

The Nature of Things: Medieval Art and Ecology, 1100–1550

How does art affect the environment? How does the environment affect art? *The Nature of Things: Medieval Art and Ecology, 1100-1550* responds to these questions, unearthing the connections between people, artworks, and the natural world. Focusing on the vibrant materials used in the production of Western European art during the Middle Ages, the exhibition includes fifty sculptures, textiles, and books designed for sacred and secular spaces.

The “medieval” era (also known as the Middle Ages) refers to the thousand-year span between the decline of the Roman Empire in Western Europe (ca. 500 CE) and European contact with the Americas (ca. 1500 CE). *The Nature of Things* explores the second half of this era, a period of profound cultural and economic change that brought about unprecedented shifts in humanity's relationship to the environment. Medieval art and literature reveal much about how nature shaped people's lives but also how people altered their natural surroundings.

Forestry, farming, mining, and quarrying provided the basic building blocks of medieval life. These practices also supplied the raw ingredients for art: plants, animal products, stone, earth, and metal. Growing, gathering, and transforming these materials into artworks affected environments in medieval Europe, with repercussions further afield in Africa and Asia. Some of these consequences were temporary. Others had long-lasting effects that remain visible in the landscape today.

The artworks gathered here also help us see how peoples of the past understood and related to their surroundings through experiences that might be couched in personal observations or religious teachings. Some objects reflect the abundance or scarcity of resources or even represent human responses to crises like climate change and plague. Others reveal how nature influenced the production of artworks, determining their types, forms, materials, and where they were made.

Taking cues from ecology (the study of how living things relate to each other and their surroundings), *The Nature of Things* considers the environment not as a backdrop to culture but as a guiding force within it.

A note on artwork information:

Geopolitical boundaries frequently shifted in the medieval era. For clarity, contemporary country names are used here.

It was not a common practice for medieval artists to sign their work. Unless otherwise specified, the makers of the artworks in the exhibition are unknown.

This exhibition is organized by Heather Alexis Smith, Assistant Curator, Pulitzer Arts Foundation.



The Nature of Things: Medieval Art and Ecology, 1100–1550 is on view from Mar 10 – Aug 6, 2023.

Scan for digital exhibition guide.

The Nature of Things: Medieval Art and Ecology, 1100-1550

Forest

In the 1130s Abbot Suger had a problem: he needed to harvest twelve exceptionally tall trees.

The soaring timbers were required for his ambitious remodel of St. Denis, a monumental church just north of Paris. When Suger approached local woodsmen for help, he was told “nothing of the kind [can] be found in the entire region.” All the best trees had already been cut down. With divine assistance Suger eventually found the timbers he needed, but his story reveals the intense demands medieval societies placed on forests.

Trees were essential to medieval life. Firewood was a major fuel source, critical for survival and industry. Because it was abundant, durable, and easy to harvest, wood was also important for architecture and many artistic practices. Forests buzzed with activities like logging, mining, and grazing livestock. The demand for wood was so high that some forests were not able to regrow rapidly enough. As a result, medieval communities enacted sustainability measures to replenish natural resources or imported wood when demand exceeded supply.

Not only were trees and forests key to life, they were also imbued with meaning. Medieval authors compared trees with human bodies because both have trunks, limbs, sap (blood), and bark (skin), and could live, suffer, die, and rot. These associations, in combination with wood’s capacity to be carved into lifelike representations, lent wooden sculpture a unique presence and animation.

Medieval people also had a range of attitudes toward forests, which were reflected in art and popular literature. Sometimes the woods stirred unease because they were dark, mysterious, and home to fearsome beings. Yet, forests were also places of enjoyment, recreation, and profound personal or religious transformation.

20. French. *God and the Tree of Knowledge*,
ca. 1250. Stained glass and lead. Collection of
the Nasher Museum of Art at Duke University

This fragment of a stained glass window likely came from a cathedral in Troyes, France. Its imagery depicts a foundational Christian narrative. Christ stands in the Garden of Paradise, gesturing toward the Tree of Knowledge of Good and Evil. The right side of the panel, now lost, likely depicted the first man and woman, Adam and Eve. According to the Bible, God forbade Adam and Eve to eat the Tree’s fruit. After they succumbed to Satan’s pressure to disobey this order, God exiled them from the Garden, condemning them and their descendants to mortal lives of hardship and toil. The Tree of Knowledge embodies some of the complex meanings medieval Christian viewers might have brought to trees.

