by, the same individuals; in both cases, this occurred in a highly methodical way. Thus the only thing really monstrous about the *Hereford Map*, perhaps, is the way it and its making have been misunderstood and expected to conform to modern taste.

1 Citations from and references to the *Hereford Map* come from the study by Scott D. Westrem, *The Hereford Map. A Transcription and Translation of the Legends with Commentary*, History of the Representation of Space in Text and Image 1 (Turnhout: Brepols, 2001). Map legends (identified by the symbol §) are discussed individually in connection with related designs. The Map's precise length (measuring along the animal's spine) is 1,587 millimeters; its width varies, being 1,292 millimeters at the base of the triangular head (near the top); 1,325 millimeters across the middle (in effect the depicted earth's diameter); and 1,335 millimeters across the bottom. It thus has a length of 5 feet 2 3/8 inches and ranges from around 4 feet 2 5/8 inches to 4 feet 4 inches across, with a “diameter” of 4 feet 3 11/16 inches. The skin was trimmed on all sides, with the loss of some painted surface at the left extreme; around 50 millimeters (2 inches) of vellum has probably been cut away (Westrem, p. xv, n. 1). On biblical evidence for Jerusalem's centrality in the earth's landmass, see Psalms 73 [74]: 12 and Ezekiel 5:5.

2. The most significant of these specific analyses links the horseman to Thomas of Cantilupe, bishop of Hereford (1275-1282), and his successful lawsuit regarding hunting rights against Earl Gilbert of Gloucester in 1277-1278; see Valerie I. J. Flint, “*The Hereford Map: Its Author(s), Two Scenes and a Border*,” *Transactions of the Royal Historical Society*, 6th ser. 8 (1998), p.19-44. On other studies, see P. D. A. Harvey, *Mappa Mundi: The Hereford World Map* (Toronto: University of Toronto Press, 1996) and Westrem, *The Hereford Map*, p. xxi-xxv and nn. 18-28, as well as the commentary to §6-15 and the bibliography for secondary sources (p. lii-lvii).

3. Some scholarly studies treat as “conventional” a map of the world placed in the context of a scene with Jesus Christ. In fact, such a juxtaposition is known from only five *mappaemundi*: the Hereford Map, the *Ebstorf Map* (see n. 4, below), the Psalter Map (London, British Library, MS Additional 28681, fol. 9r), the very fragmentary Duchy of Cornwall Map. (London, Duchy of Cornwall Office), and the *Lambeth Map* (London, Lambeth Palace Library, MS 371, fol. 9v). All four date from between approximately 1240 and 1300. The only published notice of the *Lambeth Map* is in Westrem's essay “Geography and Travel,” *A Companion to Chaucer*. Ed. Peter Brown (Oxford: Blackwell Publishers, 2000), p. 195-217 (at p. 206-09 and Fig. 12.1). Other exemplars combining theological design and geography may of course be lost.

