The 100: A Ranking of the Most Influential Persons in History

Newton, Isaac  1643 – 1727  (牛顿，艾萨克)

Physicist and mathematician. Born January 4, 1643 (some sources say December 25, 1642) in Woolsthorpe, a hamlet in southwestern Lincolnshire, England. When Newton was a child, Lincolnshire was a battleground of the civil wars, in which religious dissension and political rebellion was dividing England’s population. Also of significance for his early development were circumstances within his family. He was born after the death of his father, and in his third year his mother married the rector of a neighboring parish and left her son at Woolsthorpe in the care of his grandmother.

After a rudimentary education in local schools, he was sent at the age of 12 to the King’s School in Grantham, where he lived in the home of an apothecary named Clark. It was from Clark’s stepdaughter that Newton’s biographer William Stukeley learned many years later of the boy’s interest in her father’s chemical library and laboratory and of the windmill run by a live mouse, the floating lanterns, sundials, and other mechanical contrivances Newton built to amuse her. Although she married someone else and he never married, she was the one person for whom Newton seems to have had a romantic attachment.

At birth Newton was heir to the modest estate which, when he came of age, he was expected to manage. But during a trial period midway in his course at King’s School, it became apparent that farming was not his metier. In 1661, at the age of 19, he entered Trinity College, Cambridge. There the questioning of long-accepted beliefs was beginning to be apparent in new attitudes toward man’s environment, expressed in the attention given to mathematics and science.

After receiving his bachelor’s degree in 1665, apparently without special distinction, Newton stayed on for his master’s; but an epidemic of the plague caused the university to close. Newton was back at Woolsthorpe for 18 months in 1666 and 1667. During this brief period he performed the basic experiments and apparently did the fundamental thinking for all his subsequent work on gravitation and optics and developed for his own use his system of calculus. The story that the idea of universal gravitation was suggested to him by the falling of an apple seems to be authentic: Stukeley reports that he heard it from Newton himself.

Returning to Cambridge in 1667, Newton quickly completed the requirements for his master’s degree and then entered upon a period of elaboration of the work begun at Woolsthorpe. His mathematics professor, Isaac Barrow, was the first to recognize Newton’s unusual ability, and when, in 1669, Barrow resigned to devote himself to theology, he recommended Newton as his successor. Newton became Lucasian professor of mathematics at 27 and stayed at Trinity in that capacity for 27 years.

Newton’s main interest at the time of his appointment was optics, and for several years the lectures required of him by the professorship were devoted to this subject. In a letter of 1672 to the secretary of the Royal Society, he says that in 1666 he had bought a prism “to try therewith the celebrated phenomena of colours.” He continues, “In order thereto having darkened the room and made a small hole in my window-shuts to let in a convenient quantity of the Sun’s light, I placed my prism at its entrance, that it might be thereby refracted to the opposite wall.” He had been surprised to see the various colors appear on the wall in an oblong arrangement (the vertical being the greater dimension), “which according to the received laws of refraction should have been circular.” Proceeding from this experiment through several stages to the “crucial” one, in which he had isolated a single ray and found it unchanging in color.
and refrangibility, he had drawn the revolutionary conclusion that "Light itself is a heterogeneous mixture of differently refrangible rays."

These experiments had grown out of Newton's interest in improving the effectiveness of telescopes, and his discoveries about the nature and composition of light had led him to believe that greater accuracy could not be achieved in instruments based on the refractive principle. He had turned, consequently, to suggestions for a reflecting telescope made by earlier investigators but never tested in an actual instrument. Being manually dexterous, he built several models in which the image was viewed in a concave mirror through an eyepiece in the side of the tube. In 1672 he sent one of these to the Royal Society.

Newton felt honored when the members were favorably impressed by the efficiency of his small reflecting telescope and when on the basis of it they elected him to their membership. But when this warm reception induced him to send the society a paper describing his experiments on light and his conclusions drawn from them, the results were almost disastrous for him and for posterity. The paper was published in the society's Philosophical Transactions, and the reactions of English and Continental scientists, led by Robert Hooke and Christiaan Huygens, ranged from skepticism to bitter opposition to conclusions which seemed to invalidate the prevalent wave theory of light.

At first Newton patiently answered objections with further explanations, but when these produced only more negative responses, he finally became irritated and vowed he would never publish again, even threatening to give up scientific investigation altogether. Several years later, and only through the tireless efforts of the astronomer Edmund Halley, Newton was persuaded to put together the results of his work on the laws of motion, which became the great Principia.

Newton's magnum opus, Philosophiae naturalis principia mathematica, to give it its full title, was completed in an astonishing 18 months. It was first published in Latin in 1687, when Newton was 45. Its appearance established him as the leading scientist of his time, not only in England but throughout the Western world. In the Principia Newton demonstrated for the first time that celestial bodies follow the laws of dynamics and, formulating the law of universal gravitation, gave mathematical solutions to most of the problems concerning motion which had engaged the attention of earlier and contemporary scientists. Book 1 treats the motion of bodies in purely mathematical terms. Book 2 deals with motion in resistant mediums, that is, in physical reality. In Book 3, Newton describes a cosmos based on the laws he has established. He demonstrates the use of these laws in determining the density of the earth, the masses of the sun and of planets having satellites, and the trajectory of a comet; and he explains the variations in the moon's motion, the precession of the equinoxes, the variation in gravitational acceleration with latitude, and the motion of the tides. What seems to have been an early version of book 3, published posthumously as The System of the World, contains Newton's calculation, with illustrative diagram, of the manner in which, according to the law of centripetal force, a projectile could be made to go into orbit around the earth.

In the years after Newton's election to the Royal Society, the thinking of his colleagues and of scholars generally had been developing along lines similar to those which his had taken, and they were more receptive to his explanations of the behavior of bodies moving according to the laws of motion than they had been to his theories about the nature of light. Yet the Principia presented a stumbling block: its extremely condensed mathematical form made it difficult for even the most acute minds to follow. Those
who did understand it saw that it needed simplification and interpretation. As a result, in the 40 years from 1687 to Newton's death the Principia was the basis of numerous books and articles. These included a few peevish attacks, but by far the greater number were explanations and elaborations of what had subtly evolved in the minds of his contemporaries from "Mr. Newton's theories" to the "Newtonian philosophy."

The publication of the Principia was the climax of Newton's professional life. It was followed by a period of depression and lack of interest in scientific matters. He became interested in university politics and was elected a representative of the university in Parliament. Later he asked friends in London to help him obtain a government appointment. The result was that in 1696, at the age of 54, he left Cambridge to become warden and then master of the Mint. The position was intended to be something of a sinecure, but he took it just as seriously as he had his scientific pursuits and made changes in the English monetary system that were effective for 150 years.

Newton's London life lasted as long as his Lucasian professorship. During that time he received many honors, including the first knighthood conferred for scientific achievement and election to life presidency of the Royal Society. In 1704, when Huygens and Hooke were no longer living, he published the Opticks, mainly a compilation of earlier research, and subsequently revised it three times; he supervised the two revisions of the Principia; he engaged in the regrettable controversy with G. W. von Leibniz over the invention of the calculus; he carried on a correspondence with scientists all over Great Britain and Europe; he continued his study and investigation in various fields; and, until his very last years, he conscientiously performed his duties at the Mint.

In the interval between publication of the Principia in 1687 and the appearance of the Opticks in 1704, the trend was away from the use of Latin for all scholarly writing. The Opticks was written and originally published in English (a Latin translation appeared 2 years later) and was consequently accessible to a wide range of readers in England. The reputation which the Principia had established for its author of course prepared the way for acceptance of his second published work. Furthermore, its content and manner of presentation made the Opticks more approachable.

Newton's mathematical genius had been stimulated in his early years at Cambridge by his work under Barrow, which included a thorough grounding in Greek mathematics as well as in the recent work of Rene Descartes and of John Wallis. During his undergraduate years Newton had discovered what is known as the binomial theorem; invention of the calculus had followed; mathematical questions had been treated at length in correspondence with scientists in England and abroad; and his contributions to optics and celestial mechanics could be said to be his mathematical formulation of their principles. But it was not until the controversy over the discovery of the calculus that Newton published mathematical work as such. The controversy, begun in 1699, when Fatio de Duillier made the first accusation of plagiarism against Leibniz, continued sporadically for nearly 20 years, not completely subsiding even with Leibniz's death in 1716.

Two other areas to which Newton devoted much attention were chronology and theology. A shortened form of his Chronology of Ancient Kingdoms appeared without his consent in 1725, inducing him to prepare the longer work for publication; it did not actually appear until after his death. In it Newton attempted to correlate Egyptian, Greek, and Hebrew history and mythology and for the first time made use of astronomical references in ancient texts to establish dates of historical events. In his Observations upon the Prophecies of Daniel and the Apocalypse of St. John, also posthumously published, his aim was
to show that the prophecies of the Old and New Testaments had so far been fulfilled.

The mass of Newton's papers, manuscripts, and correspondence that survive reveal tremendous powers of concentration, ability to stand long periods of intense mental exertion, and objectivity uncomplicated by frivolous interests. The many portraits of Newton (he was painted by nearly all the leading artists of his time) range from the fashionable, somewhat idealized, treatment to a more convincing realism. When Newton came to maturity, circumstances were auspiciously combined to make possible a major change in men's ways of thought and endeavor. The uniqueness of Newton's achievement could be said to lie in his exploitation of these unusual circumstances. He alone among his gifted contemporaries fully recognized the implications of recent scientific discoveries. With these as a point of departure, he developed a unified mathematical interpretation of the cosmos, in the expounding of which he demonstrated method and direction for future elaboration. In shifting the emphasis from quality to quantity, from pursuit of answers to the question "Why?" to focus upon "What?" and "How?" he effectively prepared the way for the age of technology. He died on March 20, 1727.

Jesus Christ

The central figure of the Christian faith, whose nature as "Son of God" and whose redemptive work are traditionally considered fundamental beliefs for adherents of Christianity. "Christ" became attached to the name "Jesus" in Christian circles in view of the conviction that he was the Jewish Messiah ("Christ").

Jesus of Nazareth is described as the son of Mary and Joseph, and is credited with a miraculous conception by the Spirit of God in the Gospels of Matthew and Luke. He was apparently born in Bethlehem c.6--5BC(before the death of Herod the Great in 4BC), but began his ministry in Nazareth. After having been baptized by John the Baptist in the Jordan (perhapsAD28--29, Luke 3.1), he gathered a group of 12 close followers or apostles, the number perhaps being symbolic of the 12 tribes of Israel and indicative of an aim to reform the Jewish religion of his day.

The main records of his ministry are the New Testament Gospels, which show him proclaiming the coming of the kingdom of God, and in particular the acceptance of the oppressed and the poor into the kingdom. He was apparently active in the villages and country of Galilee rather than in towns and cities, and was credited in the Gospel records with many miraculous healings, exorcisms, and some "nature" miracles, such as the calming of the storm. These records also depict conflicts with the Pharisees over his exercise of an independent "prophetic" authority, and especially over his pronouncing forgiveness of sins; but his arrest by the Jewish priestly hierarchy appears to have resulted more directly from his action against the Temple in Jerusalem. The duration of his public ministry is uncertain, but it is from John's Gospel that one gets the impression of a 3-year period of teaching. He was executed by crucifixion under the order of Pontius Pilate, the Roman procurator, perhaps because of the unrest Jesus's activities were causing. The date of death is uncertain, but is usually considered to be in 30 or 33. Accounts of his resurrection from the dead are preserved in the Gospels, Pauline writings, and Acts of the Apostles; Acts also refers to his subsequent ascension into heaven.

The New Testament Gospels as sources for the life of Jesus have been subject to considerable historical questioning in modern Biblical criticism, partly in view of the differences amongst the Gospel accounts themselves (with the differences between John's Gospel and the other three often casting doubt on the former). Form criticism has drawn attention to the influences affecting the Jesus-traditions in the period before the Gospels were written, and when traditions were being transmitted mainly in small units
by word of mouth. Redaction criticism has, in addition, drawn attention to the creative role of the Gospel writers. Some scholars have been pessimistic about efforts to reconstruct the life of Jesus at all from our Gospel sources, and have distinguished between the "Jesus of history' and the "Christ of faith", with only the latter being theologically significant for faith. More recent scholars have often attached greater importance to the historical Jesus for Christian faith, and in particular efforts have been made to present a credible hypothesis about the historical Jesus in terms of the social, political, and cultural situation in Palestine in the early 1st-c. Limited references to Jesus can also be found in works of the Jewish historian Josephus and the Roman historians Tacitus and Suetonius; and other noncanonical Christian traditions circulated about Jesus, many of which are late and probably spurious.

Buddha ("the enlightened one") DT1a c.) c. 483BC（释迦牟尼<佛>）

The title of Prince Gautama Siddhartha, the founder of Buddhism, born the son of the rajah of the Sakya tribe ruling in Kapilavastu, Nepal. When about 30 years old he left the luxuries of the court, his beautiful wife, and all earthly ambitions for the life of an ascetic; after six years of austerity and mortification he saw in the contemplative life the perfect way to self-enlightenment. According to tradition, he achieved enlightenment when sitting beneath a banyan tree near Buddh Gaya, Bihar. For the next 40 years he taught, gaining many disciples and followers, and died at the age of about 80 in Kusinagara, Oudh. His teaching is summarized in the Four Noble Truths, the last of which affirms the existence of a path leading to deliverance from the universal human experience of suffering. The goal is Nirvana, which means "the blowing out" of the fires of all desires, and the absorption of the self into the infinite.

Confucius 551BC -- 479 （孔子）

Chinese philosopher, teacher. Born in 551, Confucius was the founder of the humanistic school of philosophy known as the Ju or Confucianism, which taught the concepts of benevolence, ritual, and propriety.

In the 6th century B.C. China had begun to disintegrate into a loose confederation of city-states. The nominal ruler of China was the King of Chou, who occupied the imperial capital at Loyang in northcentral China. The Chou had been the supreme rulers of the entire Chinese Empire 500 years earlier, but now they were simply a pawn of the competing Chinese states. This period is generally depicted as a time of great moral decline, when principles and integrity meant little to the official classes. The most detailed traditional account of Confucius' life is contained in the Records of the Historian (Shih chi) by Ssu-ma Ch'ien, who lived 145-86 B.C. Many modern scholars have dismissed this biography as a fictionalized, romanticized legend by a Confucian apologist. Nevertheless, in spite of obvious anachronisms, when used with the Analects (Lun yu), which purports to record actual conversations between Confucius and his disciples, one can reconstruct a satisfactory outline of the philosopher's family background, his career, and the role he played in 6th-century society.

According to the Records of the Historian, Confucius was a descendant of a branch of the royal house of Shang, the dynasty that ruled China prior to the Chou. His family, the K'ung, had moved to the small state of Lu, located in the modern province of Shantung in northeastern China. There is an early tradition that Confucius' father at an advanced age divorced his first wife because she had borne him only daughters and one disfigured son and married a 15-year-old girl from the Yen clan, who gave birth to K'ung Ch'iu. Ssu-ma Ch'ien refers to the relationship as a "wild union," which very possibly indicates that Confucius was an illegitimate child.
Confucius’ birth date is given in early sources as either 551 or 552, although the former is more commonly accepted. The exact status of his family at the time of his birth is obscured by later attempts to create for him an illustrious lineage. In the Analects, Confucius says that during his youth he was in humble circumstances and forced to acquire many different skills. It is clear that even though the fortunes of his family had declined, he was no commoner. Confucius unquestionably belonged to the aristocratic class known as the shih. By the time of Confucius most shih served as court officials, scholars, and teachers, and Confucius’ first occupation appears to have been as keeper of the Lu granary and later as supervisor of the fields, both low positions but consistent with his shih status.

**Career as a Teacher**

We do not know exactly when Confucius embarked on his teaching career, but it does not appear to have been much before the age of 30. In 518 he may have served as tutor to one of the prominent clans of Lu, the Meng, who wished their sons to be educated in the li, or ritual. He is alleged to have journeyed to Loyang that year to instruct himself in the traditional Chou ritual. Here he is said to have met the famous Taoist teacher Lao Tzu, who reportedly bluntly rebuked Confucius for his stuffiness and arrogance. This story is undoubtedly apocryphal and belongs to the corpus of anti-Confucian lore circulated by the Taoist school.

The nominal head of state in Lu at this time was a duke (kung), but the actual power lay in the hands of three clans: the Meng, Shu, and Chi. The most powerful of the three in Confucius’ time was the Chi, which was frequently in conflict with the ducal house and the other clans. In 517 Duke Chao of Lu took prisoner the prime minister, Chi P’ing-tzu, and was immediately attacked by the other two clans. The duke fled to the neighboring state of Ch’i, Confucius apparently felt a certain loyalty to the duke and fled with him. There are a number of stories about Confucius’ adventures in Ch’i, but most of them appear spurious.

Confucius eventually returned to Lu; one suggested date is 515. For several years after his return he does not appear to have accepted a governmental position and instead spent most of his time studying and teaching. He gathered around him a large number of students. Although we can only guess at the exact curriculum of the school, it undoubtedly included instruction in ritual, music, history, and poetry.

In 510 Duke Chao died without ever having returned to Lu, and the Chi clan set up another member of the ducal house as Duke Ting. Shortly thereafter, in 505, a swashbuckling adventurer named Yang Hu, who had been a supporter of the Chi family, rebelled and seized power in Lu.

The clans were able to gather enough strength to expel Yang Hu from Lu in 501, but at the same time another military commander, Kung-shan Fu-jao, gained control of the fortified city of Pi, which was the fief of the Chi clan. Kung-shan Fu-jao issued an invitation to Confucius to join his government. The Analects records that Confucius was tempted to accept the offer, and only after being rebuked by his disciple Tzu-lu, who was in the employ of the Chi clan, did the master reluctantly decline. The decision to violate his own principles and serve a man in open revolt against the constituted authority of his state is a good indication of Confucius’ intense desire to obtain a position, no matter how compromising, from which to implement his ideas.

**Political Career**

Confucius finally did obtain the post he wanted in 501, this time with the legitimate government of Lu.
He first served as magistrate of the city of Chang-tu and later was promoted to the important position of minister of justice (ssu-k'ou). There are a number of stories about Confucius' actions in this office, most of which cannot be verified. One of these stories concerns Confucius' role at the Chia-ku convention in the state of Ch'i, a meeting between the dukes of Ch'i and Lu in 500. At least five sources record that Confucius was responsible for thwarting a plot by Ch'i to kidnap the Duke of Lu and was able to force Ch'i to restore territory it had seized from Lu. Scholars have questioned the historicity of Confucius' participation in this event, but the wide currency of the account must indicate some grain of truth.