Stained glass was among the most important art forms of the Middle Ages. These windows illuminated dark church interiors and their imagery conveyed Biblical lessons. Medieval writers described the sun shining through in brilliant jewel tones as a manifestation of God. Made by melting sand, wood ash, and metals at high temperatures, stained glass was also energy-intensive. Scholars estimate that between 1250 and 1500 the medieval glass industry consumed more than twenty billion pounds of firewood.

21. English. *Panel*, 15th century. Oak. Philadelphia Museum of Art: Gift of Mr. and Mrs. Roland L. Taylor, 1940

22. English. *Tracery Head*, 15th century. Oak. Philadelphia Museum of Art: Purchased with funds contributed by Mr. and Mrs. Roland L. Taylor, 1929

- 23. English. Panel**, 15th century. Oak. Philadelphia Museum of Art: Gift of Mr. and Mrs. Roland L. Taylor, 1940
- 24. English. Boss**, late 15th–early 16th century. Oak. Philadelphia Museum of Art: Purchased with funds contributed by Mr. and Mrs. Roland L. Taylor, 1929
- 25. English. Boss**, 15th century. Oak. Philadelphia Museum of Art: Purchased with funds contributed by Mr. and Mrs. Roland L. Taylor, 1929
- 26. English. Boss**, 15th century. Oak. Philadelphia Museum of Art: Gift of Mr. and Mrs. Roland L. Taylor, 1940
- 27. English. Panel with Coat of Arms**, early 16th century. Oak. Philadelphia Museum of Art: Gift of Mr. and Mrs. Roland L. Taylor, 1940
- 28. English. Panel**, 15th–16th century. Oak. Philadelphia Museum of Art: Purchased with funds contributed by Mr. and Mrs. Roland L. Taylor, 1929

Wood was the most common medieval building material. It was used for structural elements like beams, walls, flooring, and roofing, and for interior adornment. The oak carvings lining the walls of this gallery (#21-28, #31-32) once decorated the walls, ceilings, and furniture of churches and homes. Teeming with flowers, foliage, and animals—real and imagined—these reliefs demonstrate the rich inspiration that artists and patrons found in the natural world. Their lively, naturalistic designs are a hallmark of the Gothic, a medieval artistic and architectural style common throughout Western Europe from the twelfth to sixteenth centuries.

Deforestation affected densely populated places like England, where these fragments were carved. To meet construction demands, Western European communities imported large quantities of wood from forests in present-day Poland, Lithuania, Latvia, and Estonia. While these carvings could have been sculpted from native-grown English trees, the buildings that they decorated most likely incorporated at least some timbers harvested thousands of miles away.

- 29. France. Book of Hours**, ca. 1530. Vellum with tempera and gold leaf. Courtesy George N. Meissner Collection, Washington University Libraries

This page depicts St. Francis of Assisi (ca. 1181–1226), who believed that the natural world embodied the divine. He cautioned against deforestation, preached to birds, and penned the *Canticle of the Sun*, a song praising God for creating all the elements of the environment. Francis is known today as the patron saint of ecology.

Francis frequently retreated to the wilderness, where he felt a profound connection to God. This painting depicts a miraculous vision he experienced during one such retreat: an angel appeared while he was praying and graced him with stigmata, or the five wounds of Christ.

- 30. Germany, Unknown Tyrolean Master. The Vision of St. Eustace**, ca. 1500. Oil on panel. Fine Arts Museums of San Francisco, Gift of Julius Landauer. 70.16

According to Christian lore, St. Eustace was a Roman general who lived in the second century. While hunting in the woods, he separated from his soldiers to track a large stag. When Eustace caught the animal, a crucifix appeared between its antlers and the voice of God commanded him to convert to Christianity. Paintings depicting pivotal events in the lives of saints provided endless inspiration for medieval artists and audiences, guiding private prayer and encouraging piety. Wood was a common surface for these kinds of paintings because it was durable, portable, and relatively inexpensive.