4. For bibliographical information on these and other (including lost) cartographical exemplars, see Westrem, *The Hereford Map*, p. xv-xvii and nn. 3-7.
5. On Flint's article, see n. 2, above. Barber and Harvey's edited volume of essays based on lectures delivered at Hereford Cathedral (27 June-1 July 1999), *The Hereford Mappa Mundi: Proceedings of the Mappa Mundi Conference, 1999*, is forthcoming from the British Library. On the Map's origins, its frame, and usage, see Westrem, *The Hereford Map*, p. xix-xxv and nn. 12-30. The conservator Christopher Clarkson drew my attention to the gouge in the Map's former frame.
6. My work on the Map has been much advanced by the great generosity of the Dean and Chapter of Hereford and the *Hereford Mappa Mundi* Trust; Canon John Tiller, Chancellor and Master of the Library; Joan Williams, Librarian; and (especially) Dominic Harbour, Education and Marketing Manager (formerly Curator or Keeper) at the Cathedral. I am grateful for the Dean and Chapter's permission to reprint here images of the Map made from transparencies produced in January 2001 by Gordon W. Taylor, MBE, LRPS, FIBMS.
7. Some details about the vellum come from a presentation (for Cathedral staff) on 10 January 2001 by Wim Visscher of William Cowley Parchment Works in England. The Map was intricately mounted to a wooden frame in 1948, and it has since been impossible to ascertain whether the Map's thickness at the edges is constant and if there is any text or design on the reverse (hair) side. Parkes and Morgan presented a "technical survey" of the Map at the *Hereford Mappa Mundi* Conference, and their findings (based on dated manuscripts and datable imagery from 1290s) are being published in the proceedings volume by Barber and Harvey (see n. 5, above). See also Westrem, *The Hereford Map*, p. xviii-xix and n. 10.
8. Scott D. Westrem is writing an article on the usage of a figure with concentric circles to represent a sphere before the landmark publication in 1435 of Leone Battista Alberti's *De pictura*, in which the technique of perspectival design was linked to a theory advocating painting as an imitation of reality (Filippo Brunelleschi had employed this technique in executing architectural views of Florence on two panels around 1420. A *locus classicus* in design terms for the medieval point of view is in Isidore of Seville's *Etymologies*, in a summary coverage of geometrical figures, the text of which is written in such a way as to require a diagrammatic representation (III.xii); many surviving manuscripts (which total in the hundreds) show an exact correspondence between the sketch of a sphere here (two concentric circles) and the outline of the world in a *mappamundi* often drawn near the beginning of Isidore's discussion of geography (XIV.ii).
9. Flint, "The Hereford Map," p. 23 (see n. 2, above).
10. For bibliographical information for editions and translations of the source texts, see Westrem, *The Hereford Map*, p. xxviii-xxxvii and nn. 43-59.
11. More detailed analysis of these data can be found in my "Lessons from Legends on the *Hereford Mappa Mundi*," *Hereford Mappa Mundi* Conference proceedings volume being edited by Barber and Harvey (see n. 5, above). Treating islands separately from the earth's three "parts" follows the organizational style adopted by Isidore of Seville, Honorius Augustodunensis, and other medieval geographical authorities.
12. For example, in the Garden of Eden, at the top of the earth's circle, the Four Rivers of Paradise are identified as they are named in Genesis 2:11-14. These four legends (§66-69) are included among the 23 that relate principally to "Concepts/Ideas/Names Associated with Biblical/Christian History" in Asia; they are numbered among the seven secondary references to "Names of Rivers" in Asia. Similarly three legends in Asia that identify regions visited or conquered by Alexander the Great (§62, 86, 115) are counted among the six "Concepts/Ideas/Names Associated with 'Secular' History" in Asia and, secondarily, among the six "Names of Land Areas."
13. On the origins of *mappaemundi*, see G. R. Crone, *The World Map by Richard of Haldingham in Hereford Cathedral, circa a.d. 1285*. Reproductions of Early Manuscript Maps 3 (London: Royal

Geographical Society, 1954), p. 16-17. On navigational charts and *portolani* dating to the later 1100s (one century earlier than has been generally thought), see Patrick Gautier Dalché. *Carte marine et portulan au XIIe siècle: Le Liber de existencia riveriarum et forma maris nostri Mediterranei. Pise, circa 1200*. Collection de l'École française de Rome 203 (Rome: École française de Rome, 1995).

14. “Décrire le monde et situer les lieux au XIIe siècle: L’Expositio mappe mundi et la généalogie de la mappemonde de Hereford.” *Mélanges de l’École française de Rome. Antiquité-Moyen Âge* 112[1]. Rome: École française de Rome, [forthcoming]. The two known copies are Paris, Bibliothèque Nationale de France, MS lat. 3123 (fols. 126r-131v); and Valenciennes, Bibliothèque Municipale, MS 344 (fols. 52va-56va); both have a German provenance. I am most grateful to M. Gautier Dalché (Centre National de la Recherche Scientifique and École Pratique des Hautes Études [IVe Section], Paris) for permitting me to use his scrupulous edition of EMM, with a learned introduction, here and in my book.

15. Missing from EMM are Iberia, Britain, and islands in the Mediterranean and Black Seas, where 214 legends are found on the Hereford Map. That these areas were included in the original is strongly suggested by the occasional location of one place “opposite” a city or island in these missing territories.

