

## 1: Science in the medieval Islamic world - Wikipedia

*the twelfth century among German monastic thinkers but reached its apogee in the 12th century of Joachim of Fiore. 7 But to return to the signs which were thought to herald the approaching.*

**History of Islam** The Islamic era began in 610 when Islamic armies conquered Arabia, Egypt and Mesopotamia, eventually displacing the Persian and Byzantine Empires from the region. Within a century, Islam had reached the area of present-day Portugal in the west and Central Asia in the east. The Islamic Golden Age roughly began in the 8th century and spanned the periods of the Umayyad Caliphate and, in particular, the early phase of the succeeding Abbasid Caliphate, with stable political structures and flourishing trade. Major religious and cultural works of the Islamic empire were translated into Arabic. Islamic culture inherited Greek, Indic, Assyrian and Persian influences. A new common civilisation formed, based on Islam. An era of high culture and innovation ensued, with rapid growth in population and cities. The Arab Agricultural Revolution in the countryside brought more crops and improved agricultural technology, especially irrigation. This supported the larger population and enabled culture to flourish. These translations supported advances by scientists across the Islamic world. After the completion of the Spanish reconquest in 1492, the Islamic world went into an economic and cultural decline.

**Alchemy and chemistry in medieval Islam** Alchemy was already well established before the rise of Islam. It was based on the belief that substances were made up of the four Aristotelian elements, fire, earth, air, and water in different proportions. Alchemists supposed that gold was the noblest metal, and that other metals formed a series down to the basest, such as lead. They believed, too, that a fifth element, the elixir, could transform a base metal into gold. Jabir ibn Hayyan (8th–9th centuries) wrote on alchemy, based on his own experiments. He described laboratory techniques and experimental methods that would continue to be used when alchemy had transformed into chemistry. Ibn Hayyan identified many substances including sulphuric and nitric acids. He described processes such as sublimation, reduction and distillation. He made use of equipment such as the alembic and the retort stand.

**Astronomy in the medieval Islamic world and Cosmology in medieval Islam** Astronomy was a major discipline within Islamic science. Effort was devoted both towards understanding the nature of the cosmos and to practical purposes. One of these was determining the Qibla, the direction in which to pray. Another was astrology, predicting events affecting human life and selecting suitable times for actions such as going to war or founding a city. He contributed to the Tables of Toledo, used by astronomers to predict the movements of the sun, moon and planets across the sky. Some of his astronomic tables were later used by Copernicus. He constructed a water clock in Toledo. He developed trigonometry as a separate field, and compiled the most accurate astronomical tables available up to that time.

## 2: Project MUSE - The Crisis of the Twelfth Century

5. *The apogee of the Atheniotissa in the twelfth century* [] *Athens in the twelfth century* [] Georgios Bourtzes () [] Nikolaos Hagiotheodorites () [].

Additional Information In lieu of an abstract, here is a brief excerpt of the content: Nevertheless, the suffering of peasants and townsfolk, well documented in some places and highly suspect in much of Europe, is not only a major element of the continuous history of power; it is the key to understanding which continuities of the twelfth century were most characteristically disrupted. Without continuity there would have been no crisis in this age. In response to this question two normal continuities of power have been explored: It was the violation of the first of these norms in the tenth and eleventh centuriesâ€”not for the first time, but perhaps with newly disruptive forceâ€”that created the second one. Not only was lordship on a massive scale a new phenomenon almost everywhere, it speedily became customary. What is more, by about it was becoming customary even in its coercive or violent forms. If a perceptive biographer of King Henry IV and a great abbot of Cluny were among the few to see and say this clearly and explicitly, their testimony is borne out by incessant hints, insinuations, and complaints from almost every corner of Europe. And this is evidence, let us not forget, of a mode of coercive lordship that had no outlet of literate expression of its own. Even so, its tongue-tied norm must have been virtually as ubiquitous as customary vengeance, yet another continuity reeking of violence and one quite as ancient and tenacious as public order. Far more expressive than new lordship, vengeance was often a factor in crises of power, and not only in that of Flanders; yet it was hardly a debatable determinant in itself. What moved the crises of the twelfth century were not simply the designs and dynastic accidents of the powerful amidst growing populations and wealth, but chiefly the new customs of coercive lordship: This dynamic explainsâ€”not alone, but substantiallyâ€”the violence and violations of which monks in Eng- E P I L O g U E land and elsewhere and peasants in Catalonia and elsewhere complained. And it is this customarily coercive lordship, a novel continuity seemingly in conflict with that of public order, that invites us to think of the recurrent crises of power that have been sampled as the symptoms of an unstable confrontation of forces that may justly be thought of as one protracted crisis of the twelfth century. That our subject was indeed a structural crisis is suggested by a singularly precious witness. By his account the Polish bishops prohibited three kinds of violence under ecclesiastical sanction: These prohibitions require little further commentary. They suggest that, as in many other lands, the exploitative lordship of peasants was normal in Poland. You are not currently authenticated. View freely available titles:

## 3: The Christian Parthenon : Anthony Kaldellis :

*The Twelfth Century Renaissance was an internationalist movement. One characteristic of this was the "wandering scholars" who traveled from country to country. They developed their own genre of poetry - Carmina Burana - Latin songs celebrating academic and also more earthly pleasures.*

Medieval renaissances The groundwork for the rebirth of learning was laid by the process of political consolidation and centralization of the monarchies of Europe. Otto was successful in unifying his kingdom and asserting his right to appoint bishops and archbishops throughout his kingdom. Yet the renaissance of the twelfth century was far more thoroughgoing than those renaissances that preceded in the Carolingian or in the Ottonian periods. Historiography[ edit ] Charles H. Haskins was the first historian to write extensively about a renaissance that ushered in the High Middle Ages starting about In , he wrote that: The epoch of the Crusades , of the rise of towns , and of the earliest bureaucratic states of the West, it saw the culmination of Romanesque art and the beginnings of Gothic ; the emergence of the vernacular literatures ; the revival of the Latin classics and of Latin poetry and Roman law ; the recovery of Greek science , with its Arabic additions , and of much of Greek philosophy ; and the origin of the first European universities. The 12th century left its signature on higher education, on the scholastic philosophy , on European systems of law, on architecture and sculpture, on the liturgical drama , on Latin and vernacular poetry From , he wrote, monumental abbeys and cathedrals were constructed and decorated with sculptures, hangings, mosaics and works belonging to one of the greatest epochs of art and providing stark contrast to the monotonous and cramped conditions of ordinary living during the period. Abbot Suger of the Abbey of St. Denis is considered an influential early patron of Gothic architecture and believed that love of beauty brought people closer to God: Clark calls this "the intellectual background of all the sublime works of art of the next century and in fact has remained the basis of our belief of the value of art until today". The eventful twelfth century was, in many ways, a veritable paradox. On the one hand, it saw a sudden surge in academic works and universities in western and southern Europe that sought to bridge the worlds previously thought entirely incommensurable and usher in an age of scholasticism that would eventually lead to the fourteenth- to seventeenth-century Renaissance. On the other hand, the same century also reads as a striking catalogue of most violent acts and disasters: Latin translations of the 12th century and Transmission of the Greek Classics The translation of texts from other cultures, especially ancient Greek works, was an important aspect of both this Twelfth-Century Renaissance and the latter Renaissance of the 15th century , the relevant difference being that Latin scholars of this earlier period focused almost entirely on translating and studying Greek and Arabic works of natural science , philosophy and mathematics , while the later Renaissance focus was on literary and historical texts. In Bergen and Novgorod the league had factories and middlemen. The era of the Crusades brought large groups of Europeans into contact with the technologies and luxuries of Byzantium for the first time in many centuries. In the mid 13th century, the " Pax Mongolica " re-invigorated the land-based trade routes between China and West Asia that had fallen dormant in the 9th and 10th centuries. While the accounts of Carpini et al were written in Latin as letters to their sponsors, the account of the later Italian traveler Marco Polo, who followed his father and uncle as far as China, was written first in French c.