- 31. English. Boss**, 15th century. Oak. Philadelphia Museum of Art: Purchased with funds contributed by Mr. and Mrs. Roland L. Taylor, 1929
- 32. English. Frieze**, 15th century. Oak. Philadelphia Museum of Art: Purchased with funds contributed by Mr. and Mrs. Roland L. Taylor, 1929
- 33. Flanders or France. Crucified Christ**, ca. 1500. Wood with traces of gesso and polychromy. Detroit Institute of Arts, Gift of Robert H. Tannahill, 37.146

This fragment was once part of a large-scale wooden sculpture that depicted Christ's death on the Cross. His downturned face, lidded eyes, and parted lips were designed to elicit an emotional response from the viewer.

Large sculptures depicting human figures, like this one, were typically carved from the trunk of a tree. Body parts that extended beyond the tree's profile, like Christ's outstretched arms and extended legs (now lost), were carved separately. The natural properties of wood influenced how artists worked the material. Oak, used here, was appreciated for its abundance and sturdiness. It can have a coarse texture, however, which is visible in Christ's rough-hewn hair and facial features. Like most medieval sculpture, this object was originally painted in vivid color, traces of which remain on the beard and neck.

- 34. French, Picardie School. Virgin of the Annunciation**, 1275–1300. Oak. The Art Institute of Chicago, Ada Turnbull Hertle Endowment, 1967.139

- 35. German. Saint Anthony**, ca. 1500. Limewood. Philadelphia Museum of Art: John G. Johnson Collection, 1917

St. Anthony was an early Christian monk who lived as a hermit in the Egyptian wilderness around the fourth century. He believed that the remote desert landscape, free from society's pleasures, would bring him closer to God. According to accounts of Anthony's life, Satan tested his faith by making beasts and demons attack him. Anthony overcame these perils of the wilderness through prayer. Some medieval stories describe him as a herder and protector of swine, explaining the small pig at his feet.

This lindenwood sculpture was likely displayed against the wall of a church, concealing its hollow back. A tree's core holds more moisture and dries at a different rate than its outer layers. By removing the wooden core, the artist made the sculpture lighter and more resistant to cracking. Lindenwood (also called "limewood") was a preferred carving material in late medieval southern Germany, the linden tree's native environment. Since it is soft and has an extremely fine grain, it can be carved with delicate details as seen in the sinuous curls of the saint's beard. Lindenwood was also believed to have medicinal properties, which might have underscored the sculpture's spiritual meaning.

The Nature of Things: Medieval Art and Ecology, 1100-1550

Field

Animals and plants were key sources for medieval artmaking materials.

Animals provided skin for parchment, hair for cloth, and bone for sculpture. Plant fibers were the primary ingredient in paper, and their flowers, leaves, and roots were used for dyes and paints. Some of these materials were gathered from the wild. Others were farmed, requiring dedicated land and labor.

One of the most important medieval industries was sheep farming. Sheep wool was essential to the European cloth market. It was likewise a prized commodity in trade with societies in West and North Africa, including Egypt. Sheepskin was also indispensable for parchment, the main medieval writing surface. These animals needed large pastures, which could cause competition for natural resources. Sheep tended to overgraze, leading to erosion, biodiversity loss, and the reduction of land for food crops. Around 1550 one commentator noted, “The increase of pasture for sheep has decreased the tillage of grain so much that until it is restored the common wealth will grow poor... It is better to [lack] wool than grain.”

Technologies like silk production and papermaking created new demands on the land. Originally invented in China and introduced to Europe through centuries of contact with traders and artists in Central Asia, West Asia, and North Africa, these burgeoning industries were successfully adapted to Europe's unique ecosystems.