16. Danubius oritur ab orientali parte Reni fluminis sub quadam ecclesia, et progressus ad orientem, . . . colligens hinc et inde flumina lx cum quibus se in Ponticum sinum vii ostiis precipitat. Quorum xii tantum in mappa ponimus”; Gautier Dalché, “Décrire le monde” (III.137).

17. So closely do the texts correspond that a phrase missing in EMM (I.21) owing to an eye-slip, or homoeoteleutou, can be restored based on the Map’s legend (§141), and a lexical absurdity on the Map (§39) can be corrected using the text of EMM (I.44). More details are found in these passages in Gautier Dalché, “Décrire le monde”; and Westrem, *The Hereford Map*.

18. According to Beazley, in his comprehensive work, “a bare allusion to the monstrosities of *Hereford* and *Ebstorf* should suffice”; *The Dawn of Modern Geography* (3 vols. London, 1897-1906; rpt. New York: Peter Smith, 1949), p. 3:528. In a similar vein the Map’s earliest serious students, the Anglican clerics W. L. Bevan and H. W. Phillott, wrote that it shows a “rejection of all that savoured of scientific geography, . . . servile adherence to antiquated geographical treatises, . . . anachronism, . . . and the sore lack of all critical and even grammatical accuracy”; *Mediaeval Geography. An Essay in Illustration of the Hereford Mappa Mundi* (London and Hereford, 1873; rpt. Amsterdam: Meridian, 1969), p. 1-2.

19. See n. 15, above.

20. Other explanations for the presence of certain regions and peoples on a Map made in the late 1200s where no such detail is found in a text probably written in the late 1100s include Mongol incursions in central Europe during the mid-thirteenth century, vastly expanded trade (with Europeans dealing directly with east Asians, rather than being forced to operate through Arab intermediaries), a revival and re-direction of evangelistic interest, and the move to compile “scientific” encyclopedias (with the summa as an intellectual goal). Almost nowhere does a Map legend take a moral point of view about human peculiarity; one goes to some length to offer a sensible explanation—known from no other source, including EMM—for the Essedonian habit of eating one’s parents after they die (§212).

21. Zonal theory was first articulated by the Greeks probably by the 5th century B.C. (most likely by Parmenides [fl. 480 B.C.]); Macrobius discussed the issue in his famous Latin Commentary on the Dream of Scipio (c. A.D. 400), a text that was often attended during the Middle Ages by diagrammatic “maps” illustrating the concept. See also David Woodward. “Medieval Mappaemundi.” *Cartography in Prehistoric, Ancient, and Medieval Europe and the Mediterranean*. Ed. J. B. Harley and David Woodward, vol. 1 of *The History of Cartography* (Chicago: University of Chicago Press, 1987), p. 300. On Thomas of Cantimpré, see *Liber de natura rerum*. Ed. Helmut Boese, (Berlin: de Gruyter, 1973) p. 5, 102-74 (Prol. and Book 4 [“De animalibus quadrupedibus”]).

22. Gautier Dalché, “Décrire le monde,” I.90-128. The passage begins “In Asya minori maritime ciuitates: contra Patmos Eraclea.” A new coastline section (in modern Syria and Lebanon) begins after “Laodicia” with the words “Inde usque ad montem Libanum hee maritime ciuitates” (I.129).

23. The “standard” Latin forms of these place-names and the modern English equivalents are those recorded in the *Barrington Atlas of the Greek and Roman World*, ed. Richard J. A. Talbert (Princeton: Princeton University Press, 2000), which I employ throughout my book, but with the caution that in dealing with the manuscript culture of medieval Europe, it is misleading and anachronistic to speak of “standard” or “correct” spellings, especially of geographical words.