Confucius probably owed his position in Lu to the influence of the Chi family, which was still the dominant power. We know from the Analects that he was on especially good terms with Chi K'ang-tzu, the son of the head of the Chi clan. Several of Confucius' disciples were employed by the Chi family. Because of his close association with the Chi clan, which in effect was a usurper of the ducal power, it might be supposed that Confucius had compromised his integrity. However, Confucius and his disciples actually seem to have worked to reduce the power of the three clans. For example, in 498 they were able to extract promises from the Chi, Meng, and Shu families to demolish their fortified cities, which were their bases of power. The Chi and Shu actually had begun preparations to dismantle their cities when the Meng reneged and the plan was abandoned. Nevertheless, the episode is a clear example of Confucius' interest in restoring legitimacy in Lu.

**His Travels**

It must have been shortly after the failure of his plan to dismantle the fortified cities that Confucius decided to leave his home in Lu and embark on a long journey throughout eastern China. The traditional explanation for Confucius' decision to leave is that Ch'i believed that if Confucius continued to advise the Duke of Lu, Lu would become more powerful and eventually dominate the other states around it. Therefore, in order to distract the duke from his political duties, Ch'i sent him 80 beautiful dancers and 30 teams of horses. The duke accepted them and became so engrossed that he did not hold court for 3 days, which so incensed Confucius that he resigned his post. This story clearly is a fabrication designed to disguise a less noble motive for Confucius' departure, namely, pressure from the clans, who must have been alarmed by Confucius' attempt to reduce their power.

Confucius left Lu accompanied by several of his disciples, including the former soldier Chung Yu (Tzu-lu) and Yen Hui, his favorite. They wandered throughout the eastern states of Wei, Sung, and Ch'en and at various times had their lives threatened. Confucius was almost assassinated in Sung by one Huan T'ui. On another occasion he was mistaken for the adventurer Yang Hu and was arrested and held in confinement until his true identity became known.

Confucius was received with great respect by the rulers of the states he visited, and he even seems to have received occasional emoluments. He spent much of his time developing and expounding his ideas on the art of government, as well as continuing his teaching. He acquired a large following, and the solidification of the Confucian school probably occurred during these years of exile. Not all of his disciples followed him on his travels, and several of them actually returned to Lu and assumed positions with the Chi clan. It may have been through their influence that in 484 Confucius was invited back to Lu.

**Final Years**

Confucius was warmly received in Lu, but there is no indication that he was given a responsible position. Little is known about his last years, although this would have been a logical time for him to work
on the many texts and documents he is reputed to have acquired on his journey. Much of his time was devoted to teaching, and he seems to have remained more or less aloof from political affairs.

This was an unhappy period for Confucius. His only son died about this time; his favorite disciple, Yen Hui, died the very year of his return to Lu; and in 480 Tzu-lu was killed in battle. All these losses Confucius felt deeply, and his despair and frustration must have been intensified by the realization that his political ideas had found no sympathetic ear among the rulers of his own state. Confucius died in 479. His disciples conducted his funeral and observed a mourning period for him.

Confucius' Writings

Confucius has been considered responsible for editing and writing some of the most important works in the Chinese tradition. According to relatively early sources, he arranged the classical anthology of early Chinese poetry, the Book of Odes (Shih ching), into its present order and discarded spurious material from a historical work known as the Book of Documents (Shu ching). He is also credited with writing parts of the great divination classic, the Book of Changes (I ching), and the book of ritual, the Records of Rites (Li chi). His name is also associated with a work on music, the Book of Music (Yüeh ching), which is now lost. Few modern scholars accept any of these traditional attributions, and Confucius' connection with these books is simply another aspect of the traditional Confucian myth.

One work that cannot be dismissed so easily, however, is the Spring and Autumn Annals (Ch’un ch’iu), which is a chronological record of the reigns of the 12 dukes of Lu, beginning with the year 722 and ending in 479 B.C. As early as the philosopher Mencius (ca. 317-289 B.C.), Confucius has been credited with compiling or editing this work, which was claimed to contain hidden criticisms of many of the Lu rulers. Later Confucian scholars tried to discover these hidden criticisms, but most scholars now agree that the Spring and Autumn Annals is simply a dry chronicle, containing no hidden meanings, and in spite of Mencius's testimony, Confucius had nothing to do with it.

Confucius' Teachings

Although we cannot be certain that Confucius wrote any of the works attributed to him, it is still possible to know something about the general nature of his philosophy. Shortly after his death his disciples compiled a work known as the Lun y?/I>, commonly translated as the Analects but more accurately rendered as the Edited Conversations. This work consists of conversations between Confucius, his students, and an occasional ruler. The primary emphasis of the Lun y?/I> is on political philosophy. Confucius was concerned about the rampant immorality and amorality of much of the government of his time, and he spent much of his life trying to find a ruler who would accept his teaching that ethical considerations should be the guiding principle of government. Confucius taught that the primary task of the ruler was to achieve the welfare and happiness of the people of his state. To accomplish this aim, the ruler had first to set a moral example by his own conduct, and this example would in turn influence the people's behavior. Confucius rejected the use of a rigid legal system and believed instead that moral custom and voluntary compliance were the best ways of maintaining order in society.

Confucius considered the early years of the Chou dynasty as the embodiment of the perfect form of government. It was not the rulers of this period that he admired so much as the chief minister, Chou Tan, or the Duke of Chou. The Duke of Chou was known in early Chinese tradition as the founder of the state of Lu, and he was probably the chief culture hero in this state. Because Confucius came from Lu, some scholars have claimed that much of his teachings were simply a revival of this cult. It is certainly true that
he never claimed to be teaching original ideas but rather termed himself a "transmitter." Confucius was basically a humanist and one of the greatest teachers in Chinese history. His influence on his immediate disciples was profound, and they continued to expound his theories until, in the first Han dynasty (206 B.C.-A.D. 8), they became the basis of the state ideology.

Paul, St. (originally Saul of Tarsus DT1a ?) 10AD -- 65/7 AD (圣保罗)

Apostle to the Gentiles and important theologian of the early Christian Church, born of Jewish parents at Tarsus, Cilicia. He reputedly trained as a rabbi in Jerusalem, becoming a fervent Pharisee and persecutor of Christians. On his way to Damascus (AD c.33), he was converted to Christianity by a vision of Christ, and after several months in Nabatea began to preach the Christian message and undertake missionary journeys, first in Cyprus, Antioch of Pisidia, Iconium, Lystra, and Derbe. Around 49--51, he had to address an apostolic conference in Jerusalem on the disputed issue of how Gentiles and Jews were to be admitted to the Church (Gal 2.1--10; Acts 15.1--21), and a form of resolution was apparently reached which allowed him to continue his mission to the Gentiles, although a later dispute with Peter did arise in Antioch. ; The precise chronology of his missionary activities is confused, but other journeys took Paul, with Silvanus (Silas), to Asia Minor and through Galatia and Phrygia to Macedonia and Achaia, where in Corinth he was especially successful. An extensive mission was also undertaken in Ephesus, amid many difficulties, leading eventually to a final visit to Macedonia and Corinth. On his return to Jerusalem, he was apparently imprisoned for two years, following disturbances against him by the Jews. He was transferred to Caesarea and to Rome after appealing to Caesar; and according to later tradition, he was executed by Nero (although some traditions suggest that he was released and went to Spain). Thirteen New Testament letters are traditionally attributed to him, as well as some extracanonical works. Feast day 29 June.

Gutenberg, Johannes (Gensfleisch) 1400 -- 1468 (古腾堡，约翰尼斯)

Printer; regarded as the inventor of movable-type mechanical printing in Europe. Born Johann Gensfleisch zur Laden zum Gutenberg, circa 1400, in Mainz, Germany. Little is known of Gutenberg’s early life. The son of wealthy parents, he was probably apprenticed to a goldsmith and also learned the trade of gem cutting as a young man living in Mainz. Between 1428 and 1430, he moved to Strassburg (now Strasbourg, France) for political reasons, and would live there for almost 20 years.

It was in Strasbourg that Gutenberg most likely began the work that would eventually make him famous, though not in his lifetime, as the father of the printing press and one of the most influential people in the history of Western society. He realized that the traditional methods of handwriting manuscripts or even the early printing techniques of xylography (printing from woodcarvings) could not satisfy the great demand for printed material. For his method of mechanical printing, Gutenberg eventually combined features of such existing technologies as wine presses and textile and papermaking devices with a system of movable metal type, which consisted of over 300 characters. Each character was carved in soft metal, molded, and cast in a molten alloy of lead, antimony, and tin. This method of printing from movable type was used, without significant change, until the twentieth century.

It is not known exactly how far Gutenberg got in his work with movable type by the time he left Strasbourg. In late 1438, the heirs of one of his business partners sued him; they lost the suit, but the trial revealed that Gutenberg was working on a new invention, presumably the printing press, that he clearly wanted to keep secret. By late 1448, Gutenberg was back in Mainz, where he borrowed money from a
relative to continue his work. In 1450, he received a substantial loan from Johann Fust, a wealthy financier; Fust later loaned Gutenberg even more money.

Gutenberg most likely completed his printed masterpiece, the 42-Line Bible, by 1455 at the latest. The 42-Line Bible, like all of Gutenberg’s typographic productions, was never attributed to him during his lifetime, but it later became known as the Gutenberg Bible. Many of the details of Gutenberg’s work became known to historians through records of a lawsuit that Gutenberg lost against Fust and Peter Schöffer, a calligrapher and Fust’s future son-in-law. Records of the case, dated November 6, 1455, indicated that Gutenberg was the designer of the press. Though it has been estimated that the sale of the Bible would have produced many times the necessary sum owed to Fust by Gutenberg, it was inexplicably not counted among the latter’s assets at the trial.

The court awarded Fust control of the type for the Bible and for Gutenberg’s other major work, a Psalter (the traditional English term for a book of psalms), as well as at least some of Gutenberg’s other printing equipment. The first printed book in Europe to bear the name of its printer was a fine Psalter produced in August 1457 by Fust and Schöffer. Most historians agree that it was Gutenberg who had most likely developed the techniques used to produce the Psalter before he lost control of his equipment in November 1455. Strong evidence to support Gutenberg’s claim to the invention of typograhpy came not only from the trial records but from Schöffer’s son and Fust’s grandson, Johann Schöffer, who wrote in 1505 that “the admirable art of typography was invented by the ingenious Johan Gutenberg at Mainz in 1450. (From 1509 on, Johann Schöffer became one of Gutenberg’s chief detractors, however, claiming that his own father and grandfather were solely responsible for the invention.)

Gutenberg himself was forced to start over. He is believed to have produced at least several further works over the next decade, including the Catholicon, an encyclopedia. In January 1465, Gutenberg began receiving a pension from the archbishop of Mainz, including an annual measure of food and clothing and exemption from certain taxes. He died on February 3, 1468, and was buried in Mainz’s Franciscan church.

**Columbus, Christopher** 1451 -- 1506（哥伦布，克里斯托弗）

Italian mariner and navigator; widely believed to be the first European to sail across the Atlantic Ocean and successfully land on the American continent. Born Cristoforo Colombo, between August and October 1451, in Genoa, Italy. Columbus was the eldest son of Domenico Colombo, a wool-worker and small-scale merchant, and his wife, Susanna Fontanarossa; he had two younger brothers, Bartholomew and Diego. He received little formal education and was a largely self-taught man, later learning to read Latin and write Castilian.

Columbus began working at sea early on, and made his first considerable voyage, to the Aegean island of Chios, in 1475. A year later, he survived a shipwreck off Cape St. Vincent and swam ashore, after which he moved to Lisbon, Portugal, where his brother Bartholomew was living. Both brothers worked as chartmakers, but Columbus already nurtured dreams of making his fortune at sea. In 1477, he sailed to England and Ireland, and possibly Iceland, with the Portuguese marine, and he also bought sugar in Madeira for a Genoese firm.

In 1479, Columbus married Felipa Perestello e Moniz, from an impoverished noble Portuguese family. Their son, Diego, was born in 1480. Felipa died in 1485, and Columbus later began a relationship with Beatriz Enriquez de Harana of Cordoba, with whom he had a second son, Ferdinand. (Columbus
and Beatriz never married, but he provided for her in his will and legitimized Ferdinand, in accordance with Castilian law.

By the mid-1480s, Columbus had become focused on his plans of discovery, chief among them the desire to discover a westward route to Asia. In 1484, he had asked King John II of Portugal to back his voyage west, but had been refused. The next year, he went to Spain with his young son, Diego, to seek the aid of Queen Isabella of Castile and her husband, King Ferdinand of Aragon. Though the Spanish monarchs at first rejected Columbus, they gave him a small annuity to live on, and he remained hopeful of convincing them. In January of 1492, after being twice rebuffed, Columbus obtained the support of Ferdinand and Isabella. The favorable response came directly after the fall of Granada, the last Moorish stronghold in Spain, which led Spanish Christians to believe they were close to eliminating the spread of Islam in southern Europe and beyond. Christian missionary zeal, as well as the desire to increase Spanish prominence in Europe over that of Portugal and the desire for gold and conquest, were the primary driving forces behind Columbus’ historic voyage.

On August 3, 1492, the fleet of three ships—the Niña, the Pinta, and the Santa María—set forth from Palos, on the Tinto River in southern Spain. After spending nearly a month in the Canary Islands, off the mainland of northwest Africa, the ships continued west, following the parallel of Gomera. According to records of the voyage, weather remained fair throughout. The first sighting of land came at dawn on October 12. (Though Columbus claimed that he himself, on the Niña, was the first to see land, later evidence showed that the sighting was made from the Pinta.) The place of the first Caribbean landfall was most likely modern San Salvador, or Watling Island, in the Bahamas.

Thinking he had reached the East Indies, Columbus referred to the native inhabitants of the island as “Indians,” a term that was ultimately applied to all indigenous peoples of the New World. The three ships sailed among other Bahama islands and landed at Cuba, which Columbus convinced himself was the mainland of great Cathay (China). There was little gold there, and his exploration continued by sea to Aytí (Haiti) on December 6, which Columbus renamed La Isla Española, or Hispaniola. He seems to have thought Hispaniola was Cipango (Japan); in any case, the land was rich with gold and other natural resources, and allowed Columbus to return to Spain in the spring of 1493 with riches enough to convince his sovereigns of his success.

After a difficult journey back to Europe, Columbus paid a visit to King John II of Portugal, which prompted suspicion that he had collaborated with Spain’s enemy. He subsequently appeared before Isabella and Ferdinand in Barcelona, displaying gold, exotic birds, herbs and spices, and even human captives that he had brought from the New World. The sovereigns were easily persuaded to fund a second voyage—this time, at least 17 ships and 1,300 men set sail from Cádiz on September 25, 1493. En route to Hispaniola and Navidad, the settlement he had founded there, Columbus and his fleet entered the West Indies near Dominica (which he named) and proceeded past Guadeloupe and other Lesser Antilles before reaching Boringué (modern Puerto Rico).

Upon reaching Navidad, Columbus found the settlement destroyed and the Spanish settlers dead, victims of strong native resistance against their colonial tactics. After building more fortified settlements, including one named La Isabela, in honor of the queen, Columbus declared himself governor of Hispaniola, intending it to become a trading post for European settlers to conduct business with the rich Oriental empires he expected to find. After searching the Cuban coastline and Jamaica for gold,
Columbus had decided that Hispaniola was the richest source of gold and other spoils.

In February 1494, 12 ships returned to Spain from La Isabela, commanded by Columbus’ associate, Antonio de Torres. Two more of his subordinates, Alonso de Ojeda and Pedro Margarit, led a campaign of violence against the native inhabitants of Hispaniola, in revenge for the murder of their comrades at Navidad. They killed and captured many natives, taking them as slaves, seemingly with the full knowledge and approval of Columbus. Throughout the next two years, the Spaniards continued their resolute conquest and colonization of Hispaniola.

On March 10, 1496, Columbus set sail for Spain, leaving his two brothers, Bartholomew and Diego, in charge of Hispaniola. When he reached Cádiz, he found Spain at war with France and his benefactors even more eager to acquire gold and other riches from the New World. In command of six ships, three with explorers and three with provisions for settlement on Hispaniola, Columbus set sail for a third westward crossing on May 30, 1498. The first land sighting was at Trinidad, which Columbus named in honor of the Holy Trinity.

When the expedition arrived back at Hispaniola, he found it in disarray, with a revolt mounting against his brothers led by the alcalde (mayor) of La Isabela, Francisco Roldán. The chiefs of the indigenous tribes in Hispaniola, as well as a number of Spaniards, were incensed by Bartholomew Columbus’ reorganization of the gold production process, which favored certain Spaniards over others and exploited the native labor force. As Columbus tried to restore order, sometimes resorting to hangings, Roldán and his fellow opposition leaders sent so many letters of complaint against Columbus and his brothers back to Castile that the rulers sent the Spanish chief justice, Francisco de Bobadilla, to Hispaniola. Bobadilla took Columbus and his brothers into his custody and sent all three men back to Spain in shackles.

Ferdinand and Isabella later ordered Columbus’ release, and he appeared before them at Granada in December 1500. The monarchs allowed that Columbus was a superior mariner and navigator, but questioned his abilities to govern. Another man was appointed governor of Hispaniola, and Columbus was given support and permission to begin a fourth expedition. As he prepared for the voyage, which would be his last, Columbus revealed in his writings an even stronger mystical vision of himself as the bearer of Christianity into worlds unknown, a vision that had contrasted sharply with the realities of conquest and colonization in Hispaniola.

He set sail from Cádiz on May 9, 1502, with four ships, arriving at Santo Domingo on Hispaniola on June 29. Continuing on down past Jamaica, the southern shore of Cuba, Honduras, and the Mosquito Coast of Nicaragua, Columbus showed navigation skill in a voyage as difficult as his first crossing of the Atlantic. He was searching for the strait to India, but obviously did not find it, and was eventually forced to turn back. En route to Hispaniola, however, his ships were unable to make the distance and had to be beached on the coast of Jamaica in June of 1503. Columbus and his crew spent a year in Jamaica before returning to Spain on a ship sent from Hispaniola on November 7, 1504. Upon arriving there, Columbus learned that Queen Isabella, long his most sympathetic supporter, was on her deathbed. She died on November 26, 1504.

By the end of his final voyage, Columbus’ health had deteriorated; he was suffering from arthritis as well as the aftereffects of a bout with malaria. With a small portion of the gold brought from Hispaniola, Columbus was able to live relatively comfortably in Seville for the last year of his life. He was emotionally
diminished, however, and felt that the Spanish monarchs had failed to live up to their side of the agreement and provide him with New World property and gold, especially after Isabella’s death. Columbus followed the court of King Ferdinand from Segovia to Salamanca to Vallodid seeking redress, but was rejected. He died in Vallodid on May 20, 1506. His remains were later moved to the Cathedral of Santo Domingo in Hispaniola, where they were laid with those of his son Diego. They were returned to Spain in 1899 and interred in Seville Cathedral.