36. Germany. Covered chess box with dancers and hunting scenes, mid-15th century and later. Bone. Fine Arts Museums of San Francisco, Gift of Ruth L. Koch from the Alfred B. Koch Jr. Collection. 1979.50.5a-b

37. Venice, Italy. Workshop of Baldassare degli Embriachi. Casket, ca. 1400. Carved bone, stained horn, wood, pigment, gilt metal. Los Angeles County Museum of Art, Purchased with funds provided by the William Randolph Hearst Foundation

38. France, attributed to the Atelier of the Boxes (ca. 1340-1360). Plaque with Courtship Scene, 1340-1360. Ivory. Toledo Museum of Art, Purchased with funds from the Libbey Endowment, Gift of Edward Drummond Libbey, 1957.20

39. Germany. Pendant with Virgin and Saints, 15th century. Mother of pearl, gilt copper, silk, glass. Detroit Institute of Arts. Bequest of Robert H. Tannahill, 70.457

A man plucks a rose for his love. Hunters chase prey through the woods. Saints encircle the Virgin Mary against a floral backdrop. Christ kneels in a garden, deep in prayer. These images adorn the delicate surfaces of #36-39, small-scale luxury objects carved from ivory, bone, and shell. Soft enough to be carved in intricate detail, these animal byproducts were fashioned into jewelry and applied to boxes and chests.

Ivory (#38) came from the savannas of West Africa or the jungles of India. Its high demand throughout the Middle Ages resulted in the slaughter of countless elephants for their tusks. After the mid-fourteenth century, ivory supplies dwindled due to changing trade routes and perhaps even climate change, which shifted elephants' grazing patterns. Some

artists responded to the demand for ivory-like products by “upcycling” locally-available scrap bone into fashionable objects like the *Covered chess box* (#36) and *Casket* (#37), reducing cost and waste.

40. **Granada, Spain. Folio from a Pink Qur’an Describing the People of Paradise and Those of Hell, Surat Yunus (Chapter: Jonah) 10: verses 26–7**, early–mid-13th century. Colored inks and gold on pink paper. Cincinnati Art Museum. Gift of Jolynn M. Byron W. Gustin, 2016.369a-b

This page is from a Qur’an, the sacred text of Islam. The Qur’an was communicated to the Prophet Muhammad in Arabic, revered in Islam as the language of divine revelation. Its written form became an art of its own, with refined calligraphic scripts and delicate ornament.

The verses on this page describe the contrasting eternities for sinners (the flames of Hell) and the faithful (a garden of paradise). The garden was an important metaphor and symbol of Heaven in medieval Islam.

Throughout the Middle Ages, much of the Iberian Peninsula (present-day Spain and Portugal) was governed by Muslim rulers and home to large Muslim communities. These areas were known as “Al-Andalus.” This Qur’an’s pink-dyed paper may have been made in Xàtiva, a town in Al-Andalus with an early tradition of papermaking. Paper production requires substantial water supply. Xàtiva is crisscrossed by rivers, which were harnessed to power the mills that churned flax and hemp fibers into paper pulp.

41. **Nasrid dynasty; Granada province, Andalusia, Spain. Curtain Panel with Design of Horizontal Bands of Geometric Patterns and Arabic Inscriptions in Kufic Script**, late 14th century. Brocaded silk. Saint Louis Art Museum, Museum Purchase

Medieval Spain was renowned for the production of luxurious silk cloth like this curtain. The colorful designs and Arabic inscriptions (“beatitude,” “happiness and prosperity”) are characteristic of art produced in Al-Andalus (Muslim Iberia).

Silk making was gradually established in Europe through trade connections with China, where the technology originated. The industry depended on fibers spun by silkworms. Not native to Europe, this species could only thrive in warm climates, like that of southern Spain. The demand for silk led residents to cultivate mulberry trees—the worms’ main food source. As many as three thousand silkworm farms sprung up in southern Spain by the thirteenth century, altering ecosystems and introducing new priorities for land use.

42. **Bruges, West Flanders, Flanders, Belgium. Millefleurs Tapestry**, ca. 1500–1525. Wool tapestry weave. Cincinnati Art Museum, Gift of Mrs. Gordon S. Rentschler, 1972.358

This style of woolen tapestry is called “millefleurs” (French for “thousand flowers”) because its background is studded with brilliant vegetation. Often hung floor-to-ceiling on walls, tapestries enlivened medieval interiors and insulated buildings against the damp and cold. Tapestries may have become popular partially because of the Little Ice Age, a period of climate change that lasted from about 1300 through 1850, causing wet weather and frigid temperatures.