## 4: The Reformation of the Twelfth Century - Giles Constable - Google Books

*The Renaissance of the 12th century was a period of many changes at the outset of the high Middle Ages. It included social, political and economic transformations, and an intellectual revitalization of Western Europe with strong philosophical and scientific roots.*

Lecture 26 The 12th Century Renaissance Our own generation enjoys the legacy bequeathed to it by that which preceded it. We frequently know more, not because we have moved ahead by our own natural ability, but because we are supported by the mental strength of others, and possess riches that we have inherited from our forefathers. Bernard of Clairvaux used to compare us to puny dwarfs perched on the shoulders of giants. He pointed out that we see more and farther than our predecessors, not because we have keener vision or greater height, but because we are lifted up and borne aloft on their gigantic stature. Nonetheless, advances were made in social organization, technology, intellectual pursuit and education. This overall improvement continued throughout the 12th century at an accelerated rate. The people who inhabited western Europe showed tremendous energy and persistence in all of their activities whether religious, political, economic or cultural. They had a willingness to experiment with new types of organization and in general, were receptive to new ideas. They produced great leaders who gave form to their aspirations. These leaders were supported by public opinion which for the most part was much more homogeneous than it is today. Great Churchmen such as St. Bernard of Clairvaux were almost entirely dependent upon public opinion. A man such as Bernard could dominate Europe because people believed the ideals he expressed. Without a doubt, the 12th century in western Europe can be characterized as a flowering of civilization, indeed, a renaissance. It is clear that all European social life during the Middle Ages was based upon several dominant ideals. These ideals were inspired by the Christian faith as interpreted by the Church. Not everyone lived up to these ideals, but everyone was affected by them. Ordinary men and women might sin but they were more than careful to do penance before the situation got out of hand. It can be said with certainty that the Church ordered everything -- sight and sound, time and space, fell under the control and word of the Church. In her wonderful book, *A Distant Mirror: The Calamitous 14th Century*, the historian Barbara Tuchman wrote that: Christianity was the matrix of medieval life: Membership in the Church was not a matter of choice; it was compulsory and without alternative, which gave it a hold not easy to dislodge. But, the religion of the 12th century was undergoing a gradual transformation. Whereas in an earlier time, man was becoming more Christian, in the 12th century, there were efforts underway to make Christianity more human. That is, more oriented toward man. During the historical Renaissance of the 14th and 15th centuries, this sentiment would be expressed by the word humanism. There were many people who could neither accept nor believe that the majority of mankind would be damned forever. At the same time as this concern for what was human in Christianity occurred, there was also a strong desire for a more personal and intense religious experience, something we will witness again during the Protestant Reformation. The Christian Matrix, the monopoly of Christian knowledge by popes, clerics and monks and the intense personal devotion of the common person ought to reveal to us that the medieval world was nothing less than an Age of Faith. The second important group of ideals concerned the medieval concept of justice. This concept of justice came as much from Christian virtue and divine law as it did from the real world of 12th century politics. Justice, both secular and divine, became the key to good government, peace and security. Because of this, the 12th century made great efforts to improve their judicial systems. The study of Roman law was revived and a summary of the laws of the Church was given by the Benedictine monk Gratian. Early medieval courts found themselves in hopeless situations when faced with contradictory statements by opposing parties. The courts usually took refuge in the judgment of God alone. By the 12th century, there was expressed a general dissatisfaction with law and the courts. Jurists experimented with proofs and demonstrations, the use of witnesses increased as did the utilization of juries. Even stronger than these more technical improvements was a change in the spirit of the people. There was a growing desire to obtain legal solutions to controversies instead of fighting them out. In the end, the courts were forced to make themselves more efficient. And as the courts tried more cases per term instead of two or three year, they