The debate over Columbus’ character and legacy has continued into the twenty-first century, revived in 1992 with the celebration of the quincentenary of his first voyage to the New World. Though the United States celebrates a national holiday in his honor (on the Monday closest to October 12, the date of the first landfall in 1492), much more attention has been paid in recent years to the Spanish explorers’ treatment of the Native American peoples, and the word “discovery” has been replaced by “encounter” when used to describe Columbus’ achievements in regard to the Americas. Columbus went to his grave believing he had reached the shores of Cathay, and that he was a divine missionary, ordained by God to spread Christianity into the New World. In modern society, many have made Columbus out to be a villain and a symbol for all that is exploitative and predatory about the colonization of the Americas by Europe. The true Columbus, it is certain, lies somewhere in the middle.

Einstein, Albert 1879–1955 (爱因斯坦)

Physicist. Born March 14, 1879, in Ulm, Germany. Einstein grew up in Munich, where his father, Hermann, owned a small electrochemical factory. The strict discipline of German schools did not appeal to the young Einstein, who was a poor student but conducted his own studies of philosophy, math, and science. In 1895, after Hermann’s business failed, the Einstein family moved to Milan, Italy. Albert stayed behind to continue his studies, but soon left school with no diploma to rejoin his family. He continued his independent studies, teaching himself calculus and higher scientific principles. After failing his first entrance examination to the prestigious Swiss Federal Institute of Technology in Zurich, Einstein gained admittance in 1896 and began his four years studying physics and mathematics.

After his graduation in 1900, Einstein became a naturalized Swiss citizen in 1901 and got a job as a technical assistant at the Swiss patent office in Bern. In 1903, he married his university sweetheart, Mileva Maric. While employed at the patent office, Einstein continued his own investigations in theoretical physics. In 1905, he published an article entitled “A New Determination of Molecular Dimensions?in the well-known German physics monthly Annalen der Physik. The article earned him a Ph.D. from the University of Zurich. That same year, Einstein published four other papers in Annalen, including his revolutionary theory that light exists in both waves and particles. His major proposal of 1905, however, was his special theory of relativity, which dismissed the traditional notion that time and space were absolute concepts, suggesting instead that both time and space vary with circumstances.

Einstein worked as a professor of physics at universities in Prague and Zurich before moving to Berlin in 1914 with his wife and two sons, Hans Albert and Eduard. He took a post at the Prussian Academy of Sciences, where he could continue his research and lecture at the University of Berlin. Unhappy with life in Berlin, his wife Mileva returned to Switzerland with their sons near the beginning of World War I; their separation led to a divorce in 1919. Einstein married his second cousin, Elsa Lowenthal, later that year.

In 1915, Einstein perfected his general theory of relativity, summing up his theory with the
mathematical equation $E=mc^2$ (energy equals mass times the speed of light squared). His findings on relativity were published in The Principle of Relativity, Sidelights on Relativity, and The Meaning of Relativity. In November 1919, the Royal Society of London announced that their experiment conducted during the solar eclipse of that year had confirmed the predictions Einstein made in his general theory of relativity. The implications of this announcement shook the world of science and earned Einstein the international acclaim he had long deserved.

Controversy continued to surround his scientific theories, as well as his political convictions, which became more pronounced as his fame increased. In the years following WWI, he received a great deal of criticism within Germany for his theories, as well as his active support of pacifism (including the League of Nations), liberalism, and Zionism. He traveled a great deal to deliver lectures on relativity, touring Europe, Asia, the Middle East, and South America. Einstein first toured the United States in the spring of 1921, in order to raise money for the Palestine Foundation Fund.

In 1921, Einstein was awarded the Nobel Prize in physics. He was cited by the prize committee “for your photoelectric law and your work in the field of theoretical physics.” There was no mention of his still-controversial work with relativity, which would become his most enduring legacy. From the 1920s on, Einstein worked to unify concepts of gravity and electromagnetism into a “grand unified theory of physics,” or a single mathematical formula to relate the universal properties of matter and energy—a quest that would remain unfulfilled.

Meanwhile, Einstein’s legendary pacifism only strengthened during the years before World War II. He was exceedingly distressed by the failure of the 1932 World Disarmament Conference in Geneva, and later began a famous correspondence with Sigmund Freud about man’s inherent love of war. In 1933, just after Adolf Hitler became chancellor of Germany, Einstein renounced German citizenship and emigrated to America, where he was offered a full-time position at the newly-founded Institute for Advanced Study in Princeton, New Jersey.

Early on, Einstein recognized the serious threat to world security posed by Hitler and Nazism. Despite his history of pacifism, he publicly urged European nations to ready themselves for defense. Realizing the implications of a possible Axis victory, he urged President Franklin D. Roosevelt to step up nuclear fission research in the U.S. Though he played no direct part in the development of the atomic bomb and was publicly horrified by its use in Japan in 1945 and its implications for the future of war, his name and research were inextricably linked to the dawning of the age of atomic power.

After Elsa’s death in 1936, Einstein lived alone in Princeton, throwing himself even more completely into political activism. He joined other scientists in a push to prevent future use of atomic weapons, proposing the establishment of a system of world government that would provide “the binding authority necessary for world security.” He also denounced McCarthyism and called for an end to bigotry and racism, and was widely criticized for his liberal views among the anxious age of the Cold War. He died on April 18, 1955, at the age of 76.

**Pasteur, Louis** 1822 -- 1895 (巴斯德，路易斯)

Chemist and biologist, famous for his germ theory and for the development of vaccines. Born December 27, 1822 in the small town of Dole, the son of a tanner. He studied in the college of Arbois and at Besancon, where he graduated in arts in 1840. As a student preparing for the prestigious Ecole Normale Superieure of Paris, he did not doubt his ability. When he gained admittance by passing
fourteenth on the list, he refused entry; taking the examination again, he won third place and accepted. For his doctorate his attention was directed to the then obscure science of crystallography. This was to have a decisive influence on his career.

Under special dispensation from the minister of education, Pasteur received a leave of absence from his duties as professor of physics at the lycée of Tournon to pursue research on the optical properties of crystals of the salts of tartrates and paratartrates, which had the capacity to rotate the plane of polarized light. He prepared 19 different salts, examined these under a microscope, and determined that they possessed hemihedral facets. However, the crystal faces were oriented differently; they were left-handed or right-handed, thus having the asymmetrical relationship of mirror images. Furthermore, each geometric crystal variety rotated the light in accordance with its structure, while equal mixtures of the left- and right-handed crystals had no optical activity inasmuch as the physical effects canceled each other. Thus he demonstrated the phenomenon of optical isomers.

Pasteur was elated. He repeated his experiment under the exacting eyes of Jacques Biot, the French Academy's authority on polarized light who had brought Eilhardt Mitscherlich's work to Pasteur's attention. The confirmation was complete to the last exacting detail, and Pasteur, then 26, became famous. The French government made him a member of the Legion of Honor, and Britain's Royal Society presented him with the Copley Medal.

In 1852 Pasteur accepted the chair of chemistry at the University of Strasbourg. Here he found an opportunity to pursue another dimension of crystallography. It had long been known that molds grew readily in solutions of calcium paratartrate. It occurred to him to inquire whether organisms would show a preference for one isomer or another. He soon discovered that his microorganism could completely remove only one of the crystal forms from the solution, the levorotary, or left-handed, molecule.

In 1854, though only 31 years old, Pasteur became professor of chemistry and dean of sciences at the new University of Lille. The course of his activities is displayed in the publications which he gave to the world in the next decades: Studies on Wine (1866), Studies on Vinegar (1868), Studies on the Diseases of Silkworms (1870), and Studies on Beer (1876).

Soon after his arrival at Lille, Pasteur was asked to devote some time to the problems of the local industries. A producer of vinegar from beet juice requested Pasteur's help in determining why the product sometimes spoiled. Pasteur collected samples of the fermenting juices and examined them microscopically. He noticed that the juices contained yeast. He also noted that the contaminant, amyl alcohol, was an optically active compound, and hence to Pasteur evidence that it was produced by a living organism ("living contagion").

Pasteur was quick to generalize his findings and thus to advance a biological interpretation of the processes of fermentation. In a series of dramatic but exquisitely planned experiments, he demonstrated that physical screening or thermal methods destroyed all microorganisms and that when no contamination by living contagion took place, the processes of fermentation or putrefaction did not take place either. "Pasteurization" was thus a technique that could not only preserve wine, beer, and milk but could also prevent or drastically reduce infection in the surgeon's operating room. Another by-product of Pasteur's work on fermentation was his elucidation of the fact that certain families of microbes require oxygen whereas others do not. This insight divided the scientific community, and it was only in 1897, two years after his death, that the dispute was resolved.
In 1865 Pasteur was called upon to assist another ailing industry of France—silk manufacture—which was being ruined by an epidemic among silkworms. He took his microscope to the south of France and in an improvised laboratory set to work. Four months later he had isolated the pathogens causing the disease, and after three years of intensive work he suggested the methods of bringing it under control. Pasteur's scientific triumphs coincided with personal and national tragedy. In 1865 his father died; and his two daughters were lost to typhoid fever in 1866. Overworked and grief stricken, Pasteur suffered a cerebral hemorrhage in 1868 which left part of his left arm and leg permanently paralyzed. Nonetheless, he pressed on, hardly with interruptions, on his study of silkworm diseases, already sensing that these investigations were but his apprenticeship for the control of the diseases of higher animals, including humans.

The Franco-Prussian War, with its trains of wounded, stimulated Pasteur to press his microbial theory of disease and infection on the military medical corps, winning grudging agreement to the sterilization of instruments and the steaming of bandages. The results were spectacular, and in 1873 Pasteur was made a member of the French Academy of Medicine—a remarkable accomplishment for a man without a formal medical degree.

Pasteur was now prepared to move from the most primitive manifestations of life, crystals and the simpler forms of life in the microbial world, to the diseases of the higher animals. The opportunity arose through a particularly devastating outbreak of anthrax, a killer plague of cattle and sheep in 1876/1877. The anthrax bacillus had already been identified by Robert Koch, and Pasteur now set about proving that the agent of disease was precisely the living organism and not a related toxin. He diluted a solution originally containing a source of infection of anthrax by a factor of 1 part in 100100. Even at this enormous dilution, the residual fluid carried death, thus proving that it was the constantly multiplying organism that was the source of the disease.

In 1881 Pasteur had convincing evidence that gentle heating of anthrax bacilli could so attenuate the virulence of the organism that it could be used to inoculate animals and thus immunize them. In a dramatic demonstration of this procedure, carried out with the whole of France as witness, Pasteur inoculated one group of sheep with the vaccine and left another untreated. Upon injection of both groups with the bacillus, the untreated died; the others lived, and thus a scourge that had crippling economic effects was brought under control.

Pasteur's ultimate triumph came with the conquest of rabies, the disease of animals, particularly dogs, which gives rise to the dreaded hydrophobia of humans. The problem here was that the causative agent was a virus, hence an entity not capable of growth in the scientists' broth which nurtured bacteria. Pasteur worked for five years in an effort to isolate and culture the pathogen. Finally, in 1884, in collaboration with other investigators, he perfected a method of cultivating the virus in the tissues of rabbits. The virus could then be attenuated by exposing the incubation material to sterile air over a drying agent at room temperature. A vaccine could then be prepared for injection. The success of this method was greeted with jubilation all over the world. Animals could now be saved, but the question arose as to the effect of the treatment on human beings. In 1885, a nine-year-old boy, Joseph Meister, was brought to Pasteur. He was suffering from 14 bites from a rabid dog. With the agreement of the child's physician, Pasteur began his treatment with the vaccine. The injections continued over a 12-day period, and the child recovered.
In 1888, a grateful France founded the Pasteur Institute, which was destined to become one of the most productive centers of biological study in the world. In the closing paragraphs of his inaugural oration, Pasteur said: “Two opposing laws seem to me now to be in contest. The one, a law of blood and death opening out each day new modes of destruction, forces nations always to be ready for the battle. The other, a law of peace, work and health, whose only aim is to deliver man from the calamities which beset him. The one seeks violent conquests, the other, the relief of mankind. The one places a single life above all victories, the other sacrifices hundreds of thousands of lives to the ambition of a single individual. The law of which we are the instruments strives even through the carnage to cure the wounds due to the law of war. Treatment by our antiseptic methods may preserve the lives of thousands of soldiers. Which of these two laws will prevail, God only knows. But of this we may be sure, science, in obeying the law of humanity, will always labor to enlarge the frontiers of life.”

Pasteur's seventieth birthday was the occasion of a national holiday. At the celebration held at the Sorbonne, Pasteur was too weak to speak to the delegates who had gathered from all over the world. His address, read by his son, concluded: "Gentlemen, you bring me the greatest happiness that can be experienced by a man whose invincible belief is that science and peace will triumph over ignorance and war. Have faith that in the long run ... the future will belong not to the conquerors but to the saviors of mankind."

On September 28, 1895, honored by the world but unspoiled and overflowing with affection, Pasteur died near Saint-Cloud in Paris. His last words were: "One must work; one must work. I have done what I could." He was buried in a crypt in the Pasteur Institute. There is a strange postscript to this story. In 1940 the conquering Germans came again to Paris. A German officer demanded to see the tomb of Pasteur, but the old French guard refused to open the gate. When the German insisted, the Frenchman killed himself. His name was Joseph Meister, the boy Pasteur had saved from hydrophobia so long ago.

Galileo Galilei 1564 – 1642 (伽利略)

Scientist, Author, Astronomer. Born February 15, 1564 in Pisa, the first child of Vincenzio Galilei, a merchant and musician and an abrasive champion of advanced musical theories of the day. The family moved to Florence in 1574, and that year Galileo started his formal education in the nearby monastery of Vallombrosa. Seven years later he matriculated as a student of medicine at the University of Pisa.

In 1583, while Galileo was at home on vacation, he began to study mathematics and the physical sciences. His zeal astonished Ostilio Ricci, a family friend and professor at the Academy of Design. Ricci was a student of Nicolo Tartaglia, the famed algebrist and translator into Latin of several of Archimedes' works. Galileo's life-long admiration for Archimedes started, therefore, as his scientific studies got under way. His new interest brought to an end his medical studies, but in Pisa at that time there was only one notable science teacher, Francisco Buonamico, and he was an Aristotelian. Galileo seems, however, to have been an eager disciple of his, as shown by Galileo's Juvenilia, dating from 1584, mostly paraphrases of Aristotelian physics and cosmology. Because of financial difficulties Galileo had to leave the University of Pisa in 1585 before earning his degree.

Back in Florence, Galileo spent 3 years vainly searching for a suitable teaching position. He was more successful in furthering his grasp of mathematics and physics. He produced two treatises which, although circulated in manuscript form only, made his name well known. One was La bilancetta (The Little Balance), describing the hydrostatic principles of balancing; the other was a study on the center of gravity
of various solids. These topics, obviously demanding a geometrical approach, were not the only evidence of his devotion to geometry and Archimedes. In a lecture given in 1588 before the Florentine Academy on the topography of Dante's Inferno, Galileo seized on details that readily lent themselves to a display of his prowess in geometry. He showed himself a perfect master both of the poet's text and of the incisiveness and sweep of geometrical lore.

Galileo's rising reputation as a mathematician and natural philosopher (physicist) gained him a teaching post at the University of Pisa in 1589. The three years he spent there are memorable for two things. First, he became exposed through reading a work of Giovanni Battista Benedetti to the "Parisian tradition" of physics, which originated during the 14th century with the speculations of Jean Buridan and Nicole Oresme at the University of Paris. This meant the breakaway point in Galileo's thought from Aristotelian physics and the start of his preoccupation with a truly satisfactory formulation of the impetus theory. Second, right at the beginning of his academic career, he showed himself an eager participant in disputes and controversies. With biting sarcasm he lampooned the custom of wearing academic gowns. The most he was willing to condone was the use of ordinary clothes, but only after pointing out that the best thing was to go naked.

The death of Galileo's father in 1591 put on his shoulders the care of his mother, brothers, and sisters. He had to look for a better position, which he found in 1592 at the University of Padua, part of the Venetian Republic. The 18 years he spent there were, according to his own admission, the happiest of his life. He often visited Venice and made many influential friends, among them Giovanfrancesco Sagredo, whom he later immortalized in the Dialogue as the representative of judiciousness and good sense.

In 1604 Galileo publicly declared that he was a Copernican. In three public lectures given in Venice, before an overflow audience, he argued that the new star that appeared earlier that year was major evidence in support of the doctrine of Copernicus. (Actually the new star merely proved that there was something seriously wrong with the Aristotelian doctrine of the heavens.) More important was a letter Galileo wrote that year to Father Paolo Sarpi, in which he stated that "the distances covered in natural motion are proportional to the squares of the number of time intervals, and therefore, the distances covered in equal times are as the odd numbers beginning from one." By natural motion, Galileo meant the unimpeded fall of a body, and what he proposed was the law of free fall, later written as \( s = \frac{1}{2}gt^2 \), where \( s \) is distance, \( t \) is time, and \( g \) is the acceleration due to gravity at sea level.

In 1606 came the publication of The Operations of the Geometrical and Military Compass, which reveals the experimentalist and craftsman in Galileo. In this booklet he went overboard in defending his originality against charges from rather insignificant sources. It was craftsmanship, not theorizing, which put the crowning touch on his stay in Padua. In mid-1609 he learned about the success of some Dutch spectacle makers in combining lenses into what later came to be called a telescope. He feverishly set to work, and on August 25 he presented to the Venetian Senate a telescope as his own invention. The success was tremendous. He obtained a lifelong contract at the University of Padua, but he also stirred up just resentment when it was learned that he was not the original inventor.

Galileo's success in making a workable and sufficiently powerful telescope with a magnifying power of about 40 was due to intuition rather than to rigorous reasoning in optics. It was also the intuitive stroke of a genius that made him turn the telescope toward the sky sometime in the fall of 1609, a feat which a dozen other people could very well have done during the previous four to five years. Science had few
luckier moments. Within a few months he gathered astonishing evidence about mountains on the moon, about moons circling Jupiter, and about an incredibly large number of stars, especially in the belt of the Milky Way. On March 12, 1610, all these sensational items were printed in Venice under the title Sidereus nuncius ("The Starry Messenger?", a booklet which took the world of science by storm.

Historians agree that Galileo's decision to secure for himself the position of court mathematician in Florence at the court of Cosimo II (the job also included the casting of horoscopes for his princely patron) reveals a heavy strain of selfishness in his character. He wanted nothing, not even a modest amount of teaching, to impede him in pursuing his ambition to become the founder of new physics and new astronomy. In 1610 he left behind in Padua his common-law wife, Marina Gamba, and his young son, Vincenzio, and placed his two daughters, aged 12 and 13, in the convent of S. Matteo in Arcetri. The older, Sister Maria Celeste as nun, was later a great comfort to her father.