Wool was colored with plant or mineral dyes before it was woven. Chemicals called mordants bound the dye to the wool. The most common mordant was alum. This metallic salt was mined in Africa’s Sahara desert, the Levant, and central Italy and shipped to textile producers across Western Europe.

43. **Franco-Flemish, France (Saint-Omer or Thérouanne). Bestiary, part of a planned miscellany (folio 46v)**, ca. 1270. Tempera colors, gold leaf, and ink on parchment bound between pasteboard covered with brown morocco. The J. Paul Getty Museum, Los Angeles, Ms. Ludwig XV 3

A bestiary is an encyclopedia of real and mythical animals that contains moralizing lessons. This bestiary includes a “Treatise on Flocks and Shepherds.” On the treatise’s opening page Christ passes a shepherd’s staff to a monk, symbolizing the monk’s role as the leader of a congregation (represented here by flocks of sheep and goats).

In medieval Europe, the traits and behaviors of animals were often interpreted through the lens of Christian theology. Sheep and goats had opposing connotations that stemmed from the Bible. Goats symbolized sinners, while sheep represented faithful Christians. Here, these metaphors extend to the animals’ human companions: a goatherd sleeps on the job while the watchful shepherd protects two lambs.

Books like this one were written on parchment, a writing surface made of sheep, goat, or cow skin. Christian monasteries and convents, where monks and nuns lived communally in the service of God, consumed massive quantities of parchment for bookmaking.

44. **Augsberg, Germany. Hamsen Schönsperger, Gart der Gesundheit**, 1487. The Peter H. Raven Library of the Missouri Botanical Garden, Saint Louis, Missouri

Medieval people relied on the bounty of the natural world to survive. Books called herbals contained information on how plants could be used to prevent, treat, and recover from illness. The *Gart der Gesundheit* (*Garden of Health*) was one of the first herbals printed in German. It describes the medicinal uses of nearly four hundred plants. Hand-colored images help the reader identify each herb. The *Gart*’s author, physician Johann Wonnecke von Kaub (1450–ca. 1503), compiled the text from Greco-Roman, Islamic, and medieval European sources.

The invention of moveable type by Johannes Gutenberg around 1450 revolutionized the way books were made. Handwritten manuscripts on parchment eventually gave way to texts printed on paper, like the *Gart*. Paper was originally invented in China. The technology reached Europe by the tenth century through trade with cultures in Central Asia, West Asia, and North Africa. Medieval paper was typically made from discarded cloth. The rags, made of hemp and linen, were shredded in water and pressed into molds. Paper makers typically established themselves in places with wet climates and rugged landscapes, where they could capitalize on quick-running water to efficiently power their mills.

The Nature of Things: Medieval Art and Ecology, 1100-1550

Quarry and Mine

Around the year 1000, French chronicler Rodulfus Glaber observed that the “world was ... reclothing itself everywhere with a white robe of churches.”

The building spree lasted for centuries, aided by engineering advances and economic gains. By 1500, over five hundred major Christian churches and tens of thousands of smaller ones were newly built across Western Europe.

Millions of cubic feet of stone gave shape to these ambitious structures. The stone was typically quarried close to the building site because it was heavy and difficult to transport. Quarriers permanently transformed the land, leaving huge pits in the earth or flattening hillsides as they removed blocks of stone. Masons and sculptors shaped the material into walls, floors, supports, and decorative elements.

Spaces of worship were designed as spectacular religious offerings in and of themselves. They also housed precious ceremonial objects made from materials like copper, silver, and gold. The demand for luxury metals helped spur mining across Europe and beyond.

Like quarries, mines altered medieval landscapes. Workers stripped topsoil to dig shallow pit mines, tunneled through mountainsides, dredged rivers, and crushed massive quantities of stone, heating the rock to high temperatures to extract valuable ores. The resulting environmental pressures extended even into West Africa, where the Mali Empire (ca. 1226–1670) leveraged its rich gold resources for trade to Europe. The medieval metal trade demonstrates how the demand for a resource in one region could drive environmental change thousands of miles away.