gained valuable experience which aided in the development of law and the concept of justice in general. Christian faith and ideal of justice affected all people in western Europe. Less widespread but still of supreme importance in our story, was the growing desire for knowledge. This desire influenced thousands of men and women of all social classes. Some of this knowledge was in theology and still more in jurisprudence. But the desire for knowledge had roots of its own, that is the love of study for its own sake, independent of the Church or courts of law. Some Church Fathers opposed this secular tendency but in the end, the love of learning overcame opposition. Students in the 12th century were eager for knowledge and sought it out with enthusiasm. They read the Latin classics, analyzed the texts of Roman law, they read and commented on the works of the Church Fathers. The most advanced scholars knew that the Muslims of Islamic civilization had great storehouses of knowledge so they traveled to Spain to tap these new sources of information. Others went to Constantinople to obtain translations of Greek manuscripts. In the end, these scholars renewed western knowledge of Greek science and philosophy and to this added the treasures of Arabic mathematics and medicine. This renewed energy started men thinking about basic scientific problems and translations of the 12th century began, I think, a line of investigation which lead, in the end, to Copernicus and Galileo in the early 17th century. However, it is obvious that the old monastic and cathedral schools could not absorb the increasing number of students. So, students began to congregate in cities where a likely master could be found. From this development came the great universities of the late 12th century -- Oxford, Paris and Bologna. Many men in the 12th century were ambitious and certainly wanted to better themselves. This was usually accomplished by creating fortunes. In other words, there were some men who were interested in profits alone. However, this profit motive, if we can call it such, was clearly not as strong as it would become in the 16th century and after. The largest group of ambitious men were the peasants. The peasants did not really want greater wealth since they were more interested in improving their status. As a dominant ideal, status was more important than wealth. The peasant who went to the German frontier to clear land or to France to work as a member of a textile guild did not necessarily do so in order to increase his wealth. What he did gain was more freedom for himself and greater opportunities for his children. The new students who attended European universities also gained more in status than they did in wealth. Some entered the clergy but these positions were declining in number. Sons of the nobility entered monasteries for the status it brought to them and their families. Joining a monastery also had the psychological and social effect of bringing the family closer to God. The study of law was prestigious in itself and students sought profit and power through its study. But even in jurisprudence there were those men who studied law for its own sake, in other words, for knowledge alone. The landholding class were sure to make as much money as they could by renting their land as well as by opportune marriages with other wealthy families. But they tended to spend their money as fast as they could make it. In general, the class of landlords and landowners were not good businessmen by any modern standard. Their ideal was free and easy spending and not thrift. They wanted to live nobly, that is, they wanted to live without working. They were, as an order, more apt to run into debt and make some shrewd investments that increase their income and profits. We would expect to see the town dweller or bourgeoisie to be the one order most fully imbued and dominated by the profit motive. Status meant less to them than did money. They prized money so much because they were more skilled in using it to increase their wealth. They knew how to split the risks of a long voyage by selling shares in a ship. They also knew about loans and interest. But even in the 12th century towns, the profit motive was not entirely dominant. There were few external restraints: The restraints this order faced were inherent in the nature of early medieval business practice. Merchants and artisans were a small minority living in a society which did not really trust them. These merchants and artisans had to give each other mutual support in order to preserve their rights and property. While they shared common dangers they also shared their business opportunities. Without this cooperation and mutual support, the economic life of the town and country would have been weakened. As a result, great concentrations of wealth among this order of people were rare. While ambition and desire for worldly success were pretty much common in the 12th century, they were not always associated with a desire to make money. Wealth was less important than such things that is personal freedom, titles, high office or the reputation one earned as a scholar. From what has been said it ought to be clear that the 12th century was both original and energetic. In

this way, it was perhaps a worthy rival to the Golden Age of Greece and Rome. Today, we are still influenced by the 12th century: As I have already mentioned, the 12th century witnessed a growing desire for knowledge. The thousands of students who roamed Europe at the end of the century were interested in every scrap of knowledge they could find.