Galileo's move to Florence turned out to be highly unwise, as events soon showed. In the beginning, however, everything was pure bliss. He made a triumphal visit to Rome in 1611. The next year saw the publication of his Discourse on Bodies in Water. There he disclosed his discovery of the phases of Venus (a most important proof of the truth of the Copernican theory), but the work was also the source of heated controversies. In 1613 Galileo published his observations of sunspots, which embroiled him for many years in bitter disputes with the German Jesuit Christopher Scheiner of the University of Ingolstadt, whose observations of sunspots had already been published in January 1612 under the pseudonym Apelles.

But Galileo's real aim was to make a sweeping account of the Copernican universe and of the new physics it necessitated. A major obstacle was the generally shared, though officially never sanctioned, belief that the biblical revelation imposed geocentrism in general and the motionlessness of the earth in particular. To counter the scriptural difficulties, he waded deep into theology. With the help of some enlightened ecclesiastics, such as Monsignor Piero Dini and Father Benedetto Castelli, a Benedictine from Monte Cassino and his best scientific pupil, Galileo produced essays in the form of letters, which now rank among the best writings of biblical theology of those times. As the letters (the longest one was addressed to Grand Duchess Christina of Tuscany) circulated widely, a confrontation with the Church authorities became inevitable. The disciplinary instruction handed down in 1616 by Cardinal Robert Bellarmine forbade Galileo to "hold, teach and defend in any manner whatsoever, in words or in print" the Copernican doctrine of the motion of the earth.

Galileo knew, of course, both the force and the limits of what in substance was a disciplinary measure. It could be reversed, and he eagerly looked for any evidence indicating precisely that. He obeyed partly out of prudence, partly because he remained to the end a devout and loyal Catholic. Although his yearning for fame was powerful, there can be no doubt about the sincerity of his often-voiced claim that by his advocacy of Copernicanism he wanted to serve the long-range interest of the Church in a world of science. The first favorable sign came in 1620, when Cardinal Maffeo Barberini composed a poem in honor of Galileo. Three years later the cardinal became Pope Urban VIII. How encouraged Galileo must have felt can be seen from the fact that he dedicated to the new pope his freshly composed Assayer, one of the finest polemics on the philosophy of science ever produced.

The next year Galileo had six audiences with Urban VIII, who promised a pension for Galileo's son, Vincenzio, but gave Galileo no firm assurance about changing the injunction of 1616. But before
departing for Florence, Galileo was informed that the Pope had remarked that "the Holy Church had never, and would never, condemn it [Copernicanism] as heretical but only as rash, though there was no danger that anyone would ever demonstrate it to be necessarily true." This was more than enough to give Galileo the necessary encouragement to go ahead with the great undertaking of his life.

Galileo spent six years writing his Dialogue Concerning the Two Chief World Systems. When the final manuscript copy was being made in March 1630, Father Castelli dispatched the news to Galileo that Urban VIII insisted in a private conversation with him that, had he been the pope in 1616, the censuring of Copernicanism would have never taken place. Galileo also learned about the benevolent attitude of the Pope's official theologian, Father Nicolo Riccardi, Master of the Sacred Palace. The book was published with ecclesiastical approbation on February 21, 1632.

Its contents are easy to summarize, as its four main topics are discussed in Dialogue form on four consecutive days. Of the three interlocutors, Simplicius represented Aristotle, Salviati was Galileo's spokesman, and Sagredo played the role of the judicious arbiter leaning heavily toward Galileo. The First Day is devoted to the criticism of the alleged perfection of the universe and especially of its superlunary region, as claimed by Aristotle. Here Galileo made ample use of his discovery of the "imperfections" of the moon, namely, of its rugged surface revealed by the telescope. The Second Day is a discussion of the advantages of the rotation of the earth on its axis for the explanation of various celestial phenomena. During the Third Day the orbital motion of the earth around the sun is debated, the principal issues being the parallax of stars and the undisturbed state of affairs on the surface of the earth in spite of its double motion. In this connection Galileo gave the most detailed account of his ideas of the relativity of motion and of the inertial motion. Bafflingly enough, he came to contradict his best-posited principles when he offered during the Fourth Day the tides as proof of the earth's twofold motion. The inconsistencies and arbitrariness that characterize his discourse there could not help undermine an otherwise magnificent effort presented in a most attractive style.

The Dialogue certainly proved that for all his rhetorical provisos Galileo held, taught, and defended the doctrine of Copernicus. It did not help Galileo either that he put into the mouth of the discredited Simplicius an argument which was a favorite with Urban VIII. Galileo was summoned to Rome to appear before the Inquisition. Legally speaking, his prosecutors were justified. Galileo did not speak the truth when he claimed before his judges that he did not hold Copernicanism since the precept was given to him in 1616 to abandon it. The justices had their point, but it was the letter of the law, not its spirit, that they vindicated. More importantly, they miscarried justice, aborted philosophical truth, and gravely compromised sound theology. In that misguided defense of orthodoxy the only sad solace for Galileo's supporters consisted in the fact that the highest authority of the Church did not become implicated, as the Catholic Rene Descartes, the Protestant Gottfried Wilhelm von Leibniz, and others were quick to point out during the coming decades.

The proceedings dragged on from the fall of 1632 to the summer of 1633. During that time Galileo was allowed to stay at the home of the Florentine ambassador in Rome and was detained by the Holy Office only from June 21, the day preceding his abjuration, until the end of the month. He was never subjected to physical coercion. However, he had to inflict the supreme torture upon himself by abjuring the doctrine that the earth moved.

On his way back to Florence, Galileo enjoyed the hospitality of the archbishop of Siena for some
five months and then received permission in December to live in his own villa at Arcetri. He was not supposed to have any visitors, but this injunction was not obeyed. Nor was ecclesiastical prohibition a serious obstacle to the printing of his works outside Italy. In 1634 Father Marin Mersenne published in French translation a manuscript of Galileo on mechanics composed during his Paduan period. In Holland the Elzeviers brought out his Dialogue in Latin in 1635 and shortly afterward his great theological letter to Grand Duchess Christina. But the most important event in this connection took place in 1638, when Galileo's Two New Sciences saw print in Leiden.

The first draft of the work went back to Galileo's professorship at Padua. But cosmology replaced pure physics as the center of his attention until 1633. His condemnation was in a sense a gain for physics. He had no sooner regained his composure in Siena than he was at work preparing for publication old, long-neglected manuscripts. The Two New Sciences, like the Dialogue, is in the Dialogue form and the discussions are divided into Four Days. The First Day is largely taken up with the mechanical resistance of materials, with ample allowance for speculations on the atomic constitution of matter. There are also long discussions on the question of vacuum and on the isochronism of the vibrations of pendulums. During the Second Day all these and other topics, among them the properties of levers, are discussed in a strictly mathematical manner, in an almost positivist spirit, with no attention being given to "underlying causes." Equally "dry" and mathematical is the analysis of uniform and accelerated motion during the Third Day, and the same holds true of the topic of the Fourth Day, the analysis of projectile motion. Galileo proved that the longest shot occurred when the cannon was set at an angle of 45 degrees. He arrived at this result by recognizing that the motions of the cannonball in the vertical and in the horizontal directions "can combine without changing, disturbing or impeding each other" into a parabolic path.

Galileo found the justification for such a geometrical analysis of motion partly because it led to a striking correspondence with factual data. More importantly, he believed that the universe was structured along the patterns of geometry. In 1604 he could have had experimental verification of the law of free fall, which he derived on a purely theoretical basis, but it is not known that he sought at that time such an experimental proof. He was a Christian Platonist as far as scientific method was concerned. This is why he praised Copernicus repeatedly in the Dialogue for his belief in the voice of reason, although it contradicted sense experience. Such a faith rested on the conviction that the world was a product of a personal, rational Creator who disposed everything according to weight, measure, and number.

Galileo spent his last years almost totally blind and he died on January 8, 1642.

Euclid (Gr Euclides) c. -- 250BC (欧几里得)

Greek mathematician who taught in Alexandria c.300 BC, and who was probably the founder of its mathematical school. His chief extant work is the 13-volume Elements, which became the most widely known mathematical book of Classical antiquity, and is still much used in geometry. The approach which obeys his axioms became known as Euclidean geometry.

Aristotle 384BC -- 322BC (亚里士多德)

Greek philosopher, scientist, physician. One of the greatest figures in the history of Western thought, Aristotle was born in Stagira, Macedonia. In 367 BC, he went to Athens, where he was associated with Plato's Academy until Plato's death in 347 BC. He then spent time in Asia Minor and in Mytilene (on Lesbos). In 342 BC he was invited by Philip of Macedon to educate his son, Alexander (later, the Great). He returned to Athens (335 BC) and opened a school (the Lyceum); his followers were called Peripatetics,
supposedly from his practice of walking up and down restlessly during his lectures. After Alexander's death (323 BC), there was strong anti-Macedonian sentiment in Athens; Aristotle was accused of impiety and, perhaps with Socrates' fate in mind, escaped to Chalcis in Euboea, where he died the next year.

Aristotle's writings represented an enormous, encyclopedic output over virtually every field of knowledge: logic, metaphysics, ethics, politics, rhetoric, poetry, biology, zoology, physics, and psychology. The bulk of the work that survives actually consists of unpublished material in the form of lecture notes or students' textbooks; but even this incomplete corpus is extraordinary for its range, originality, systematization, and sophistication.

His work exerted an enormous influence on mediaeval philosophy (especially through St Thomas Aquinas), Islamic philosophy (especially through Averroës), and indeed, on the entire Western intellectual and scientific tradition. The works most read today include Metaphysics, Nicomachean Ethics, Politics, Poetics, De anima and the Organon (treatises on logic).

Moses  c. 1250BC --（摩西）

Major character of Israelite history, portrayed in the Book of Exodus as the leader of the deliverance of Hebrew slaves from Egypt and the recipient of the Ten Commandments at Mt Sinai. In Exodus, stories about his early life depict his escape from death as an infant by being hidden in the bulrushes, his upbringing in the Egyptian court, his flight to Midian, and his divine call to lead the Hebrews out of Egypt. Stories of this deliverance describe Moses predicting a series of miraculous plagues designed to persuade the Pharaoh to release the Hebrews, the Passover narrative, and the miraculous escape led by Moses through the "sea of reeds'. Traditions then describe Moses' leadership of the Israelites during their 40 years of wilderness wandering, and his death E of the Jordan R before the Hebrews entered Canaan, the Promised Land. He was traditionally considered the author of the five books of the Law, the Pentateuch of the Hebrew Bible, but this is doubted by modern scholars.

Darwin, Charles (Robert)  1809 -- 1882 （达尔文，查尔斯）

Naturalist; best known as the discoverer of natural selection. Born February 12, 1809 in Shrewsbury, England, at almost exactly the same hour as Abraham Lincoln. Darwin's father was a doctor; his mother was the daughter of Josiah Wedgwood, the founder of the famous pottery firm. His grandfather (already dead) was a famous botanist, Erasmus Darwin. Darwin's mother died when he was eight years old. He was not a very successful student, but as a teenager he became interested in natural science and started various collections. He went to Edinburgh University to study medicine but did not do well. He transferred to Cambridge University with the idea of studying theology and becoming a clergyman. There he met Professor John Henslow, a botanist, who became his mentor and persuaded him to study geology. He also read Alexander von Humboldt's book, A Personal Narrative, about his travels in South America, which greatly inspired him.

Darwin got his B.A. degree from Cambridge in June 1831. During the summer he traveled with a geology professor to study rock formations in Wales. On his return to Shrewsbury on August 29, he found a letter waiting for him from Henslow. Henslow had recommended Darwin for a job as naturalist on board a Royal Navy ship, the Beagle, under the command of Captain Robert Fitzroy. The ship was going on a long trip to survey the southern coasts of South America. Darwin's father was initially opposed because he felt that this would keep him from starting his career in the church. With the help of his Wedgwood relatives, Darwin was able to get his father's permission.
The Beagle left England on December 27, 1831. It was a small ship, only 90 feet long, with a crew of 74. Darwin's laboratory was a small space at the end of the chartroom, where he also had his hammock for sleeping. Not only was his space cramped, but Darwin suffered miserably from seasickness every day that the ship was at sea. He tried to remedy this by spending as much time ashore as possible and often traveled overland to meet up with the ship at another port.

From England the Beagle sailed to the Cape Verde Islands and then to the Brazilian port of Bahia, where it arrived on February 29, 1832. Darwin spent much of his time there collecting specimens from the surrounding forests. He also got into a violent quarrel with Fitzroy on the subject of slavery (a major question in Brazil at the time) to which Darwin was adamantly opposed. Reaching Rio de Janeiro in early April, Darwin met an Irishman and traveled with him by horseback for seven days to his coffee plantation in the interior. Along the way, he collected specimens of the teeming insect life.

In July and August 1832 Darwin and the Beagle were in Montevideo in Uruguay. During this first visit, the ship's crew did not have many opportunities to go ashore because of civil unrest. On August 19, the Beagle headed south to begin surveying the coast of Patagonia in southern Argentina. On September 23 near Bahia Blanca, Darwin made a highly significant discovery — the bones of "numerous gigantic extinct Quadrupeds." There were remains of several different species, none of which existed any longer, and they were covered with seashells. The fact that these creatures had been alive "whilst the sea was peopled with most of its present inhabitants" was an important revelation.

In January 1833, the Beagle sailed into the Beagle Channel south of the large island of Tierra del Fuego. It was hit by a storm that lasted 24 days and at one point almost overturned the ship. Darwin was seasick for most of the time. The aim in going to Tierra del Fuego was to return three native Fuegians that Fitzroy had taken on board during a previous voyage. With them went a missionary, sent to convert the Fuegians to Christianity. On their arrival, one of the Fuegians did not want to return home, and the ship had to return a week later to pick up the missionary who had been threatened with his life by the Native Americans on the island. Soon after, they almost lost the ship's boats when a glacier "calved" and created giant waves that almost washed the boats out to sea.

In March and April 1833 the Beagle spent five weeks in the Falkland Islands, which had just been claimed by Great Britain. It spent the southern winter in the harbor in Montevideo. In August 1833 Fitzroy left Darwin ashore at the little town of Carmen de Patagones while the ship carried out routine surveying chores. Darwin rode overland to Bahia Blanca where he re-examined the fossil remains and thought about their significance. By the time he left on September 8, 1833 he had begun to doubt the accepted view that the species were unchangeable and had existed in their current form ever since the Creation. His entire outlook on the nature of life had changed. He was careful, however, not to share his views with Fitzroy, who remained a firm "Creationist" all his life.

From Bahia Blanca Darwin traveled north across the Argentine pampas (plains) accompanied by gauchos (cowboys) who hunted with bolas and lazos (a kind of weighted lasso). Along the way he met the Argentine dictator, Juan Manuel Rosas, who was engaged in a war of extermination against the Native Americans of the pampas. He saw flocks of rheas, a form of ostrich, which were flightless but could outrun most horses. Darwin found the remains of an unknown species of rhea that he sent back to England and which was named after him?rhea darwinii.

After reaching Buenos Aires and resting a few days at the home of an English merchant, Darwin
traveled up the Parana River to the port city of Santa Fe, where he saw some more fossils. He then made a trip from Mercedes to Montevideo in Uruguay, where he met up with the Beagle on December 6, 1833. In March 1834, after having visited the Falkland Islands once again, the Beagle went back to Tierra del Fuego where they met up with one of the returned Fuegians. In April they sailed up the coast of Patagonia, putting into the mouth of the Santa Cruz River to carry out some repairs.

On April 18, 1834 Fitzroy and Darwin with 23 men and three whaleboats set off on a three-week journey of exploration up the Santa Cruz River. They saw continual signs of Native Americans but never met up with any in the cold desert region of southern Patagonia. They traveled to the foothills of the Andes and came within a few miles of the river's source at Lago Argentino without realizing it. Along the way, Darwin shot a condor that had a wing span of eight feet. To Darwin's disappointment they were forced to turn back because of low supplies. The others wished not to, but Darwin remained cheerful: "Almost every one is discontented with this expedition, much hard work, and much time lost and scarcely anything seen or gained ... To me the cruise (sic) has been most satisfactory, from affording so excellent a section of the great tertiary formations of Patagonia."

At the end of May 1834 the Beagle entered the Straits of Magellan for the last time and then exited into the Pacific. Stormy weather made sailing slow, and they put in on Chiloe Island to wait for better weather. The ship's purser died there. They reached Valparaiso, the chief port of Chile, on July 23, 1834. An old acquaintance from Shrewsbury was living there, and Darwin stayed as a guest in his house. Like many of his shipmates, he was ill for the first few weeks of his stay. In fact, it appears as though Fitzroy suffered a nervous breakdown in Valparaiso, and this delayed their departure. Darwin used the extra time to set out on an expedition across the Andes to the Argentine town of Mendoza. In November 1834 Fitzroy took the Beagle south again to Chiloe Island. Darwin was able to get a specimen of the very rare Chilotan fox by walking up behind it while it was observing two British officers take measurements and hitting it on the head with his geological hammer. On February 20, 1835 at Valdivia on the coast of Chile, they experienced the strongest earthquake that anyone in the area had experienced, which destroyed the city of Concepcion farther north. When they reached Concepcion, Darwin found that the earthquake had permanently raised the land and saw evidence of such uplift from previous quakes as well.

When the Beagle returned to Valparaiso in March 1835 Darwin arranged with Fitzroy to leave the ship and travel overland through the Andes by way of the dangerous Portillo Pass into Peru. Once again, he found evidence of the changing geological history of the earth: "It is an old story, but not the less wonderful, to hear of shells, which formerly were crawling about at the bottom of the sea, being now elevated nearly 14,000 feet above its level." Darwin rejoined his ship at the Peruvian port of Copiapo on July 5, 1835. They left from there on September 6 to go to the Galapagos Islands.

On September 15, 1835 the Beagle reached Chatham Island in the Galapagos Archipelago. The ship stayed among the islands for five weeks. Darwin wrote, "the natural history of this archipelago is very remarkable: it seems to be a little world within itself, the greater number of its inhabitants, both vegetable and animal, being found nowhere else." Of the 26 species of land birds that he looked at, only one, a kind of finch, was known to exist anywhere else. The giant tortoises and the other varieties of reptiles that he saw fascinated him. While in the Galapagos Darwin did not come up with any answers as to why the forms of life were so different in those remote islands from the rest of the world. But he did begin to ask himself some questions. This later became the basis for his famous theories. A couple of years later, in
1837, he wrote the following entry in his Journal: "In July opened first notebook on Transmutation of Species. Had been greatly struck from about the month of previous March on character of South American fossils, and species on Galapagos Archipelago. These facts (especially the latter) are the origin of all my views."