45. German. *Reliquary Monstrance*, 15th century.
Copper-gilt, silver-gilt, glass. The Metropolitan Museum of Art, Gift of J. Pierpont Morgan, 1917 (17.190.508a)

This object is located near the staircase outside the gallery's entrance.

Gothic architecture inspired the form of this object. Its soaring spires, tiny gargoyles, and multiple window openings mimic the structure and decoration of medieval Christian buildings. The central lens of this reliquary monstrance likely once held a relic (the material remains of a saint) or a Communion wafer, which would be transformed into the body of Christ during Catholic mass.

To honor their sacred contents, objects like this one were made of fine materials. The upper part of the reliquary monstrance is made of silver covered in a thin layer of gold. This gives the appearance of solid gold while conserving this precious metal. Silver was lighter and much less expensive, which made it an ideal base. In late medieval Western Europe, the largest deposits of silver were in Germany and the Czech Republic. These regions supplied tons of metal, but mining ravaged the landscape, leaving scars in some areas that are still visible today. Refining the ore also required heating it to high temperatures, consuming massive amounts of firewood and contributing to deforestation and erosion.

46. Spain, Bartolomeu Rubio. *The Lord Reprimanding Adam and Eve*, ca. 1362.
Alabaster with trace of polychrome. Fine Arts Museums of San Francisco, Museum purchase, M.H. de Young Museum Society. 59.40

This alabaster sculpture shows a pivotal Biblical event: God admonishing Adam and Eve in the Garden of Paradise after Satan tempted them to eat forbidden fruit from the Tree of Knowledge. After eating the fruit, Adam and Eve's state of blissful innocence was immediately corrupted by feelings of shame, so they covered their naked bodies with leaves. When God discovered their sin, he exiled them from the Garden, condemning them and all their descendants to mortal lives of toil and hardship. Images like this reminded medieval audiences of the Christian belief that unrepentant sin would exclude them from heavenly paradise.

Alabaster is a stone that became popular following the Black Death, a cataclysmic pandemic that killed thirty to sixty percent of Europe's population between 1348 and 1353. The resulting labor shortages prompted artists to seek more easily accessible materials. Alabaster deposits were usually close to the Earth's surface, making it less difficult to quarry. Its natural softness also allowed it to be carved with less physical effort.

47. **Paris, France. *Book of Hours***, ca. 1400. Vellum with tempera and gold leaf. Courtesy George N. Meissner Collection, Washington University Libraries
48. **Germany or France. *Bottom of a Painter's Box with the Crucifixion***, ca. 1350-1375. Ivory. Detroit Institute of Arts. Gift of Robert H. Tannahill, 43.459

Inks and paints used to decorate (or illuminate) medieval books were made from plant and metallic compounds. Lavish books like #47 were illuminated with rare and expensive metals including gold, pounded thin and glued to the parchment, or ground into a powder to paint fine details. Medieval gold often came from the Mali Empire in West Africa, which controlled vast deposits of this precious metal. Dredged from river beds and bundled with other exotic commodities including elephant ivory, gold traveled thousands of miles across desert and ocean to Europe, where it was incorporated into works of art. The nearby ivory plaque (#48) may have once held materials used to decorate manuscripts.

49. **Limoges, France. *Pyx***, 1275-1325. Blue and white enamel, gilt and enameled copper. Toledo Museum of Art, Museum Purchase, 1931.80A
50. **Limoges, France. *Chasse (Relic Case)***, mid-13th century. Copper-gilt, champleve enamel over wood lining. Toledo Museum of Art, Purchased with funds from the Libbey Endowment, Gift of Edward Drummond Libbey, 1950.250
51. **Lower Saxony, Germany. *Aquamanile in the Form of a Lion***, late 13th-early 14th century. Copper alloy. The Metropolitan Museum of Art, Gift of Irwin Untermyer, 1964 (64.101.1490)
52. **Germany. *Censer***, ca. 1400s. Bronze. Spencer Museum of Art, University of Kansas

Medieval Germany had rich copper deposits. German metalworkers reached a high degree of technical skill in this locally-available material. They produced fine works like this lion-shaped aquamanile (#51) and censer (#52). Aquamanilia held water used for hand washing before meals or religious services. Censers held incense made of aromatic herbs, resins, and woods. The fragrant smoke released by the burning incense purified the church's air and symbolized prayers rising to Heaven.