Society for the History of Discoveries

by Peter Barber (Deputy Map Librarian at the British Library)

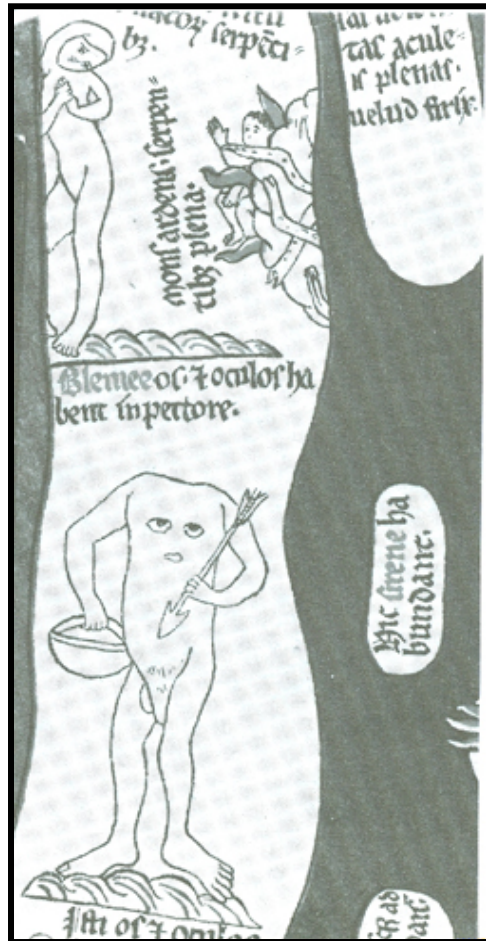
From the time when it was first mentioned as being in Hereford Cathedral in 1682, until a relatively short time ago, the *Hereford Mappamundi* was almost entirely the preserve of antiquaries, clergymen with an interest in the middle ages and some historians of cartography. Much of their published work, particularly the detailed studies of the map and its more obvious sources by Bevan and Phillott published in 1873 and by Konrad Miller some twenty years later, together with the facsimiles that were produced from the 1860s, has proved to be of lasting value. Nevertheless, it placed a somewhat misleading emphasis on the map's geographical 'inaccuracies', its depiction of fabulous creatures and supposedly religious purpose, all clothed in what for the layman must have seemed an air of wildly esoteric learning and near-impenetrable medieval mystery. Casual visitors to the dark aisle where it hung could see only a dark, dirty image which they were encouraged to view in a pious, but also rather condescending manner.



Detail from the Hereford map of England and Wales. Note Lincoln on its hill and Snowdon ('Snawdon'), Caernarvon and Conway in Wales, referring to the castles Edward I was building there when the map was being created. (By courtesy of the British Library).

In the last thirty years this has gradually changed. In England, a detailed study of its less obvious features, such as the sequences of its place names and some of its coastal outlines by G. R. Crone of the Royal Geographical Society, revealed that despite the antiquity of many of the map's sources much was almost contemporary with the map's creation and was secular. Others delved into the question of its authorship, which had previously been assumed to be obvious from the wording on the map itself. Its images and decoration have been examined from a stylistic standpoint by Nigel Morgan and put into the context of their time, while the late Wilma George examined the animals in the light of her own zoological knowledge.^[2] The chance discoveries of fragments of other English medieval world maps in recent years ^[3] have expanded the

context within which the *Hereford World Map* can be examined, and the Royal Academy exhibition, 'The Age of Chivalry' of 1987 enabled the map to be displayed in the company of other non-cartographic artifacts of its own time.



Details from the Hereford map of the Blemyae and the Psilli.

Typical of the strange creatures or 'Wonders of the East' derived by Richard of Haldingham from classical sources and placed in Ethiopia. The Psilli reputedly tested the virtue of their wives by exposing their children to serpents. Recent research suggests this is a reference to African traders in medicinal drugs who visited ancient Rome. (By courtesy of the British Library).

Equally important work was also being done on medieval and Renaissance world maps as a genre, particularly by medievalists such as Anna-Dorothee von den Brincken and Jorg-Geerd Arentzen in Germany and by Juergen Schulz, primarily an art historian, and David Woodward a leading historian of cartography in the United States. The cumulative effect has been to enable us at last to evaluate the map in terms of its actual (largely non-geographical and not exclusively religious) purpose, the age in which it was created and in the context of the general development of European cartography.

Medieval World Maps

The *Hereford World Map* is the only complete surviving English example of a type of map which was primarily a visualization of all branches of knowledge in a Christian framework and only secondly a geographical object. It can best be understood in the context of the tradition to which it belonged.