The trip homeward from the Galapagos was relatively uneventful. The Beagle stopped for ten days in Tahiti, where Darwin took two hikes into the interior. The expedition spent Christmas 1835 at a mission station on the North Island of New Zealand. Darwin compared the New Zealand Maoris, who had been subject to more Western influence, unfavorably to the Tahitians. He praised the work of the missionaries, however. In New Zealand he heard stories about the giant moa, a flightless bird between 10 and 12 feet tall that had only recently become extinct.

Stopping at Sydney in Australia, Darwin took a 12-day riding trip to the town of Bathurst, traveling part of the time with a group of Aborigines. The Beagle sailed via Tasmania and King George Sound in southwestern Australia to the Cocos Islands in the Indian Ocean, where Darwin investigated several natural phenomena. One of these was that the island's vegetation had mostly originated in Java and Sumatra, some 600 miles away; seeds and plants had been driven there by winds and currents and had taken root. Darwin was also fascinated by the coral formations that make up the Cocos Islands. He discovered that the coral polyps could only build a reef at a maximum depth of between 20 and 30 fathoms. Any coral reef or island that extended deeper than that below the water, and there are many, must have been created over millions of years as the original ground surface sank.

The Beagle continued on to Mauritius; Cape Town, where Darwin had dinner with the famous astronomer Sir John Herschel; St. Helena, where he slept near Napoleon's tomb; and Ascension Island. At Ascension several letters from home reached him, and he learned that some of his reports had been read at the Geological Society in London and received universal praise. The last ports of call were Bahia, Brazil and the Azores. The Beagle reached Falmouth, England on October 2, 1836, and Darwin left to go home to Shrewsbury, "having lived on board the little vessel very nearly five years."

The voyage of the Beagle constituted Darwin's lifetime field research. He never went abroad again. It was only after he was back in England and began to reflect on what he had seen that he started to develop his ideas on evolution. He began to publish the results of these reflections soon after his return, the first being on the nature of coral formations. The rest of his life was spent on research and writing.

Darwin's most important work, The Origin of the Species, only appeared in 1859. In it he put forth the theory of evolution that has guided scientists ever since—that living organisms change by a series of random permutations, which are "naturally selected" insofar as they are adapted to their environment. These ideas were not entirely new. Thomas Malthus had already presented similar ideas, and Darwin's friend Alfred Russell Wallace was working towards the same conclusion independently. As a result of the Beagle voyage, however, Darwin was able to back up his ideas with concrete evidence. Following his return to England, Darwin spent the next few years living as a bachelor in London. On November 11, 1838 ("the day of days"), he proposed to his cousin Emma Wedgwood and she accepted. They were married in January 1839; together they had 10 children, three of whom died in childhood. Darwin was elected to the prestigious Royal Society a few days before his marriage. In September 1842 he and his family moved to Down House in the English county of Kent, where he spent the rest of his life. Darwin suffered from increasing ill health over the years. Many theories have been put forth as to the nature of
his illness. One that is widely held is that he suffered from Chagas' disease, a tropical ailment that affects the nervous system, as the result of a bite he got in Brazil. Other theories hold that the illness was essentially psychosomatic, with a wide range of possible causes. He died at the age of 73 at Down House on April 19, 1882.

**Qin Shihuangdi (, also spelled Ch’in Shih Huang-ti)  259BC -- 210BC  （秦始皇）**

First true emperor of China, who forcibly unified much of modern China following the decline of the Zhou dynasty. His achievements in unifying, centralizing, and bureaucratizing China may have been influenced by those of Darius I of Persia, and followed precepts laid out by the legalist philosopher Xunzi. Aided by his chief minister Li Si he consolidated N defences into a Great Wall, and drove the Xiongnu (Huns) from S of the Yellow R. He conquered the S, built canals and roads, divided China into 36 military prefectures, destroyed feudalism, and disarmed nobles. He also standardized Chinese script, and harmonized axle lengths, weights, measures, and laws. His principal palace, accommodating 10'000, was connected to 270 others by a covered road network. He was buried in a starry mausoleum with 6000 life-size terracotta guards. The tomb has been excavated since 1974.

**Augustus, (Gaius Julius Caesar Octavianus)  63BC – 14**

Founder of the Roman Empire, the son of Gaius Octavius, senator and praetor, and great nephew (through his mother, Atia) of Julius Caesar. On Caesar's assassination (44 BC), he abandoned student life in Illyricum and returned to Italy where, using Caesar's money and name (he had acquired both under his will), he raised an army, defeated Antony, and extorted a wholly unconstitutional consulship from the Senate (43 BC). When Antony returned in force from Gaul later that year with Lepidus, Octavian made a deal with his former enemies, joining the so-called Second Triumvirate with them, and taking Africa, Sardinia, and Sicily as his province. A later redivision of power gave him the entire western half of the Roman world, and Antony the eastern. While Antony was distracted there by his military schemes against Parthia, and his liaison with Cleopatra, Octavian consistently undermined him at home. Matters came to a head in 31 BC, and the Battle of Actium followed, Octavian emerging victorious as the sole ruler of the Roman world. Though taking the inoffensive title princeps ("first citizen'"), he was in all but name an absolute monarch. His new name, Augustus ("exalted"), had historical and religious overtones, and was deliberately chosen to enhance his prestige. His long reign (27 BC--AD 14) was a time of peace and reconstruction at home, sound administration and steady conquest abroad. In gratitude the Romans awarded him the title Pater Patriae ("Father of his Country") in 2 BC, and on his death made him a god (divus Augustus).

**Catherine II (Catherine the Great)  1729 -- 1796**

Empress of Russia (1762-96). Born Sophie Friederike Auguste von Anhalt-Zerbst, on May 2, 1729, in Stettin, Prussia (now Szczecin, Poland). At the age of 16, she married Grand Duke Peter of Holstein, the grandson of Peter the Great and the heir to the Russian throne (later Peter III). Their marriage was an unhappy one, and Catherine (now baptized into the Russian Orthodox Church under that name) spent much of her time preparing for her future reign and engaging in extramarital affairs.

Supported by the Russian military, Catherine overthrew Peter III in 1762. Eight days later, Peter III was assassinated and Catherine was proclaimed empress of Russia under the title Catherine II. During her 34-year reign, Catherine carried out an energetic foreign policy. She extended the Russian Empire to the Black Sea as a result of two successful wars against Turkey (which lasted from 1768-1774 and from
1787-1792), while also bringing about the three partitions of Poland.

Despite pretensions to enlightened ideas, Catherine’s domestic policies achieved little for the mass of the Russian people, though great cultural advances were made among the nobility. In 1774, she suppressed the popular rebellion led by Yemelyan Pugachev, and later actively persecuted members of the progressive-minded nobility.

Catherine’s private life was dominated by a long series of lovers, most notably the Russian field marshal Grigoriy Potemkin.

Catherine died from an unexpected stroke on November 17, 1796, at the age of 67. She was succeeded by her son Paul.

**Watt, James  1736 -- 1819 （瓦特，詹姆斯）**

Inventor, born in Greenock, Inverclyde, WC Scotland, UK. He went to Glasgow in 1754 to learn the trade of mathematical-instrument maker, and there, after a year in London, he set up in business. He was employed on surveys for several canals, improved harbours and rivers, and by 1759 was studying steam as a motive force. In 1763–4, in the course of repairing a working model of the Newcomen engine, he found he could greatly improve its efficiency by using a separate steam condenser. After other improvements, he went into partnership with Matthew Boulton, and the new engine was manufactured at Birmingham in 1774. Several other inventions followed, including the double-acting engine, parallel motion linkage, the centrifugal governor for automatic speed control, and the pressure gauge. The term horse-power was first used by him, and the SI unit of power is named after him.

**Faraday, Michael  1791 -- 1867 （法拉第，迈克尔）**

Physicist and chemist. Born September 22, 1791, in Newington, Surrey. The family soon moved to London, where young Michael, one of 10 children, picked up the rudiments of reading, writing, and arithmetic. At the age of 14, he was apprenticed to a bookbinder and bookseller. He read ravenously and attended public lectures, including some by Sir Humphry Davy. Faraday's career began when Davy, temporarily blinded in a laboratory accident, appointed Faraday as his assistant at the Royal Institution. With Davy as a teacher in analytical chemistry, Faraday advanced in his scientific apprenticeship and began independent chemical studies. By 1825, he discovered benzene and had become the first to describe compounds of chlorine and carbon. He adopted the atomic theory to explain that chemical qualities were the result of attraction and repulsion between united atoms. This proved to be the theoretical foundation for much of his future work.

Faraday had already done some work in magnetism and electricity, and it was in this field that he made his most outstanding contributions. His first triumph came when he found a solution to the problem of producing continuous rotation by use of electric current, thus making electric motors possible. Hans Oersted had discovered the magnetic effect of a current, but Faraday grasped the fact that a conductor at rest and a steady magnetic field do not interact and that to get an induced current either the conductor or the field has to move. On August 29, 1831, Faraday discovered electromagnetic induction.

During the next 10 years, Faraday explored and expanded the field of electricity. In 1834, he announced his famous two laws of electrolysis. Briefly, they state that for any given amount of electrical force in an electrochemical cell, chemical substances are released at the electrodes in the ratio of their chemical equivalents. He also invented the voltammeter, a device for measuring electrical charges, which was the first step toward the later standardization of electrical quantities.
Faraday continued to work in his laboratory, but his health began to deteriorate and he had to stop work entirely in 1841. Almost miraculously, however, his health later improved and he resumed work in 1844. He began a search for an interaction between magnetism and light and in 1845 turned his attention from electrostatics to electromagnetism. He discovered that an intense magnetic field could rotate the plane of polarized light, a phenomenon known today as the Faraday effect. In conjunction with these experiments, he showed that all matter conducts the magnetic line of force. Objects that were good conductors he called paramagnetics, while those that conducted the force poorly he named diamagnetics. Thus, the energy of a magnet is in the space around it, not in the magnet itself. This is the fundamental idea of the field theory.

Faraday was a brilliant lecturer, and through his public lectures he did a great deal to popularize science. Shortly after he became head of the Royal Institution in 1825, he inaugurated the custom of giving a series of lectures for young people during the Christmas season. This tradition has been maintained, and over the years the series have frequently been the basis for fascinating, simply written, and informative books. Faraday died in London on August 25, 1867.

The admiration of physicists for Faraday has been demonstrated by naming the unit of capacitance the farad and a unit of charge, the faraday. No other man has been doubly honored in this way. His name also appears frequently in connection with effects, laws, and apparatus. These honors are proper tribute to the man who was possibly the greatest experimentalist who ever lived.

Maxwell, James C(lerken) 1831 -- 1879 (麦克斯韦)

Physicist, born in Edinburgh, EC Scotland, UK. He studied at Edinburgh and Cambridge, became professor at Aberdeen (1856) and London (1860), and was the first professor of experimental physics at Cambridge (1871), where he organized the Cavendish Laboratory. In 1873 he published his great Treatise on Electricity and Magnetism, which gives a mathematical treatment to Faraday's theory of electrical and magnetic forces. He also contributed to the study of colour vision, and to the kinetic theory of gases, but his greatest work was his theory of electromagnetic radiation, which established him as the leading theoretical physicist of the century.

Luther, Martin 1483 -- 1546 (马丁路德)

Protestant reformer. Born November 10, 1483, the son of Hans and Margaret Luther. Martin Luther was the first and greatest figure in the 16th-century Reformation. A composer of commentaries on Scripture, theology, and ecclesiastical abuses, a hymnologist, and a preacher, from his own time to the present he has been a symbol of Protestantism.

Luther's parents were of peasant stock, but his father had worked hard to raise the family's status, first as a miner and later as the owner of several small mines, to become a small-scale entrepreneur. In 1490, Martin was sent to the Latin school at Mansfeld, in 1497 to Magdeburg, and in 1498 to Eisenach. His early education was typical of late-15th-century practice. To a young man in Martin's circumstances, only the law and the church offered likely avenues of success, and Hans Luther's anticlericalism probably influenced his decision that his son should become a lawyer. Martin was enrolled at the University of Erfurt in 1501. He received a bachelor of arts degree in 1502 and a master of arts in 1505. In the same year he enrolled in the faculty of law.

On July 2, 1505, returning to Erfurt after visiting home, Martin was caught in a severe thunderstorm during which he was overpowered and flung to the ground, and in terror he vowed to become a monk if
he survived. This episode, as important in Christian history as the equally famous (and parallel) scene of St. Paul's conversion, changed the course of Luther's life. Two weeks later, against the opposition of his father and to the dismay of his friends, Martin Luther entered the Reformed Congregation of the Eremitical Order of St. Augustine at Erfurt.

Monastic life at Erfurt was hard. Monks had long become (with the friars and many of the secular clergy) the targets of anticlerical feeling. Charged with having forsaken their true mission and having fallen into greed and ignorance, monastic orders made many attempts at reform in the 15th and 16th centuries. The congregation at Erfurt had been reformed in 1473. The year before Luther entered the Augustinian order at Erfurt, the vicar general Johann Staupitz (later Luther's friend) had revised further the constitution of the order. Luther made his vows in 1506 and was ordained a priest in 1507. Reconciled with his father, he was then selected for advanced theological study at the University of Erfurt.

In 1508, Luther was sent to the newer University of Wittenberg to lecture in arts. Like a modern graduate student, he was also preparing for his doctorate of theology while he taught. He lectured on the standard medieval texts, for example, Peter Lombard's Book of Sentences, and the works of St. Augustine. In 1512, he received his doctorate in theology. Then came the second significant turn in Luther's career: he was appointed to succeed Staupitz as professor of theology at Wittenberg. The university, founded in 1502, strongly supported by the elector Frederick the Wise. By 1550, thanks to the efforts of Luther and his colleague Philip Melanchthon, it was to become the most popular university in Germany. In 1512, however, it lacked the prestige of Erfurt and Leipzig and was insignificant in the eyes of the greatest of the old universities, that of Paris. It was not a good place for an ambitious academic, but Luther was not ambitious in this sense. His rapid rise was due to his native ability, his boundless energy, his dedication to the religious life, and his high conception of his calling as a teacher.

The intellectual climate that shaped Luther's thought is difficult to analyze precisely. The two competing philosophic systems of scholasticism and nominalism both appear to have influenced Luther, particularly in their insistence on rigorous formal logic as the basis of philosophic and theological inquiry. Luther's professional work forced him further to develop the religious sensibility that had originally drawn him to monasticism. In the monastery and later in the university, Luther experienced other religious crises, all of which were based upon his acute awareness of the need for spiritual perfection and his equally strong conviction of his own human frailty. In 1509, Luther published his lectures on Peter Lombard; in 1513-1515 those on the Psalms; in 1515-1516 on St. Paul's Epistle to the Romans; and in 1516-1518 on the epistles to the Galatians and Hebrews. Like all other Christians, Luther read the Bible, and in these years his biblical studies became more and more important to him. Besides teaching and study, however, Luther had other duties. From 1514, he preached in the parish church; he was regent of the monastery school; and in 1515 he became the supervisor of 11 other monasteries.

Luther's crisis of conscience centered upon the question of his old monastic fears concerning the insufficiency of his personal efforts to placate a wrathful God. In his own person, these fears came to a head in 1519, when he began to interpret the passage in St. Paul's Epistle to the Romans which says that the justice of God is revealed in the Gospels. Luther felt himself to be "a sinner with an unquiet conscience." After an intense period of crisis, Luther discovered another interpretation of St. Paul's text. Only faith in God's mercy, according to Luther, could effect the saving righteousness of God in man. "Works," the term which Luther used to designate both formal, ecclesiastically authorized liturgy and the
more general sense of "doing good," became infinitely less important to him than faith.

Between 1515 and 1519 Luther considered the doctrine of justification, as well as into certain positions of practical ecclesiastical life. The most famous of these is the controversy over indulgences. In 1513, a great effort to dispense indulgences was proclaimed throughout Germany. In spite of the careful theological reservations surrounding them, indulgences appeared to the preachers who sold them and to the public who bought them as a means of escaping punishment in the afterlife for a sum of money. In 1517, Luther posted the 95 Theses for an academic debate on indulgences on the door of the castle church at Wittenberg. Both the place and the event were customary events in an academic year, and they might have gone unnoticed had not someone translated Luther's Latin theses into German and printed them, thus giving them widespread fame.

News of Dr. Luther's theses spread, and in 1518 Luther was called before Cardinal Cajetan, the papal legate at Augsburg, to renounce his theses. Refusing to do so, Luther returned to Wittenberg, where, in the next year, he agreed to a debate with the theologian Johann Eck. The debate, originally scheduled to be held between Eck and Luther's colleague Karlstadt, soon became a struggle between Eck and Luther in which Luther was driven by his opponent to take even more radical theological positions, thus laying himself open to the charge of heresy. By 1521, Eck secured a papal bull (decree) condemning Luther, and Luther was summoned to the Imperial Diet at Worms in 1521 to answer the charges against him. He asked for time to repudiate his ideas, and returning the next day, he answered: "Unless I am proved wrong by the testimony of Scripture or by evident reason I am bound in conscience and held fast to the Word of God. Therefore I cannot and will not retract anything, for it is neither safe nor salutary to act against one's conscience. God help me. Amen." Luther left Worms and was taken, for his own safety, to the castle of Wartburg, where he spent some months in seclusion, beginning his great translation of the Bible into German and writing numerous tracts.

In 1522, Luther returned to Wittenberg, where he succeeded in cooling the radical reforming efforts of his colleague Karlstadt and continued the incessant writing which would fill the rest of his life. By 1520, he had written three of his most famous tracts: To The Christian Nobility of the German Nation, On the Babylonian Captivity of the Church, and Of the Liberty of a Christian Man, a treatise on faith and on the inner liberty which faith affords those who possess it. The Lutheran Bible, "a vehicle of proletarian education" as well as a monument in the spiritual history of Europe, not only gave Luther's name and views wider currency but revealed the translator as a great master of German prose. Luther's theological writings continued to flow steadily. Often they were written in response to his critics or in the intense heat of debate with Protestant rivals.

The Reformation sparked conflicts, such as the Peasants' Rebellion of 1524-1525, and the affairs of the German princes, which drew from him new ideas on the necessary social and political order of Christian Germany. Luther's violent anti-peasant writings from this period have often been criticized. His fears of the dangerous role of extreme reformers like Karlstadt and Thomas Munzer, however, were greater than his hope for social reform through revolution. Luther came to rely heavily upon the princes to carry out his program of reform. In 1525, Luther married Katherine von Bora, a nun who had left her convent. From that date until his death, Luther's family life became not only a model of the Christian home but a source of psychological support to him.