53. **Provence or Rhône Valley, France. *Capital with Riders and Men Felling a Tree***, late 12th century. Limestone. Cincinnati Art Museum. Anonymous Gift, 1973.295

This capital once rested atop a column. It was likely one of six capitals that depicted the Labors of the Months, seasonal activities that were frequent motifs in medieval art. Half of the capital shows riders on horseback, representing April. The other half shows people chopping wood, representing March. The lines on the tree's trunk suggest the wood has been coppiced, a sustainable forestry technique that involves cutting trees at particular points to encourage the growth of many small branches. This enables the repeated harvesting of wood without cutting down the whole tree. Coppiced wood was an important source of fuel for cooking and heating homes as well as industries like cloth making, mining, glassmaking, and ceramics.

54. **French. *Double Column with Base and Capital***, ca. 1300. Granite. Saint Louis Art Museum, Museum Purchase
55. **Santiago de Compostela, Spain. *Column or Columnar Support with Three Apostles: Matthew, Jude, and Simon***, ca. 1125-1150. Marble. Harvard Art Museums/Fogg Museum, Gift of The Republic of Spain through the Museo Arqueologico Nacional and Professor Arthur Kingsley Porter
56. **French. *Capital with an Architectural Frieze***, mid-12th century. Limestone. The Nelson-Atkins Museum of Art, Kansas City, Missouri (Purchase: William Rockhill Nelson Trust) 48-39
57. **Nord-Pas-de-Calais, France. *Fragment of a Capital with Foliate Rinceaux***, 1153-1163. Limestone. Harvard Art Museums/Fogg Museum, Alpheus Hyatt Purchasing Fund

A stone's natural features determined how the medieval sculptor carved it. Limestone (#53, #56-57) is sturdy enough to be used for architecture but soft enough to be carved with fine detail. Marble (#55) is also soft, with colorful veins that can influence design. Granite (#54) is extremely hard and was therefore difficult to carve with pre-modern, handheld tools, limitations which could result in a coarser appearance.

#53 and #56-57 originally topped columns, while #55 supported an altar at a church in Santiago de Compostela, a major pilgrimage site in northwestern Spain.

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Earth

Medieval glass and ceramics were used for tableware and storage but also for architectural decoration. These materials were valued for their utility, durability, and insulating properties.

Whether practical or decorative, mundane or prestigious, glass and ceramics started from humble grounds: sand and clay often dug from large pits near waterways or in forests. Artists used fire to harden the clay into pottery and transform the sand mixture into molten glass.

Since these processes required high heat, the manufacture of glass and ceramics was energy intensive and sometimes linked to deforestation. A pound of glass required several hundred pounds of firewood to produce, and a single kiln firing could consume multiple tons of wood. Because the artists required pure sand or clay and fresh water, in addition to fuel, they often settled throughout the countryside where these natural resources were most abundant. Potters and glassmakers developed innovations to conserve materials, however, using sustainably produced firewood and inventing techniques that required less energy.

The glass and ceramics industries also depended on mining. Metals and metallic oxides lent wares their brilliant colors. These materials were sometimes mined hundreds of miles away, demonstrating how the impact of an artistic practice extended far beyond the local environment.

58. Frechen, North Rhine-Westphalia, Germany. *Bellarmino (Bartmann)*, ca. 1550–1570. Salt-glazed stoneware with pewter. Ex. Noël Hume Collection, The Chipstone Foundation 2019.76

Bellarmino (or Bartmann) jugs feature the face of a bearded man. This motif may represent the “wild man,” a mythical, hair-covered creature believed to inhabit remote woodlands. Wild men (and women) were both feared and celebrated in medieval culture.

This Bartmann is made of salt-glazed stoneware, an important innovation of late medieval Germany. Potters added salt to the kiln when their wares were firing, which created a thin, pebbled glaze on their surfaces. These ceramics had to be fired only once, greatly reducing the amount of fuel consumed. The process released clouds of toxic fumes, however, causing health hazards and environmental pollution.