After the fall of the Roman Empire in the fifth century, monks and scholars struggled desperately to preserve from destruction by pagan barbarians the flotsam and jetsam of classical history and learning; to consolidate them and to reconcile them with Christian teaching and biblical history. The Old and New Testaments contained few doctrinal implications for geography, other than a bias in favor of an inhabited world consisting of three interlinked continents containing descendants of Noah's three sons. In the eyes of some (but by no means all) theologians, a fourth inhabited continent, the *Antipodes*, would implicitly have denied the descent of mankind from Noah, and the depiction of such a continent was deemed to be heretical by them. Most medieval mapmakers seem to have accepted this constraint, but world maps showing four continents are not uncommon: notably the world maps created by Beatus of Liebana in the late eighth century to illustrate his *Commentary on the Apocalypse of St. John* (#207). Generally, though, it was not difficult to adapt surviving copies of existing, secular world maps to suit the purposes of Christian writers from the fifth century onwards.

There would have been several models to choose from, corresponding to the widely differing cartographic traditions inside the Roman Empire, but it seems that the commonest image descended from a large map of the known world that was created for a portico lining the Via Flaminia near the Capitol in Rome during Christ's lifetime. This now-lost map was referred to in some detail by a number of classical writers and it seems to have been created under the direction of Emperor Augustus's son-in-law, Vipsanius Agrippa (63-12 BC) for official purposes (#118). It was based on survey and on military itineraries and reflected the political and administrative realities of the time. It may have incorporated information from an earlier survey commissioned by Julius Caesar and, to judge from some early references, it may originally have shown four continents. The medievalized depiction on the bottom left corner of the *Hereford* world map of *Caesar Augustus* commissioning a survey of the world from three surveyors representing the three corners of the world may be based on a muddled - and religiously acceptable - memory of these classical events.

Recent writers such as Arentzen have suggested that, simply because of their sheer availability, from an early date different versions of this map may have been used to illustrate texts by scholars such as St. Augustine of Hippo's student, Orosius (fl.410) and by Isidore of Seville (c. 560-636) (#205), about the nature, peoples and wild life of the world. These texts owed much to classical writers, particularly Pliny the Elder (23-79), who himself derived much of his information from still earlier writers such as the fifth century B.C. Greek historian Herodotus (#109).

Eventually some of the information from the texts became incorporated into the maps themselves, though only sparingly at first. As the centuries went by, more and more was included with references to places associated with events in classical history and legend (particularly fictionalized tales about Alexander the Great) and from biblical history with brief notes on and the very occasional illustration of natural history. Where space allowed, reference was also made to important contemporary towns, regions, and geographical features such as freshly-opened mountain passes. As befitted the

encyclopedic texts that they illustrated, the maps became visual encyclopedias of human and divine knowledge and not mere geographical maps. Even though the inscriptions on the maps gradually became more and more garbled and the information more and more embellished, distorted, and misunderstood, they nevertheless retained their tenuous links with ancient learning.

A broad similarity in coastlines with the *Hereford* map is clear in the *Anglo-Saxon [Cottonian] World Map*, c.1000 (#210), but there are no illustrations of animals other than the lion (top left). Note also the Roman provincial boundaries, the relative accuracy of the British coastlines (lower left) and the attention paid to the Balkans and Denmark, with which Saxon England had close contacts. (*B.L. Cotton MS Tiberius B. v Pt. 1, f.56v*).

The resulting maps ranged widely in shape and appearance, some being circular, others square. Some, often oriented to the north, attempted to show the whole world in zones, with the inhabited earth occupying the zone between the equator and the frozen north. Most of the maps, however, like the *Hereford Mappamundi*, depicted only that part of the world that was known in classical times to be inhabited and they were oriented with east at the top. Many were purely schematic and symbolic, showing a T, representing the Mediterranean, the Don and the Nile, surrounded by an O, for the great ocean encircling the world, sometimes with a fourth continent being added. More than simple geographical shorthand, such maps were also meant to symbolize the crucifixion, the descent of man from Noah's three sons and the ultimate triumph of Christianity.