## 5: Lecture The 12th Century Renaissance

*A seminal book from that cogently argues that the 'real' Renaissance happened earlier, and the one we know of is simply the next step. Haskins was the scholar who coined the term 'Twelfth Century Renaissance', and thus, opening new field of inquiry.*

Much of the work of translation was carried out at Barcelona, Tarazona, Sagovia, Leon, Pamplona, as well as beyond the Pyrenees at Toulouse, Beziers, Narbonne, and Marseilles, in the first quarter of the twelfth century. Later, after , the chief centre became Toledo, due to the patronage of Raymond, the archbishop of Toledo. Gerbert of Aurillac, born into the tenth century, was one of the first to profit from the Arab learning. Through Bishop Lupitus of Barcelona, he acquired instruments and books on Arab mathematics and science, apparently amazing his contemporaries with the skills he learned. Early in the twelfth century the whole of Euclid's Elements of Geometry was translated, then his Data and Optics and Algebra. The Arabs had also ruled in Sicily from until , and there the Muslim population remained largely intact after the Norman conquest. There, in the middle of the twelfth century, Edrisi wrote his compendium of Arabic geography, and Eugene of Palermo translated the Optics of Ptolemy from the Arabic. North Africa was the source of additional books on mathematics. From this foundation, the mathematician Leonard of Pisa was able to write his Liber Abaci along with solutions of quadratic and cubic equations. Astronomical texts were mainly copies of Bede and Helperic in Europe. As late as , Philippe de Thaon wrote his Cumpoz from the Latin tradition. The next year, Walcher of Malvern began to figure in degrees, minutes, and seconds, as he had learned to do from a Spanish Jew, Petrus Alphonsi. Adelard of Bath was a translator of both Arabian and Greek works. The range of his interests can be judged from his writings, which include texts on trigonometry, astrology, Platonic philosophy, falconry, and chemistry. What he acquired from the Arabs was a rationalist's mentality, what we would call secular thinking. He developed a feel for observation and experiment. In a letter to his nephew, he wrote: If reason is not to be the universal judge, it is given to each to no purpose. Constantine the African, a Benedictine monk of Monte Cassino, was at work in the eleventh century translating important medical works, which inspired a revival of studies at the first modern medical school in Europe, at Salerno. Advances in medical science required the medical knowledge of the ancient world, especially Hippocrates and Galen. Constantine the African translated some of their teaching, his versions constituting most of the twenty six treatises of the medical library of Hildesheim in . Most of their writings came to the west, however, in the later twelfth century through the Arabic versions translated by Gerard of Cremona. Medieval Islamic Science In Islamic thought, there were three schools which dominated. Firstly, there was the Peripatetic school which followed Aristotle. Secondly, was the school which followed Plato, called the Aprioristic school by Pines. Thirdly was the school of the Mathematicians. Of course, the mathematicians placed a great emphasis upon the validity of the mathematical description of the world. The other two schools shared an interest in phenomena and in the description of phenomenon, seeking knowledge of experience rather than knowledge of causes. The main reason that the Apriorists could become so concerned with phenomenon was that many of their leading spokesmen, like Al-Rhazi, were physicians whose medical attitude was dependant upon observation. It must be emphasised that the natural sciences, medicine, geography, alchemy, mathematics, and other such pursuits were utterly peripheral to the whole mainstream of Islamic scholarship. Mohamedanism was not hostile to these sciences, and so they developed normally, but they developed only as a means of further glorifying the whole culture, religion, philosophy, and vision, of Islam. Their scientific work was valid in their own eyes only because it fit well with the whole truth, which was their vision of God and His universe. The science of the Arabs was chiefly Greek in origin, either by being direct translations of Greek works, or through Syrian or Hebrew copies. However, this body of ancient works was improved upon, developed, by the Arabs under the patronage of generations of benevolent Caliphs. Many of our scientific words in the West are derived from the Arab manuscripts. The medical works which were translated often came with glossaries of botanical terms in Greek and Arabic. Ophthalmology first developed in Egypt, where such words as Retina and cataract originated. The words algebra, zero, cipher, almanac, zenith, azimuth, alchemy, alcohol, alkali,