In the mid-sixteenth century, some German cities banished potters because of concerns over pollution and wood consumption. This jug was likely made in Frechen, a town in western Germany where many exiled potters settled.

59. Spain. “*Albarello*” Vase, 15th century. Ceramic. Cincinnati Art Museum, Given in honor of Mr. and Mrs. Charles F. Williams by their children, 1948.134

60. Manises, Spain. *Dish with a Bird*, 1430–1450. Tin-glazed earthenware (maiolica). Los Angeles County Museum of Art, William Randolph Hearst Collection

- 61. Central Europe, probably Germany. *Beaker with Applied Decoration***, 1275–1325. Blown glass with applied decoration. Corning Museum of Glass
- 62. Germany or an adjoining region to the south or east. *Beaker with Prunts***, 1200–1399. Blown glass with applied decoration. Corning Museum of Glass
- 63. Probably Germany or Switzerland. *Forest Glass Beaker (Krautstrunk)***, 1500–1525. Blown glass with applied decoration. Corning Museum of Glass

Between 1250 and 1500 medieval artists made around eighty million pounds of glass for vessels (#61-63) and windows. Much glass was made in forests, in close proximity to abundant supplies of sand and wood. Since wood was in high demand by many industries in the Middle Ages, glassmaking was heavily regulated. In some areas a glasshouse was allowed to make only a certain number of products each year.

Medieval glassmakers found ways to conserve raw materials and increase the durability of their products. They sometimes used wood that had been coppiced, a forest management technique that involves harvesting small branches rather than chopping down whole trees (see #53 nearby). They also developed innovations including the “kick,” a small cone rising from a glass’s base that reduced its likelihood of shattering while cooling after manufacture. Glassmakers added “prunts” (spiky knobs), which helped people grip glasses, preventing breakage. These features helped glassmakers reduce waste and in turn, decrease the amount of firewood they used.

- 64. Manises, Valencia, Spain. *Lustered Display Dish***, 1440–1460. Tin-glazed earthenware. Saint Louis Art Museum, Museum Purchase

Spanish tin-glazed ceramics (#59–#60, #64) were products of extensive material and cultural networks. First developed in or near the port city of Basra, Iraq to imitate the white color of Chinese porcelain, the tin glazing technique reached Spain by the twelfth century. Records suggest the tin used in medieval Spanish ceramics was mined in southwestern England. Some potters also added blue designs using cobalt (#59-60). This metal was likely mined in Germany, Morocco, or as far away as Iran.

The shimmering orange details on #59 and #64 are the result of the luster technique, first developed in West Asia. Potters used copper to create the iridescent sheen. Lustered ceramics had to be fired three times and the technique was prone to failure. Fuel-intensive and difficult to produce, lusterware was expensive and prestigious.

Although they were purchased by people of many faiths, tin-glazed ceramics often incorporate motifs and forms inspired by Islamic art. This includes the palm design and the repeating *al-afiya* bands (a stylized inscription of the Arabic word for “health” and “happiness”) on #64, as well as the concave shape of #59, a jar used by apothecaries to store herbal medicines.

- 65. Toledo, Spain. *Tiles***, first half of the 16th century. Glazed earthenware. Saint Louis Art Museum, Museum Purchase

- 66. Paterna, Valencia region, Spain. *Ceiling Tile (socarrat) with Design of a Lion***, second half of the 15th century. Slip-painted earthenware. Saint Louis Art Museum, Museum Purchase

- 67. Paterna, Valencia region, Spain. *Ceiling Tile (socarrat) with Design of a Rampant Bull***, second half of the 15th century. Slip-painted earthenware. Saint Louis Art Museum, Museum Purchase

- 68. Paterna, Valencia region, Spain. *Ceiling Tile (socarrat) with Design of a Dragon***, second half of the 15th century. Slip-painted earthenware. Saint Louis Art Museum, Museum Purchase

Ceramic tiles decorated medieval homes, places of worship, and civic buildings. In Spain, tiles like #65 lined the lower parts of interior walls while *socarrats* (#66–68) were set between ceiling beams. To create the red and black motifs on the *socarrats*, tile makers used pigments made with iron and manganese. They sometimes obtained these metals as scraps leftover from other medieval craft industries, reducing costs and waste.