A few maps of the inhabited world were much more detailed, though keeping to the same broad structure and symbolism. Paradise was shown at the very top, or extreme east of the map. Traces of the maps' classical origins could regularly be seen in, for instance, the continued depiction of the provincial boundaries of the Roman Empire (which are partly visible on the *Hereford* map) and for many centuries by the island of Delos which had been sacred to the early Greeks being the centre of the inhabited world. It was only from about 1120 that Jerusalem took Oclous' place as the focal point of the map, as it does on the *Hereford Mappamundi*. Palestine itself was usually enlarged far beyond what, on a modern map, would have been its actual proportions. This was in order to match its historical importance and to accommodate all the information that had to be conveyed. The amount of space dedicated to the other parts of the world varied according to their traditional historical or biblical importance and the preoccupations of the author of the text that the map illustrated. Because of this, space devoted to the author or patron's homeland was often much exaggerated when judged by modern standards, as in the case of England, Wales and Ireland on the *Hereford Mappa Mundi*.

Most of these earlier maps were book illustrations, none were particularly big and the maps were always considered to need textual amplification. They were never intended to convey purely geographical information or to stand alone without explanatory text. They and the texts that they adorned continued to be copied by hand until late in the 15th century and are to be found in early printed books.

The *Psalter World Map*, c.1260 (#223). Probably a copy of the map prepared for Henry III's audience chamber at Westminster. God dominates the world and the "Marvels of the East" occupy the lower right edge of the map, as they do on the *Hereford* map. The coastlines and geography show considerable differences in detail, however. (*B.L. Add. MS 28681, f.9*).

Wall maps

From about 1100, however, we know from contemporary descriptions in chronicles and from the few surviving inventories that larger world maps were produced on parchment, cloth and as wall paintings for the adornment of audience chambers in palaces and castles as well as, probably, of altars in the side chapels of religious buildings. Often a 'context' for them would have been provided by the other secular as well as religious surrounding decorations. Together they would have provided a propaganda backdrop for the public appearances of the ruler, ruling body, noble or cleric who had commissioned them, and some may have been able to stand alone as visual histories.

A separate written text of an encyclopedic nature, probably written by the map's intellectual creator, however, was still intended to accompany many if not all these large maps and one may originally have accompanied the *Hereford* world map. For many maps continued to be used primarily for educational, including theological, purposes. The *Hereford* map, as an inscription at the lower left corner tells us, was certainly intended for use as a visual encyclopedia, to be 'heard, read and seen' by onlookers. These large maps did have further uses. A note on one of the most famous of them, the *Ebstorf*, says that it could be used for route planning. As G. R. Crone demonstrated, the *Hereford* also contains sequences of the more important place names along some major 13th century commercial and pilgrimage routes. On a world map, though, as opposed to the strip itinerary maps produced by Matthew Paris in about 1250 (#225), the route planning could only have been very approximate and very much incidental to the main purposes.

These maps seem largely to have been inspired by English scholars working at home or in Europe. They reached their fullest development in the 13th century when Englishmen like Roger Bacon, John of Holywood (Sacrobosco), Robert Grosseteste and Matthew Paris were playing an inordinately large part in creative geographical thinking in Europe. Because of the maps' size, they were able to include far more information and illustration than their predecessors. They retained and expanded the geographical and historical elements of the older maps - coastlines, layout and place names on the maps frequently reveal their ancestry - but to them they added several novel features. There was an enhanced Christian emphasis through the decoration. Christ would, for instance, be shown dominating the world, or the world might even be depicted as the actual body of Christ. In addition, there seems regularly to have been a garbled reference in word and/or picture to the survey of the world supposedly undertaken at the behest of Julius or Augustus Caesar.

The most striking novelty, however, was the vastly increased number of depictions of peoples, animals, and plants of the world copied from illustrations in contemporary handbooks on wildlife, commonly called bestiaries and herbals. In most, if not all of these maps, the strange peoples or 'Marvels of the East' are shown occupying Ethiopia on the right (southern) edge, as on the *Hereford* map. More space was also found for current political references and information derived from contemporary military, religious and commercial itineraries. Inscriptions of varying lengths amplified the pictures and sometimes contained references to their sources. Although the maps were still dominated by biblical and classical history and legend, most other information seems to have been acceptable and was accommodated within the traditional framework.