elixir, syrup, bazaar, tariff, arsenal, and the Arabic numerals, all come to us from Islam. As far as the other natural sciences are concerned, the Arabs made their contributions in each field of study. Al- Biruni was especially perceptive of geological processes as he saw them indicated in natural formations. Referring to having found sea fossils inland, he wrote: In a similar way, sea has turned into land, and land into sea; which changes, if they happened before the existence of man, are not known and if they took place later they are not remembered because with the length of time the record of events breaks off especially if this happens gradually. This only a few can realise. Islamic learning in the middle ages was so far in advance of the European traditions that the usage of Islamic knowledge by Europe cannot be seen as other than a wholesale adoption of an entire foundation of knowledge upon which the Later Renaissance was constructed. In addition to the scholastic contributions, such as the philosophy of Aristotle, there are four specific areas of scientific specialisation which merit particular attention, in the form of a specific review; the four most telling fields of Arabic science being medicine, astronomy, physics and chemistry.

### 6: Nikephoros I - Wikipedia

*The Twelfth-Century Renaissance: A Reader (Readings in Medieval Civilizations and Cultures) by Alex J. Novikoff Paperback \$ Only 3 left in stock (more on the way). Ships from and sold by www.enganchecubano.com*

### 7: MEDIEVAL SCIENCES: THE ISLAMIC FOUNDATION OF THE RENAISSANCE: [www.enganchecubano.com](http://www.enganchecubano.com)

*Indeed, the apogee of the Pietists' mystical experience is the creation of a golem, a human body made of clay and animated via theurgical letter manipulation. 14 The stable, intact human.*

### 8: The Renaissance of the Twelfth Century by Charles Homer Haskins

3 *"The past still present and active in the medieval present" (p. ) summarizes the message of Chapter 5, "The apogee of the Atheni-otissa in the twelfth century."*

### 9: The Twelfth Century Renaissance

*The Crisis of the Twelfth Century Thomas N. Bisson Published by Princeton University Press Bisson, N.. The Crisis of the Twelfth Century: Power, Lordship, and the Origins of European Government.*

*Stories from old-fashioned childrens books. The Council of Nicaea (A.D. 326). Introduction : the choice is yours The Home Birth Advantage Akkordeon-spasp Bd. 2 Justice by lottery Financial management new age international Human Bullets a Soldiers Story of Port Author Sleep in the cardiac disorders Harvesting the crisis: the Newark uprising, the Kerner Commission, and writings on riots Kevin Mumford Effective business report writing Abortion in the marketplace : lay practitioners and doctors compete Spinoza and Other Heretics. Vol. 1 Citroen c4 manual book Turbulence and magnetic fields in astrophysics Jude 20-21: contending for the faith : the commitments we make American government, policy, and non-decisions Introduction Patricia J. McAlexander, Nicole Pepinster Greene Mutual Funds, in Crisis? We it tutorials network security Siam in Trade and War Eos 5d mark iv manual Tools of geometry Chapter 7: Nutrition During Pregnancy Thermodynamic evaluation of predicted fluorinated ether, ethane, and propane azeotropes Infrared optics and zoom lenses Balance work and life Experiential organizational behavior As Far As Blood Goes Hypnosis and counselling in the treatment of chronic illness Belle du seigneur Child abuse, acrying shame Logic pro 10.3 manual Nobody else can walk it for you Mowat, F. The last husky. The LDS childrens activity book XVIII. Indulgences 213 Monsters: Human Freaks in Americas Gilded Age The uncommon woman Portrait of a true woman Nancy Leigh DeMoss*