In 1530, when Charles V was once again able to turn to the problems of the Reformation in
Germany, Luther supervised, although he did not entirely agree with, the writing of Melancthon's Augsburg Confession, one of the foundations of later Protestant thought. From 1530 on Luther spent as much time arguing with other Reformation leaders on matters of theology as with his Catholic opponents.

Luther's disputes with other theologians were carried out with the same intensity he applied to his other work: he longed for Christian unity, but he could not accept the theological positions that many others had advanced. He was also fearful of the question of a general council in the Church. In 1539 he wrote his On Councils and Churches and witnessed in the following years the failure of German attempts to heal the wounds of Christianity. On the eve of his death he watched with great concern the calling of the Council of Trent, the Catholic response to the Reformation.

In the 1540s, Luther was stricken with disease a number of times. In 1546, he was called from a sickbed to settle the disputes of two German noblemen. On the return trip he fell sick and died at Eisleben, the town of his birth, on February 18, 1546.

Washington, George 1732 -- 1799 (乔治 华盛顿)

First U.S. president. Born February 22, 1732, in Westmoreland County, Virginia. His father, a prosperous planter and iron foundry owner, died when he was 11, and Washington moved in with his elder half-brother Lawrence, who owned the plantation Mount Vernon. In 1748 Washington did some surveying for Lord Fairfax, a relative of Lawrence by marriage, meanwhile reading widely in Mt Vernon's library. In 1751, he accompanied the ailing Lawrence to Barbados; on his death the next year, Washington was left guardian of Lawrence's daughter at Mt Vernon, which Washington would inherit in 1761 after her death.

Having studied military science on his own, in 1753 Washington began several years' service with the Virginia militia in the French and Indian Wars, taking command of all Virginia forces in 1755 and participating in several dangerous actions. Commissioned as aide-de-camp by General Edward Braddock in 1755, he barely escaped with his life in the battle that took Braddock's life. He resigned his commission in 1758, following his election to the Virginia House of Burgesses (1759 -- 74).

In 1759, Washington married the wealthy widow Martha Custis, thus securing his fortune and social position. They had no children together but raised her two children, and later her two grandchildren. After a period of living the sociable life of a gentleman farmer, however, Washington risked it all by casting his lot with those rebelling against British rule, although his original motives probably had less to do with high principles and more to do with his personal annoyance with British commercial policies.

In 1774, Washington participated in the First Continental Congress and took command of the Virginia militia; by the next year the Second Congress, impressed with his military experience and commanding personality, made him commander in chief of the Continental army (June 1775). With remarkable skill, patience, and courage, Washington led the American forces through the Revolution, struggling not only with the British but with the stingy Continental Congress and also on occasion with resentful fellow officers. Notable among his achievements were his bold crossing of the Delaware to rout enemy forces at Trenton on Christmas night of 1776 and his holding the army together during the terrible winter encampment at Valley Forge in 1777 -- 8. His victory over the British at Yorktown (1781) effectively ended the war, but for almost two more years he had to strive to keep the colonists from splintering into selfish enterprises.

Washington returned to Mount Vernon in 1783, but maintained his presence in the debate over the
country's future. He solidified that role when he chaired the Philadelphia Constitutional Convention of 1787. In 1789, the first electors unanimously voted Washington as president; he was reelected in 1793. A natural leader rather than a thinker or orator, he had great difficulty coping with an unruly new government, futilely resisting the growing factionalism that resolved into the forming of Hamilton's Federalist Party - to which Washington finally gravitated - and Jefferson's liberal Democratic-Republican Party.

In 1796, Washington announced he would not run again (thus setting a precedent for only two terms) and retired from office the next year. In 1798, he accepted command of a provisional American army when it appeared there would be war with France, but the threat passed. The following year, Washington died at Mount Vernon and was mourned around the world. He immediately began to attain almost legendary status, so that succeeding generations throughout the world could bestow no higher accolade than to call their own national hero, "the George Washington" of their country.

**Marx, Karl (Heinrich)  1818 -- 1883 (卡尔 马克思）**

Philosopher, economist, revolutionary leader. Born May 5, 1818 in Trier, Rhenish Prussia, the son of Heinrich Marx, a lawyer, and Henriette Presburg Marx, a Dutchwoman. Both Heinrich and Henriette were descendants of a long line of rabbis. Barred from the practice of law as a Jew, Heinrich Marx became converted to Lutheranism about 1817, and Karl was baptized in the same church in 1824, at the age of 6. Karl attended a Lutheran elementary school but later became an atheist and materialist, rejecting both the Christian and Jewish religions. It was he who coined the aphorism "Religion is the opium of the people," a cardinal principle in modern communism.

Karl attended the Friedrich Wilhelm Gymnasium in Trier for 5 years, graduating in 1835, at the age of 17. The gymnasium curriculum was the usual classical one--history, mathematics, literature, and languages, particularly Greek and Latin. Karl became proficient in French and Latin, both of which he learned to read and write fluently. In later years he taught himself other languages, so that as a mature scholar he could also read Spanish, Italian, Dutch, Scandinavian, Russian, and English. As his articles in the New York Daily Tribune show, he came to handle the English language masterfully (he loved Shakespeare, whose works he knew by heart), although he never lost his heavy Teutonic accent in speaking.

In October 1835 Marx matriculated in Bonn University, where he attended courses primarily in jurisprudence, as it was his father's ardent wish that he become a lawyer. Marx, however, was more interested in philosophy and literature than in law. He wanted to be a poet and dramatist, and in his student days he wrote a great deal of poetry--most of it preserved--which in his mature years he rightly recognized as imitative and mediocre. He spent a year at Bonn, studying little but roistering and drinking. He spent a day in jail for disturbing the peace and fought one duel, in which he was wounded in the right eye. He also piled up heavy debts.

Marx's dismayed father took him out of Bonn and had him enter the University of Berlin, then a hub of intellectual ferment. In Berlin a galaxy of brilliant thinkers was challenging existing institutions and ideas, including religion, philosophy, ethics, and politics. The spirit of the great philosopher G. W. F. Hegel was still palpable there. A group known as the Young Hegelians, which included teachers such as Bruno Bauer and bright, philosophically oriented students, met frequently to debate and interpret the subtle ideas of the master. Young Marx soon became a member of the Young Hegelian circle and was deeply influenced by its prevailing ideas.
Marx spent more than 4 years in Berlin, completing his studies there in March 1841. He had given up jurisprudence and devoted himself primarily to philosophy. On April 15, 1841, the University of Jena awarded "Carolo Henrico Marx" the degree of doctor of philosophy on the strength of his abstruse and learned dissertation, Difference between Democritean and Epicurean Natural Philosophy, which was based on Greek-language sources.

Marx's hopes of teaching philosophy at Bonn University were frustrated by the reactionary policy of the Prussian government. He then turned to writing and journalism for his livelihood. In 1842 he became editor of the liberal Cologne newspaper Rheinische Zeitung, but it was suppressed by the Berlin government the following year. Marx then moved to Paris, where he first came in contact with the working class, gave up philosophy as a life goal, and undertook his serious study of economics.

In January 1845, Marx was expelled from France "at the instigation of the Prussian government," as he said. He moved to Brussels, where he lived until 1848 and where he founded the German Workers' party and was active in the Communist League. It was for the latter that he, with his friend and collaborator Friedrich Engels, published, in 1848, the famous Manifesto of the Communist Party (known as the Communist Manifesto). Expelled by the Belgian government for his radicalism, Marx moved back to Cologne, where he became editor of the Neue Rheinische Zeitung in June 1848. Less than a year later, in May 1849, the Prussian government suppressed the paper, and Marx himself was exiled. He returned to Paris, but in September the French government expelled him again. Hounded from the Continent, Marx finally settled in London, where he lived as a stateless exile (Britain denied him citizenship and Prussia refused to renaturalize him) for the rest of his life.

In London, Marx's sole means of support was journalism. He wrote for both German-and English-language publications. From August 1852 to March 1862 he was correspondent for the New York Daily Tribune, contributing a total of about 355 articles, many of which were used by that paper as leading (unsigned) editorials. Journalism, however, paid wretchedly (? per article); Marx was literally saved from starvation by the continuous financial support of Engels. In 1864 Marx helped to found in London the International Workingmen's Association (known as the First International), for which he wrote the inaugural address. In 1872 he dissolved the International, to prevent it from falling into the hands of the anarchists led by Mikhail Bakunin. Thereafter, Marx's political activities were confined mainly to correspondence with radicals in Europe and America, offering advice and helping to shape the socialist and labor movements.

A man of immense learning and sharp intellectual power, Marx, often impatient and irascible, antagonized people by his sardonic wit, bluntness, and dogmatism, which bordered on arrogance. His enemies were legion. Yet, despite his deserved reputation as a hard and disagreeable person, he had a soft spot for children; he deeply loved his own daughters, who, in turn, adored him. Marx was married to his childhood sweetheart, Jenny von Westphalen, who was known as the "most beautiful girl in Trier," on June 19, 1843. She died of cancer on December 2, 1881, at the age of 67. For Marx it was a blow from which he never recovered.

The Marxes had seven children, four of whom died in infancy or childhood. Of the three surviving daughters—Jenny (1844-1883), Laura (1845-1911), and Eleanor (1855-1898)—two married Frenchmen: Jenny, Charles Longuet; Laura, Paul Lafargue. Both of Marx's sons-in-law became prominent French socialists and members of Parliament. Eleanor lived with Edward Aveling and was active as a British
labor organizer. Both Laura and Eleanor committed suicide.

Marx spent most of his working time in the British Museum, doing research both for his newspaper articles and his books. He was a most conscientious scholar, never satisfied with secondhand information but tracing facts and figures to their original sources. In preparation for Das Kapital, he read virtually every available work in economic and financial theory and practice in the major languages of Europe.

Marx wrote hundreds of articles, brochures, and reports but few books as such. He published only five books during his lifetime. Two of them were polemical, and three were political-economic. The first, The Holy Family (1845), written in collaboration with Engels, was a polemic against Marx's former teacher and Young Hegelian philosopher Bruno Bauer. The second was Misere de la philosophie (The Poverty of Philosophy), written by Marx himself in French and published in Paris and Brussels in 1847. As its subtitle indicates, this polemical work was "An Answer to the Philosophy of Poverty by M. Proudhon."

Marx's third book, The Eighteenth Brumaire of Louis Bonaparte, published serially in a German publication in New York City in 1852, is a brilliant historical-political analysis of the rise and intrigues of the Bonaparte who became Napoleon III. The remaining two books, both on economics, are the ones on which Marx's worldwide reputation rests: Critique of Political Economy and, more particularly, Das Kapital (Capital).

Critique was published in 1859, after about 14 years of intermittent research. Marx considered it merely a first installment, expecting to bring out additional volumes, but he scrapped his plan in favor of another approach. The result was Das Kapital, subtitled Critique of Political Economy, of which only the first volume appeared, in 1867, in Marx's lifetime.

The central idea in Marx's thought is the materialistic conception of history. This involves two basic notions: that the economic system at any given time determines the prevailing ideas; and that history is an ongoing process regulated--predetermined--by the economic institutions which evolve in regular stages.

The first notion turned Hegel upside down. In Hegel's view, history is determined by the universal idea (God), which shapes worldly institutions. Marx formulated the reverse: that institutions shape ideas. This is known as the materialistic interpretation of history. Marx's second notion, that of historical evolution, is connected with his concept of dialectics. He saw in history a continuing dialectical process, each stage of development being the product of thesis, antithesis, and synthesis.

Thus thesis corresponds to the ancient, pre-capitalist period, when there were no classes or exploitation. Antithesis corresponds to the era of capitalism and labor exploitation. Synthesis is the final product--communism, under which capital would be owned in common and there would be no exploitation.

To Marx, capitalism is the last stage of historical development before communism. The proletariat, produced by capitalism, is the last historical class. The two are fated to be in conflict—the class struggle, which Marx proclaimed so eloquently in the Communist Manifesto—until the proletariat is inevitably victorious and establishes a transitional order, the proletarian dictatorship, a political system which Marx did not elaborate or explain. The proletarian dictatorship, in turn, evolves into communism, or the classless society, the final stage of historical development, when there are no classes, no exploitation, and no inequalities.

Marx's excessive smoking, wine drinking, and consumption of heavily spiced foods may have been
contributory causes to his illnesses, most of which would appear to be, in the light of modern knowledge, allergic and psychosomatic. In the last two decades of his life he was tormented by a mounting succession of ailments. He suffered from hereditary liver derangement (of which, he claimed, his father died); frequent outbreaks of carbuncles and furuncles on his neck, chest, back, and buttocks (often he could not sit); toothaches; eye inflammations; lung abscesses; hemorrhoids; pleurisy; and persistent headaches and coughs that made sleep impossible without drugs. In the final dozen or so years of his life, he could no longer do any sustained intellectual work. He died in his armchair in London on March 14, 1883, about two months before his sixty-fifth birthday. He is buried in London's Highgate Cemetery.

The Wright Brothers (Wilbur and Orville) (赖特兄弟)

Aviation pioneers, inventors. Wilbur was born near Millville, Indiana, and Orville (1871--1958) was born in Dayton, Ohio. The sons of a minister of the United Brethren Church, the Wright brothers showed mechanical genius from boyhood, although neither graduated from high school.

In 1892 they opened a bicycle sales and repair shop in Dayton and soon were making and selling their own bicycles. Reading about experiments with gliders spurred their interest in flight, and they built their first glider in 1899, a biplane kite with wings that could be twisted mechanically. The brothers made their first trip to Kitty Hawk, North Carolina in 1900 to conduct glider experiments on the sand hills there.

Back in Dayton they built the first wind tunnel and prepared their own tables of lift-pressures for various wing surfaces and wind speeds. They also built a powerful four-cylinder engine and an efficient propeller, and in September 1903 they returned to Kitty Hawk. Bad weather delayed the testing of this aircraft until December 17, 1903, when Orville piloted it on a flight of 12 seconds and 120 feet; Wilbur flew later in the day, staying aloft for 59 seconds to cover 852 feet.

The brothers built two sturdier, more reliable planes over the next two years and in 1906 received a U.S. patent for a powered aircraft. Initially they sold their plane to the British and French governments, but in 1908 the U.S. War Department contracted for a Wright flying machine for the army. In 1909 they formed the American Wright Company and proceeded to manufacture their improved planes and to train pilots.

Wilbur, a bachelor as was his brother, died of typhoid in May 1912. In 1915, Orville - who had continued to test fly all his planes - retired from the aircraft manufacturing business to pursue his own research interests. During World I he accepted a commission as a major to serve as a consultant to the army air service and he served for many years on the National Advisory Committee for Aeronautics.

Khan, Genghis  1167--1227  （成吉思汗）

Creator and leader of the Mongolian empire. Born circa 1167, Khan, whose original name was Temüjin, was born on the banks of the river Onon in the extreme northeast corner of present-day Mongolia. He was left an orphan at the age of 9, his father, a nephew of the last khan of the Mongols, having met his death at the hands of the Tatars, who in the second half of the 12th century had displaced the Mongols as the dominant tribe in eastern Mongolia. Temüjin's mother was deserted by her husband's followers at the instigation of the Taichi'uts, a rival clan who wished to prevent his succeeding to his father's position, and she was reduced to bringing up her family in conditions of great hardship.

When Temüjin had grown into young manhood, he was taken prisoner by the Taichi'uts, whose intention it was to keep him in perpetual captivity. However, he succeeded in escaping and soon afterward became the protég?of Toghril, the ruler of the Kereits, a Christian tribe in central Mongolia. It
was with the aid of Toghril and a young Mongol chieftain called Jamuka that Temüjin was able to rescue his newly married wife, who had been carried off by the Merkits, a forest tribe in the region which is now the Buryatiya in present-day Russia. For a time after this joint operation Temüjin and Jamuka remained friends, but then, for some obscure reason, a rift developed between them and they parted company. It was at this time that certain of the Mongol princes acclaimed Temüjin as their ruler, bestowing upon him the title by which he is known in history, Chingiz-Khan (Genghis Khan), which bears some such meaning as "Universal Monarch."

Genghis Khan's patron Toghril was driven into exile and then restored to the throne by the efforts of his protégé 2 years later, in 1198, the first precise date in Genghis Khan's career. The two chieftains allied themselves with the Chin rulers of North China in a campaign against the Tatars, Toghril being rewarded for his share in the joint victory with the Chinese title of wang (prince), whence his Mongol title of Ong-Khan, while Genghis Khan received a much inferior title. In 1199 they took the field against the Naimans, the most powerful tribe in western Mongolia, but the campaign was unsuccessful owing to Ong-Khan's pusillanimous conduct. In the years 1200-1202 the allies won several victories over a confederation of tribes led by Genghis Khan's former friend Jamuka; and in 1202 Genghis Khan made his final reckoning with the Tatars in a campaign which resulted in their total extinction as a people.

Relations with Ong-Khan had in the meanwhile so deteriorated that it came to open warfare. The first battle, though represented as indecisive, seems in fact to have been a defeat for Genghis Khan, who withdrew into a remote area of northeastern Mongolia. He soon rallied, however, and in a second battle (1203) gained a complete victory over Ong-Khan, who fled to the west to meet his death at the hands of the Naimans, while his people, the Kereits, lost their identity, being forcibly absorbed by the Mongols.

Genghis Khan now turned against his enemies in western Mongolia: the Naimans allied with Jamuka and the remnants of the Merkits. The Naimans were finally defeated in 1204, and Küchlug, the son of their ruler, fled westward to find refuge with the Kara-Khitai, descendants of the Chinese Liao dynasty, who after their expulsion by the Chin had founded a new empire in the area of present-day south Kazakhstan and Xinjiang region of China. Jamuka, now a fugitive, was betrayed by his followers and was put to death by Genghis Khan, his former friend, who found himself at last in undisputed control of Mongolia. In 1206 a kuriltai, or diet, of the Mongol princes, meeting near the sources of the Onon, proclaimed him supreme ruler of the Mongol peoples, and he was now able to contemplate the conquest of foreign nations.

Already, in 1205, Genghis Khan had attacked the Tanguts, a people of Tibetan origin in what is today Kansu and the Ordos Region of China, and two further campaigns against that people in 1207 and 1209 cleared the way for a frontal assault on China proper. In 1211 the Mongols invaded and overran the whole of the region north of the Great Wall; in 1213 the wall was breached, and their forces spread out over the North China plain; in the summer of 1215 Peking was captured and sacked, and the Chin emperor fled to Kaifeng on the southern banks of the Yellow River. Leaving one of his generals in charge of further operations in North China, Genghis Khan returned to Mongolia to devote his attention to events in central Asia.