Mentions in contemporary records and chronicles, such as those of Matthew Paris, make it plain that these large world maps were once relatively common. Exposure to light, fire, water, and religious bigotry or indifference over the centuries has, however, led to the destruction of most of them. Today, the earliest survivor, dating from the beginning of the 13th century, is a badly damaged example now in Vercelli Cathedral, probably having been brought to Italy in about 1219 by a papal legate returning from England (#220.3). Much better preserved, until its destruction in 1943, was the famous *Ebstorf* world map of about 1235 (#224). Far larger than the *Hereford Word Map* and much more colorful, it was probably created under the guidance of the itinerant English lawyer, teacher and diplomat, Gervase of Tilbury. The world was shown as the body of Christ and much space was devoted to the political situation in northern Germany: an area of particular concern to the Duke who may have commissioned it.

At about the same time that this map was being created, Henry III, perhaps after consultation with Gervase, who had visited him in 1229, commissioned wall maps to hang in the audience chambers of his palaces in Winchester and Westminster. Both are now lost but it seems quite likely that the so-called *Psalter Map* (#223), produced in London in the early 1260s and now owned by the British Library, is a much reduced copy of the map that hung in Westminster Palace. We know from Matthew Paris that the Westminster map was copied by others, and it is likely to have had a lasting influence even though the original was destroyed in 1265. It is difficult to account otherwise for the striking similarities in detailed arrangement and content between the *Psalter* world map, the recently discovered 'Duchy of Cornwall' fragment (probably commissioned in about 1285 by a cousin of Edward I for his foundation, Ashridge College in Hertfordshire) and the Aslake world map fragments of about 1360.

The Hereford Mappamundi

The *Hereford Mappamundi* is the only full size survivor of these magnificent, encyclopedic English-inspired maps. Despite some broad similarities in arrangement and content, however, there are very considerable differences from the *Ebstorf* and the 'Westminster Palace' maps in details - like the precise location of wildlife, the portrayal of some coastlines and islands, or in the recent information incorporated. A Latin legend in the bottom right corner of the *Hereford* map refers to the fifth century Christian propagandist Orosius as the main source for the map, but as we have already seen, it incorporates information from numerous ancient and thirteenth century sources and adds its own interpretations of them. In many of its details it particularly resembles the Anglo-Saxon World Map of about 1000 and the 12th century Henry of Mainz world map in Corpus Christi College, Cambridge. In transmission some facts and text became garbled and some inscriptions are gobbled gook or wrong. Africa is called Europe and vice versa.



The Hereford Mappa Mundi. God dominates the world, with the Last Judgment below. The map is an outstanding example of a map type that had evolved over the preceding eight centuries. This is a facsimile (with the background of the map 'cleaned up').

An inscription in Norman-French at the bottom left attributes the map to Richard of Haldingham and Sleaford. Although there was some controversy over the matter in the 1970s, it seems likely that this was Richard de Bello (c. 1235-c. 1325), a church administrator and prebendary of Haldingham and Sleaford (now Holdingham and

Lafford) in Lincolnshire from 1276 to 1283 who later served with the Bishop of Salisbury and as prebendary of Norton in Hereford Cathedral in 1305. The map was probably copied out and painted from its design by professional scribes and illuminators.

It seems likely that the map was created in Lincoln between about 1280 and 1289. Lincoln had a considerable intellectual reputation in the 13th century that Hereford could not match, and it is known from a surviving library list to have possessed at least one earlier world map. The depiction of Lincoln Cathedral on its hill on the *Hereford Mappa Mundi* must have been based on direct observation. Moreover, the map's topical and relatively accurate depiction of North Wales, where Edward I was then battling with Llywelyn ap Gruffydd, may have derived from the archive and sketches of the great chronicler, Gerald of Wales (c.1146-1223), who spent most of his last years in Lincoln.^[4] The map has probably been housed at Hereford since about 1290, and the sketchy depiction of Hereford itself may have been something of an afterthought. Until at least the beginning of the 19th century it was the centerpiece of a triptych with painted wings showing the annunciation. This frame was probably contemporary and suggests that within a few years of its creation, the map was being used as an altarpiece.

The map was primarily intended to show all of God's creation in its proper historical and geographical setting: a visual affirmation of traditional learning and faith. It is also an *estoire* locating events in human and divine history, from the fall (Adam and Eve at the top or East), to the 13th century - and beyond to the Last Judgment, shown above the map. The rider looking back at the world but being urged (in Norman-French) by his page to proceed (bottom right) is probably a reference to the passing of time and the transitory nature of earthly things. The accurate depiction of coastlines and geographical positions is subordinated to these purposes and to the space available. In particular the shape of the British Isles may have been distorted in order to fit into the circle and enlarged to contain all the information Richard wanted to give. As early as about 1000, scholars had a reasonably good idea of the proper form, as the Anglo-Saxon world map shows, while, as recently as 1969, Soviet cartographers, struggling to squeeze the eastern hemisphere into a circle were forced into distortions similar to those on the Hereford map!

The *Mappa Mundi* was primarily meant for public display, possibly in Richard's dwellings during his lifetime and after, perhaps, in a chantry chapel where people could pray for his soul and learn something of the nature and secular and divine history of the world, as they are requested to do in the authorship inscription. The use of Latin and Norman-French suggests that the audience was not intended to be the poor, but rather the well-educated, upper-class, Norman-French speaking elite versed in the Latin bible and classical works.



Blaeu's wall map of America (Jaillot, 1669 #482). A 17th century Dutch wall map. The coastlines and orientation have become more recognizable, but it remains almost as much of a visual encyclopedia as the Hereford world map. The depictions of the historic people and places and of the strange and not so strange peoples, however, have been pushed to the edges of the map, though some still survive in the seas and the less well-known areas of the continent.

Later World maps

The *Hereford* world map, or one like it, seems to have influenced the form of the larger map illustrating the encyclopedic *Polychronicon* written by the Chester monk Ranulf Higden (#232) that first appeared in the 1340s. Possibly for lack of space, however, the Higden maps, which usually occupy one opening in his book, do not show any wildlife. The *Polychronicon* was still being produced with its maps in the 1460s, but the pattern set by the *Hereford* and the other large world maps showed little development inside England after about 1360. On the continent it was a different story. By the 1330s, Iberian and Italian world maps were showing modern-looking Mediterranean coastlines derived from sea charts. Little more than a century later, places were being located according to the rediscovered co-ordinates of the classical geographer Claudius Ptolemy of Alexandria and his Renaissance successors, as is stated by the Venetian Fra Mauro on his large world map of 1459 (#249). Information drawn from the great discoveries was also being included.

Nevertheless, the ethnographical, botanical, zoological, biblical and historical illustrations and texts on large maps continued to be regarded as being at least as important as the purely geographical. They remained important well into the 17th century, as is shown by comments on the pleasure of looking at maps by contemporary

writers such as Robert Burton in his *Anatomy of Melancholy* (1621) and in the grand Dutch printed wall maps often depicted in the paintings of Vermeer. Even today the *Hereford Mappa Mundi* and other medieval wall maps have their modern counterparts in illustrated tourist maps and map postcards where non-geographic information continues to take precedence over cartographic accuracy.

1. N. J. Morgan, *Early Gothic Manuscripts 1250-1285. A Survey of Manuscripts illuminated in the British Isles*. IV. vol. 2 (London: 1987). pp. 195-200 contains a good discussion and full and up-to-date bibliography of writings about the *Hereford* world map. It should be consulted for further references to the authors mentioned below.
2. Wilma George. *Animals in Maps* (London: 1969). pp. 29-35, 125,204; *ibid*, 'The bestiary: a handbook of the local fauna'. *Archives of Natural History* (1981) 10 (2): 187-203 who. *inter alia*. has an illustration of a unicorn (or *Oryx beisu*) photographed by her in Ethiopia, demonstrating that many of the 'fantasy' creatures on the map were based on actual observation, freakish though it may have been and distorted though it became.
3. The most important of these recent discoveries, the *Duchy of Cornwall* fragment and the *Aslake* map fragments, are discussed in papers by Graham Haslam and Peter Barber in a volume on the transactions of the Twelfth International Conference on the History of Cartography, edited by Monique Pelletier and published in the autumn 1989.
4. Charles Knightly. *A Mirror of Medieval Wales. Gerald of Wales and His Journey of 1188* (Cardiff: 1988). A map of the British Isles illustrating his topography of Ireland is illustrated on page 16.