Küchlug the Naiman, who had taken refuge among the Kara-Khitai, had dethroned the ruler of that people and had possessed that kingdom. An army dispatched by Genghis Khan chased him from Kashghar across the Pamirs into Afghanistan, where Küchlug was captured and put to death; and the
acquisition of his territory gave the Mongols a common frontier with Sultan Muhammad, the hereditary ruler of Khiva, who as the result of recent conquests had annexed the whole of central Asia as well as Afghanistan and the greater part of Persia.

War between the two empires was probably inevitable; it was precipitated by the execution of Genghis Khan's ambassadors and a group of merchants accompanying them at the frontier town of Otrar on the Syr Darya. Genghis Khan set out from Mongolia in the spring of 1219; he had reached Otrar by the autumn and, leaving a detachment to lay siege to it, advanced on Bukhara, which fell in March 1220, and on Samarkand, which capitulated a month later, the victors of Otrar having taken part in the siege. From Samarkand, Genghis Khan sent his two best generals in pursuit of Sultan Muhammad, who crisscrossed Persia in flight until he met his end on an island in the Caspian Sea. Continuing their westward sweep, the generals crossed the Caucasus and defeated an army of Russians and Kipchak Turks in the Crimea before returning along the northern shores of the Caspian Sea. Genghis Khan, in the meantime, having passed the summer of 1220 in the mountains south of Samarkand, attacked and captured Termez in the autumn and spent the winter of 1220/1221 in operations in what is now Tajikistan.

Early in 1221 he crossed the Oxus to destroy the ancient city of Balkh, then part of the Persian province of Khurasan, and dispatched his youngest son, Tolui (Tul?, the father of the Great Khans Mangu (Möngk? and Kublai, to complete the subjugation of that province, which he subjected to such devastation that it has not fully recovered to this day. In the late summer Genghis Khan advanced southward through Afghanistan to attack Sultan Jalal al-Din, the son of Sultan Muhammad, who at Parvan near Kabul had inflicted a defeat upon a Mongol army. He gave battle to Jalal al-Din on the banks of the Indus; the sultan was decisively defeated and escaped captured only by swimming across the river.

With Jalal al-Din's defeat the campaign in the west was virtually concluded, and Genghis Khan returned by slow stages to Mongolia, which he did not reach till the spring of 1225. In the autumn of the following year he was again at war with the Tanguts; he died, while the campaign was still in progress, in the Liupan Mountains in Kansu on August 25, 1227.

Smith, Adam 1723 – 1790 (亚当 斯密)

Economist and moral philosopher. Born June 5, 1723, in Kirkcaldy, Scotland. Smith’s father had died two months before his birth, and a strong and lifelong attachment developed between Smith and his mother. As an infant, Smith was kidnapped, but he was soon rescued. At the age of 14, he enrolled in the University of Glasgow, where he remained for three years. The lectures of Francis Hutcheson exerted a strong influence on him. In 1740, he transferred to Balliol College, Oxford, where he remained for almost seven years, receiving a bachelor of arts degree in 1744. Returning then to Kirkcaldy, he devoted himself to his studies and gave a series of lectures on English literature. In 1748, he moved to Edinburgh, where he became a friend of David Hume, whose skepticism he did not share.

Theory of Moral Sentiments

In 1751, Smith started working as a professor of logic at the University of Glasgow; the following year he became a professor of moral philosophy. Eight years later, he published his Theory of Moral Sentiments. Smith’s central notion in this work is that moral principles have social feeling or sympathy as their basis. Sympathy is a common or analogous feeling that an individual may have with the affections or feelings of another person. The source of this feeling is not so much one's observation of the expressed
emotion of another person as one's thought of the situation that the other person confronts. Sympathy usually requires knowledge of the cause of the emotion to be shared. If one approves of another's passions as suitable to their objects, he thereby sympathizes with that person. Sympathy is the basis for one's judging of the appropriateness and merit of the feelings and actions issuing from these feelings. If the affections of the person involved in a situation are analogous to the emotions of the spectator, then those affections are appropriate. The merit of a feeling or an action flowing from a feeling is its worthiness of reward. If a feeling or an action is worthy of reward, it has moral merit. One's awareness of merit derives from one's sympathy with the gratitude of the person benefited by the action. One's sense of merit, then, is a derivative of the feeling of gratitude that is manifested in the situation by the person who has been helped.

Smith warns that each person must exercise impartiality of judgment in relation to his own feelings and behavior. Well aware of the human tendency to overlook one's own moral failings and the self-deceit in which individuals often engage, Smith argues that each person must scrutinize his own feelings and behavior with the same strictness he employs when considering those of others. Such an impartial appraisal is possible because a person's conscience enables him to compare his own feelings with those of others. Conscience and sympathy working together, then, provide moral guidance for man so that the individual can control his own feelings and have a sensibility for the affections of others.

The Wealth of Nations

In 1764, Smith resigned his professorship to take up duties as a traveling tutor for the young Duke of Buccleuch and his brother. Carrying out this responsibility, he spent two years on the Continent. In Toulouse, he began writing his best-known work, An Inquiry into the Nature and Causes of the Wealth of Nations. While in Paris, he met Denis Diderot, Claude Adrien Helvétius, Baron Paul d'Holbach, François Quesnay, A.R.J. Turgot, and Jacques Necker. These thinkers doubtless had some influence on him. His life abroad came to an abrupt end when one of his charges was killed.

Smith then settled in Kirkcaldy with his mother. He continued to work on The Wealth of Nations, which was finally published in 1776. His mother died at the age of 90, and Smith was grief-stricken. In 1778, he was made customs commissioner, and in 1784 he became a fellow of the Royal Society of Edinburgh. Smith apparently spent some time in London, where he became a friend of Benjamin Franklin. On his deathbed he demanded that most of his manuscript writings be destroyed. He died on July 17, 1790.

The Wealth of Nations, easily the best known of Smith's writings, is a mixture of descriptions, historical accounts, and recommendations. The wealth of a nation, Smith insists, is to be gauged by the number and variety of consumable goods it can command. Free trade is essential for the maximum development of wealth for any nation because through such trade a variety of goods become possible.

Smith assumes that if each person pursues his own interest, as in a laissez-faire economy, the general welfare of all will be fostered. He objects to governmental control, although he acknowledges that some restrictions are required. The capitalist invariably produces and sells consumable goods in order to meet the greatest needs of the people. In fulfilling his own interest, the capitalist automatically promotes the general welfare. In the economic sphere, says Smith, the individual acts in terms of his own interest rather than in terms of sympathy. Thus, Smith made no attempt to bring into harmony his economic and moral theories, which he set out in The Wealth of Nations and Theory of Moral Sentiments, respectively.
Shakespeare, William  1564 – 1616  （莎士比亚）

Playwright and poet. Born in 1564, in Stratford-upon-Avon, Warwickshire, England (historians believe Shakespeare was born on April 23, the same day he died in 1616). The son of John Shakespeare, a glover, and Mary Arden, of farming stock. Much uncertainty surrounds Shakespeare's early life. He was the eldest of three sons, and there were four daughters. He was educated at the local grammar school, and married Anne Hathaway, from a local farming family, in 1582. She bore him a daughter, Susanna, in 1583, and twins, Hamnet and Judith, in 1585.

Shakespeare moved to London, possibly in 1591, and became an actor. From 1592 to 1594, when the theatres were closed for the plague, he wrote his poems "Venus and Adonis" and "The Rape of Lucrece." His sonnets, known by 1598, though not published until 1609, fall into two groups: 1 to 126 are addressed to a fair young man, and 127 to 154 to a "dark lady" who holds both the young man and the poet in thrall. Who these people are has provided an exercise in detection for numerous critics. The first evidence of his association with the stage is in 1594, when he was acting with the Lord Chamberlain's company of players, later "the King's Men'. When the company built the Globe Theatre south of the Thames in 1597, he became a partner, living modestly at a house in Silver Street until c.1606, then moving near the Globe. He returned to Stratford c.1610, living as a country gentleman at his house, New Place. His will was made in March 1616, a few months before he died, and he was buried at Stratford.

The modern era of Shakespeare scholarship has been marked by an enormous amount of investigation into the authorship, text, and chronology of the plays, including detailed studies of the age in which he lived, and of the Elizabethan stage. Authorship is still a controversial subject for certain plays, such as Titus Andronicus, Two Noble Kinsmen, and Henry VI, part I. This has involved detailed studies of the various editions of the plays, in particular the different quarto editions, and the first collected works, The First Folio of 1623. It is conventional to group the plays into early, middle, and late periods, and to distinguish comedies, tragedies, and histories, recognizing other groups that do not fall neatly into these categories.

1589  King John Plays
1590  Henry VI Part 11 Plays
1590  Henry VI Part 111 Plays
1590  Titus Andronicus Plays
1590  Henry VI Part 1 Plays
1593  Venus and Adonis Poetry
1593  The Two Gentlemen of Verona Plays
1593  The Comedy of Errors Plays
1594  The Rape of Lucrece Poetry
1594  Love's Labour's Lost Plays
1594  The Taming of the Shrew Plays
1596  A Midsummer Night's Dream Plays
1596  The Merchant of Venice Plays
1597  Henry IV Part 1 Plays
1597  The Merry Wives of Windsor Plays
1597  Henry IV Part 11 Plays
c. 1598  Much Ado about Nothing Plays
1598  Henry IV Part 11 Plays
1599  The Life of Henry V Plays
1599  Much Ado about Nothing Plays
1599  As You Like It Plays
1599  Julius Caesar Plays
c. 1600  Twelfth Night Plays
c. 1600  All's Well That Ends Well Plays
1601  The Phoenix and the Turtle Poetry
1602  Hamlet Plays
1602  Troilus and Cressida Plays
1604  Othello, The Moor of Venice Plays
1604  Measure for Measure Plays
1605  King Lear Plays
1606  Macbeth Plays
Alexander the Great  356BC -- 323BC （亚历山大大帝）

King of Macedonia. Born at Pella in 356 B.C. to the first wife of King Philip II of Macedonia. At age 20, Alexander became the king of Macedon, the leader of the Corinthian League, and the conqueror of Persia. He succeeded in forging the largest Western empire of the ancient world.

As a teenager, Alexander was educated by the Athenian philosopher Aristotle. By the year 337 B.C. all of the Greek city-states had been conquered or forced into an alliance by King Philip II. He was planning to lead their joint forces in an invasion of the Persian Empire when he was assassinated in 336 B.C. at the wedding of Alexander's sister to the king of one of his vassal states. Alexander succeeded to the throne of Macedonia at the age of 19. The unhappy Greeks immediately revolted but were quickly put down by Alexander who quickly showed his genius as a military leader. Having subdued all of Greece, he picked up his father's plan and headed east to fight the Persians.

Alexander's army crossed the Hellespont--now called the Dardanelles--in the spring of 334 B.C. He stopped at the site of the ancient Greek city of Troy, scene of Homer's Iliad. He met the Persians in battle for the first time on the Granicus River, which flows into the Sea of Marmara, and smashed the opposing army. Alexander himself narrowly missed being killed during the battle. Following this victory, Alexander pressed on through Asia Minor, being checked briefly by the Persians at the city of Miletos. He was near present-day Iskenderun in southern Turkey when he learned that the newly-crowned King Darius III of Persia and his army were at Issos, to his north.

Alexander encountered Darius at Issos in October 333 B.C. Alexander's army attacked while the Persians were trying to retreat to the sea in order to escape. He cut them off and inflicted a crushing defeat with an enormous number of Persian dead. Darius fled. Alexander then turned south and invaded Syria and Phoenicia, intending to take the Mediterranean ports where the Persian fleet had its bases. It took a siege of eight months to conquer the Phoenician city of Tyre, on an island of the coast of Lebanon. It is said that in the final battle in July 332 B.C. 8,000 of the inhabitants were killed and 30,000 were taken as slaves.

During the siege, Alexander received an offer of peace from Darius. The terms were seemingly so favorable that Alexander's second-in-command, Parmenio, is said to have said that he would accept them if he were Alexander. "That," replied Alexander, "is what I should do were I Parmenio."

Alexander then turned south and took the fortress of Gaza, with a Persian garrison inside, after a siege of two months. He crossed over into Egypt, where he was welcomed as a liberator from the hated Persians. He founded the port city of Alexandria in place of the old Greek trading port of Naukratis. This was the largest of the 70 cities that Alexander founded during the course of his conquests. He visited the ancient oracle of Zeus Ammon. Alexander never revealed what the oracle told him, but his soldiers spread the rumor that he had said that Alexander was destined to rule the world.

Alexander left Egypt with an army of 400,000 foot soldiers and 7,000 cavalry. He crossed the Euphrates and entered Mesopotamia where in 331 B.C. he met the Persian king once more at Gaugamela, east of the Tigris River. In spite of the fact that his army was smaller than that of the Persians, Alexander's superior tactics
won the field, and Darius was forced to flee again. By this victory he effectively won the war, although much more fighting was necessary before the Persian Empire finally disappeared. It took three years to subdue all of eastern Iran. After the Battle of Gaugamela, Alexander entered the ancient city of Babylon as a conqueror. From there he moved on to the great cities of the Persian Empire: Susa, Persepolis, and Pasargadæ. In 330 B.C. he defeated an army that was guarding the narrow pass known as the Persian Gates by finding a track that led around it and attacking from the rear. This gave him entrance to the Persian capital of Persepolis, where he and his men went on an orgy of destruction and burned down the palace of Xerxes.

Having penetrated this far into modern-day Iran, Alexander's army was now in country that was unmapped by and virtually unknown to the Greeks. Still pursuing Darius, he turned northwest toward Ecbatana (modern Hamadan) then northeast to Rhagae (near Teheran). Darius had been taken hostage by Bessus, the ruler of the province of Bactria. Alexander caught up with him as he was dying. Alexander had his body taken back to Persepolis to be buried in the royal tombs. At the death of the Persian king, Alexander adopted the title of Lord of Asia—as the ruler of the Persian Empire was called.

When Alexander learned that Bessus had adopted the title of Great King and was leading a revolt in the eastern provinces of the empire, Alexander led his army toward Bactria. The Greek army crossed the Hindu Kush mountains north of Kabul by the Khawak Pass, which lies more than 11,500 feet above sea level. When the army descended into Bactria they learned that Bessus had devastated the countryside and fled north, over the Oxus River (Amu Darya). By the time Alexander's men overtook him, he had already been overthrown. Alexander had him formally tried for the murder of Darius and had his nose and ears cut off and then sent him to Ecbatana where he was publicly put to death by crucifixion.

By this time Alexander was becoming more and more despotic. He killed his own foster brother, Clitus, in a drunken brawl after Clitus had insulted him. He antagonized many of his Greek and Macedonian followers by marrying a Persian princess, Roxane. When a plot was discovered to murder him, he had his old teacher and historian Callisthenes put to death. Alexander spent the year 328 B.C. subjugating Bactria and in early summer 327 B.C. recrossed the Hindu Kush to the south headed for India. Sending half of the army ahead by way of the Khyber Pass with orders to build a boat bridge across the Indus River, Alexander himself fought his way to the river through the hills north of the pass. He spent the winter fighting the local hill tribes.

His greatest accomplishment in this campaign was in scaling and taking Mount Aornos (Pir-Sar), which was supposed to be unconquerable. Following this victory, Alexander led his army to the banks of the Indus where they rested until spring. They then crossed the river and marched three days to the city of Taxila, where he was greeted by the king with much pomp and ceremony. He then continued on to the Hydaspes (Jhelum) River, where he met and defeated King Porus in what was to be his last great battle. He pushed on to the east, but on the banks of the Hyphasis (Beas) River—his army rebelled. They were tired after the long years of war and were anxious to see their families back in Greece. Alexander could not persuade them otherwise and after sulking in his tent for two days agreed to lead them back home.

Alexander shared the classical belief that the Indus and Nile Rivers were the same. He resolved to test this theory and see whether he could return to the Mediterranean that way. On the Hydaspes River, he constructed a large number of boats in which part of his force sailed downstream. The remainder were divided into three groups and made the journey by land. They departed in November 326 B.C. Going downstream Alexander engaged in constant warfare. The Indians would not supply his troops without a fight. At a city that is thought to be present-day Multan, Alexander climbed a ladder to lead the attack and was badly wounded. For several days it seemed as though he would die, and his men went berserk destroying everything and everyone
who got in their way. They reached the mouths of the Indus in the summer of 325 B.C.

Alexander explored both arms of the river and proved that it was not connected to the Nile. Before the expedition had reached the Indian Ocean, Alexander sent Craterus, one of his senior officers, back to Persia with the largest part of the army. He instructed Nearchus to wait until the monsoon in October and then to sail along the coast to the Persian Gulf to find a sea route back to the mouth of the Euphrates. Alexander and the remainder of the expedition made their way along the unexplored Makran coast of what is now Pakistan. He intended to follow the coastline and set up supply depots for the ships along the way, but the Taloi Mountains forced him to turn inland. Nearchus and the fleet were left to find their own supplies along a very desolate shore.

Alexander's journey through what he called the Gedrosia Desert in the months of August, September, and October 325 B.C. was among the most difficult he made. The expedition, including many women and children, had to walk over the waterless desert at night to avoid the intense heat by day. They did not have enough food or water, and many of them died before they reached Pura, the capital of the province of Gedrosia. Alexander then went to Kerman where he was met by Craterus and his forces. It was another six months before Alexander and Nearchus met at the Persian port of Ormuz.

Alexander's army reached the Persian city of Susa in the spring of 324 B.C. Alexander adopted more and more of the customs of the Asian despots, taking a second wife and integrating non-Greeks into his army. These measures alarmed his Greek and Macedonian veterans, and they voiced their discontent. Alexander discharged them and many headed back to Europe. During this time, however, Alexander laid the basis for future expeditions. He sent Heraclides to explore the Caspian Sea, to find out whether it was joined to the ocean that was supposed to circle the world. He also planned to send a fleet under Nearchus to sail around Arabia, hoping to discover a route between India and the Red Sea. He seems to have had plans to conquer Arabia as well. All of these projects were abandoned, however, when Alexander became ill at a banquet on June 1, 323 B.C. He died on June 13 at the age of 32, possibly as a result of having been poisoned.

Napoleon I (Napoleon Bonaparte) 1769 – 1821 (拿破仑)

Emperor of France. Born Napoleon Buonaparte (the spelling change was made after 1796) on August 15, 1769, in the Corsican city of Ajaccio. He was the fourth of 11 children of Carlo Buonaparte and Letizia Romolino. His father derived from the lesser Corsican nobility. Following the annexation of Corsica by France in 1769, Carlo was granted the same rights and privileges as the French nobility. After an elementary education at a boys’ school in Ajaccio, young Napoleon was sent in January 1779 with his older brother Joseph to the College of Autun in the duchy of Burgundy. In May of the same year he was transferred to the more fashionable College of Brienne, another military school, while his brother remained at Autun. Here Napoleon's small stature earned him the nickname of the "Little Corporal."

At Brienne, Napoleon received an excellent military and academic education, and in October 1784 he earned an appointment to the École Militaire of Paris. The royal military school of Paris was the finest in Europe in the years before the Revolution, and Napoleon entered the service of Louis XVI in 1785 with a formal education that had prepared him for his future role in French history. Napoleon joined an artillery unit at Valence, where he again received superior training.

First Military Assignments

Now a second lieutenant, Napoleon continued his education on his own, but he was distracted by Corsica. Until 1793 his thoughts, desires, and ambitions centered on the island of his birth. Following the death of his father, in 1786 he received an extended leave to return to Corsica to settle his family's affairs. After rejoining his
regiment at Auxonne, he again spent more than a year on his native island (1789-1790), during which time he was influential in introducing the changes brought about by the Revolution. Returning to France, Napoleon was transferred to Valence in June 1791. But by October he had returned to Corsica, where he remained for seven months. He spent the critical summer of 1792 in Paris and then returned to Corsica for one last episode in October. On this visit he took part in the power struggle between the forces supporting Pasquale Paoli and those supported by the French Republic. After Paoli was victorious, Napoleon and the Bonaparte family were forced to flee to the mainland, and the young officer then turned his attention to a career in the French army.

The Revolution of 1789 did not have a major effect upon Bonaparte in its early years. He did not sympathize with the royalists. Nor did he take an active part in French politics, as his thoughts were still taken up with affairs in Corsica. Napoleon was in Paris when the monarchy was overthrown in August 1792, but no evidence indicates that he was a republican. Upon his return from Corsica in the spring of 1793, Capt. Bonaparte was given a command with the republican army that was attempting to regain control of southern France from the proroyalist forces. He took part in the siege of Avignon, and then while on his way to join the French Army of Italy Napoleon was offered command of the artillery besieging the port of Toulon.

**National Acclaim**

The siege of Toulon provided Napoleon with his first opportunity to display his ability as an artillery officer and brought him national recognition. France had gone to war with Prussia and Austria in 1792. England, having joined the struggle in 1793, had gained control of Toulon. After his distinguished part in dislodging the British, Napoleon was promoted to the rank of brigadier general. He also made the acquaintance of Augustin Robespierre, the younger brother of the powerful Maximilien, and though Napoleon was not politically a Jacobin, he derived benefits from his association with influential party members. The overthrow of the Jacobin regime on 9 Thermidor (July 1794) led to Napoleon's imprisonment in Fort Carré on August 9. When no evidence could be found linking him to the British, Napoleon was released after 10 days of confinement.

Throughout the winter of 1794-1795 Napoleon was employed in the defense of the Mediterranean coast. Then, in April 1795, he was ordered to Paris, and in June he was assigned to the Army of the West. He refused this position, pleading poor health. This refusal almost brought an end to his military career, and he was assigned to the Bureau of Topography of the Committee of Public Safety. While serving in this capacity, he sought unsuccessfully to have himself transferred to Constantinople. Thus Napoleon was in Paris when the royalists attempted to overthrow the Directory on October 5, 1795.

Gen. Paul Barras had been placed in command of the defense of Paris by the government, and he called upon Gen. Bonaparte to defend the Tuileries. Napoleon put down the uprising of 13 Vendémiaire by unhesitatingly turning his artillery on the attackers, dispersing the mob with what he called "a whiff of grapeshot." In gratitude he was appointed commander of the Army of the Interior and instructed to disarm Paris.

**Marriage and Italian Campaign**

In the winter of 1795 Napoleon met Josephine de Beauharnais, the former Mademoiselle Tascher de La Pagerie. Born on the island of Martinique, she had been married to Alexandre de Beauharnais at the age of 16 and had borne him two children, Eugène and Hortense, before separating from him. Alexandre, a nobleman from Orléans, was executed in the last days of the Terror in 1794, leaving Josephine free to marry Napoleon. Their civil ceremony took place on March 9, 1796. Within a few days Napoleon left his bride behind in Paris and took up his new command at the head of the Army of Italy.

On March 26 Napoleon reached his headquarters at Nice, and on March 31 he issued the first orders for the invasion of Italy. The campaign opened on April 12, and within several weeks he had forced Piedmont out of
the war. In May, Napoleon marched across northern Italy, reaching Verona on June 3. The campaign was then bogged down by the Austrian defense of Mantua, which lasted 18 months. During this period Napoleon beat back Austrian attempts to relieve the fortified city at Castiglione, Arcole, and Rivoli. Finally, in the spring of 1797, Napoleon advanced on Vienna and forced the Austrians to sign the Treaty of Campoformio on October 17, 1797. The treaty gave France the territory west of the Rhine and control of Italy.

After spending the summer and fall at the palace of Monbello, where he established with Josephine what in reality was the court of Italy, Napoleon returned to Paris the hero of the hour. He was the man who could make war and peace. Napoleon was given command of the Army of England after drawing up a plan to invade that island. However, after a brief visit to the English Channel he abandoned any hope of crossing that turbulent body of water with the available French fleet. Returning to Paris, he gave up his command.

**Egyptian Campaign**

Napoleon did not wish to remain idle in Paris; nor did the government wish to see a popular general in the capital without a command to occupy him. Thus, when an expedition to Egypt was proposed, probably by Charles Maurice de Talleyrand, both the general and his government gave it their support. Strategically, the expedition would extend French influence into the Mediterranean and threaten British control in India. Napoleon sailed from Toulon on May 19, 1798, with an army of 35,000 men. On June 11-12 he captured Malta, and on June 30 the task force reached Alexandria, Egypt. The city was taken, and Napoleon's army marched up the west branch of the Nile to Cairo. In sight of the city and of the Pyramids, the first major battle took place. With minimal losses the French drove the Mamluks back into the desert in the Battle of the Pyramids, and all of lower Egypt came under Napoleon's control.

Napoleon reorganized the government, the postal service, and the system for collecting taxes; introduced the first printing presses; created a health department; built new hospitals for the poor in Cairo; and founded the Institut d'Egypte. During the French occupation the Rosetta Stone was discovered, and the Nile was explored as far south as Aswan. But the military aspect of Napoleon's Egyptian venture was not so rewarding. On August 1, 1798, Horatio Nelson destroyed the French fleet in Aboukir Bay, leaving the French army cut off from France. Then Napoleon's Syrian campaign ended in the unsuccessful siege of Acre (April 1799) and a return to the Nile. After throwing a Turkish army back into the sea at Aboukir (July 1799), Napoleon left the army under the command of Gen. Jean Baptiste Kléber and returned to France with a handful of officers.

**The Consulate**

Landing at Fréjus on October 9, 1799, Napoleon went directly to Paris, where the political situation was ripe for a coup d'état. France had become weary of the Directory, and in collaboration with Emmanuel Joseph Sieyès, Joseph Fouché and Talleyrand, Napoleon overthrew the government on 18 Brumaire (November 9-10, 1799). The Constitution of the Year VIII provided for the Consulate. Napoleon was named first consul and given virtually dictatorial powers. The trappings of the republic remained--there were two legislative bodies, the Tribunate and the Corps Legislatif--but real power rested in the hands of the first consul.

Napoleon began at once to solve the problems that faced France at the turn of the century. With mailed fist and velvet glove he ended the civil war in the Vendée. He then personally led an army over the Grand-Saint-Bernard Pass into Italy and defeated the Austrians, who had declared war on France while Napoleon was in Egypt, at the Battle of Marengo (June 14, 1800). This victory, which Napoleon always considered one of his greatest, again brought Italy under French control.

After a truce that lasted into December, French armies forced Austria out of the war for the second time. The Treaty of Lunéville (February 9, 1801) reconfirmed the Treaty of Campoformio. It was followed on March 25,
1802, by the Treaty of Amiens, which ended, or at least interrupted, the war with England. The Concordat that Napoleon signed with Pope Pius VII in 1801 restored harmony between Rome and Paris, and it ended the internal religious split that had originated in the Revolution. Napoleon also reformed France's legal system with the Code Napoleon.

**The Empire**

By 1802 Napoleon was the most popular dictator France had ever known, and he was given the position of first consul for life with the right to name his successor. The establishment of the Empire on May 18, 1804 thus changed little except the name of the government. The Constitution of the Year VIII was altered only to provide for an imperial government; its spirit was not changed. The Emperor of the French created a new nobility, set up a court, and changed the titles of government officials; but the average Frenchman noticed little difference.

The Treaty of Amiens proved to be no more than a truce, and in May 1803 the war with England was renewed. The Emperor planned to invade the island kingdom in the summer of 1805, but his naval operations went amiss. In September, Napoleon turned his back on the Channel and marched against Austria, who together with Russia had formed the Third Coalition. At Ulm (October 14) and Austerlitz (December 2) Napoleon inflicted disastrous defeats upon the Allies, forcing Alexander I of Russia to retreat behind the Neman and compelling Austria to make peace. At the Battle of Austerlitz, Napoleon reached the height of his military career. The Treaty of Pressburg (December 27, 1805) deprived Austria of additional lands and further humiliated the once mighty Hapsburg State.

**Victory throughout the Continent**

The year 1806 was marked by war with Prussia over increased French influence in Germany. The overconfident Prussian army sang as it marched to total destruction at the battles of Jena and Auerstädt (October 14, 1806), and Napoleon entered Berlin in triumph. Prussia was reduced to a second-rate power, and the fighting moved eastward into Poland as the Russians belatedly came to the aid of their defeated ally. Although at the Battle of Eylau (Feb. 8, 1807) the French were brought to a standstill, on June 14 at Friedland the Emperor drove the Russian army from the field. Alexander I made peace at Tilsit on June 25, 1807. This understanding between the two emperors divided Europe. Alexander was to have a free hand in the east to take Finland and Bessarabia, while Napoleon was free to reshape western and central Europe as he pleased. The most significant result was the creation of the grand duchy of Warsaw (1807). Sweden was defeated in 1808 with Russia's help. Napoleon was now master of the Continent. Only England remained in the field.

**Problems with England and Spain**

On October 21, 1805, Adm. Horatio Nelson had destroyed the combined Franco-Spanish fleet off Cape Trafalgar, Spain. This loss made it virtually impossible for Napoleon to invade England. He, therefore, introduced the Continental system, or blockade, designed to exclude all British goods from Europe. In this manner he hoped to ruin the British economy and to force the "nation of shopkeepers" to make peace on French terms. His plan did not work, and it led Napoleon into conflicts with Spain, the papacy, and Russia, and it undoubtedly formed a major cause for the downfall of the Empire.

In Spain in 1808 French interference led to the removal of the Bourbon dynasty and to the placement of Joseph Bonaparte as king. But the Spanish people refused to accept this Napoleonic dictate and, with aid from Great Britain, kept 250,000 French troops occupied in the Peninsular War (1808-1814). The refusal of Pope Pius VII to cooperate with Napoleon and the blockade led to the Pope's imprisonment and a French take-over of the Papal States. In the case of Russia refusal proved even more serious. Alexander's refusal to close
Russian ports to British ships led to Napoleon's Russian campaign of 1812, which was highlighted by the Battle of Borodino (September 7) and the occupation of Moscow (September 14-October 19). However, the ultimate result of this Russian campaign was the destruction of the Grand Army of 500,000 troops.

Fall from Glory

The Napoleonic system now began to break up rapidly. At its height three of the Emperor's brothers and his brother-in-law sat on European thrones. Napoleon had also secured an annulment of his marriage to Josephine and then married Marie Louise, the daughter of Emperor Francis II of Austria, in March 1810. Despite this union, Napoleon's father-in-law declared war on him in 1813. Napoleon's defeat at the Battle of the Nations at Leipzig (Oct. 16-18, 1813) forced him behind the Rhine, where he waged a brilliant, but futile, campaign during the first 3 months of 1814. Paris fell to the Allies on March 31, 1814, and the hopelessness of the military situation led the Emperor to abdicate at Fontainebleau (April 4, 1814) in favor of his son Napoleon II. However, the Allies refused to recognize the 3-year-old boy, and Louis XVIII was placed on the French throne.

Napoleon was exiled to the island of Elba, where he was sovereign ruler for 10 months. But as the alliance of the Great Powers broke down during the Congress of Vienna and the French people became dissatisfied with the restored royalists, Napoleon made plans to return to power. Sailing from Elba on February 26, 1815, with 1,050 soldiers, Napoleon landed in southern France and marched unopposed to Paris, where he reinstated himself on March 21. Louis XVIII fled, and thus began Napoleon's new reign: the Hundred Days. The French did not wish to renew their struggle against Europe. Nevertheless, as the Allies closed ranks, Napoleon was forced to renew the war if he was to remain on the throne of France.

The Waterloo campaign (June 12-18) was short and decisive. After a victory over the Prussian army at Ligny, Napoleon was defeated by the combined British and Prussian armies under the Duke of Wellington and Gebhard von Blücher at Waterloo on June 18, 1815. He returned to Paris and abdicated for a second time, on June 22.

Napoleon at first hoped to reach America; however, he surrendered to the commander of the British blockade at Rochefort on July 3, hoping to obtain asylum in England. Instead, he was sent into exile on the island of St. Helena. There he spent his remaining years, quarreling with the British governor, Sir Hudson Lowe, and dictating his memoirs. He died on St. Helena, after long suffering from cancer, on May 5, 1821.

Edison, Thomas (Alva) 1847–1931 (托马斯 爱迪生)

Inventor. Born February 11, 1847 in Milan, Ohio. His father was a jack-of-all-trades, his mother a former teacher. Edison spent three months in school, then was taught at home by his mother. At the age of 12 he sold fruit, candy, and papers on the Grand Trunk Railroad. In 1862, using his small handpress in a baggage car, he wrote and printed the Grand Trunk Herald, which was circulated to 400 railroad employees. That year he became a telegraph operator, taught by the father of a child whose life Edison had saved. Exempt from military service because of deafness, he was a tramp telegrapher until he joined Western Union Telegraph Company in Boston in 1868.

Probably Edison's first invention was an automatic telegraph repeater (circa 1864). His first patent was for an electric vote recorder. In 1869, as a partner in a New York electrical firm, he perfected the stock ticker and sold it. This money, in addition to that from his share of the partnership, provided funds for his own factory in Newark, N.J. Edison hired technicians to collaborate on inventions; he wanted an "invention factory." As many as 80 "earnest men," including chemists, physicists, and mathematicians, were on his staff. "Invention to order" became very profitable.

From 1870 to 1875, Edison invented many telegraphic improvements: transmitters; receivers; the duplex,
quadruplex, and sextuplex systems; and automatic printers and tape. He worked with Christopher Sholes, "father of the typewriter," in 1871 to improve the typing machine. Edison claimed he made 12 typewriters at Newark about 1870. The Remington Company bought his interests.

In 1876 Edison's carbon telegraph transmitter for Western Union marked a real advance toward making the Bell telephone practical. (Later, Emile Berliner's transmitter was granted patent priority by the courts.) With the money Edison received from Western Union for his transmitter, he established a factory in Menlo Park, N.J. Again he pooled scientific talent, and within six years he had more than 300 patents. The electric pen (1877) produced stencils to make copies. (The A. B. Dick Company licensed Edison's patent and manufactured the mimeograph machine.)

Edison's most original and lucrative invention, the phonograph, was patented in 1877. From a manually operated instrument making impressions on metal foil and replaying sounds, it became a motor-driven machine playing cylindrical wax records by 1887. By 1890 he had more than 80 patents on it. The Victor Company developed from his patents. (Alexander Graham Bell impressed sound tracks on cylindrical shellac records; Berliner invented disk records. Edison's later dictating machine, the Ediphone, used disks.)

To research incandescence, Edison and others—including J. P. Morgan—organized the Edison Electric Light Company in 1878. (Later it became the General Electric Company.) Edison made the first practical incandescent lamp in 1879, and it was patented the following year. After months of testing metal filaments, Edison and his staff examined 6,000 organic fibers from around the world and decided that Japanese bamboo was best. Mass production soon made the lamps, although low-priced, profitable.

Prior to Edison's central power station, each user of electricity needed a dynamo (generator), which was inconvenient and expensive. Edison opened the first commercial electric station in London in 1882; in September the Pearl Street Station in New York City marked the beginning of America's electrical age. Within 4 months the station was lighting more than 5,000 lamps for 230 customers, and the demand for lamps exceeded supply. By 1890 it supplied current to 20,000 lamps, mainly in office buildings, and to motors, fans, printing presses, and heating appliances. Many towns and cities installed central stations. Increased use of electricity led to Edison-base sockets, junction boxes, safety fuses, underground conduits, meters, and the three-wire system. Jumbo dynamos, with drum-wound armatures, could maintain 110 volts with 90 percent efficiency. The three-wire system, first installed in Sunbury, Pennsylvania, in 1883, superseded the parallel circuit, used 110 volts, and necessitated high-resistance lamp filaments (metal alloys were later used).

In 1883 Edison made a significant discovery in pure science, the Edison effect—electrons flowed from incandescent filaments. With a metal-plate insert, the lamp could serve as a valve, admitting only negative electricity. Although "etheric force" had been recognized in 1875 and the Edison effect was patented in 1883, the phenomenon was little known outside the Edison laboratory. (At this time existence of electrons was not generally accepted.) This "force" underlies radio broadcasting, long-distance telephony, sound pictures, television, electric eyes, x-rays, high-frequency surgery, and electronic musical instruments. In 1885 Edison patented a method to transmit telegraphic "aerial" signals, which worked over short distances, and later sold this "wireless" patent to Guglielmo Marconi.

The vast West Orange, New Jersey, factory, which Edison directed from 1887 to 1931, was the world's most complete research laboratory, an antecedent of modern research and development laboratories, with teams of workers systematically investigating problems. Various inventions included a method to make plate glass, a magnetic ore separator, compression dies, composition brick, a cement process, an all-concrete house, an electric locomotive (patented 1893), a fluoroscope, a nickel-iron battery, and motion pictures. Edison refused
to patent the fluoroscope, so that doctors could use it freely; but he patented the first fluorescent lamp in 1896.

The Edison battery, finally perfected in 1910, was a superior storage battery with an alkaline electrolyte. After 8000 trials Edison remarked, "Well, at least we know 8000 things that don't work." In 1902 he improved the copper oxide battery, which resembled modern dry cells.

Edison's motion picture camera, the kinetograph, could photograph action on 50-foot strips of film, 16 images per foot. A young assistant, in order to make the first Edison movies, in 1893 built a small laboratory called the "Black Maria,"—a shed, painted black inside and out, that revolved on a base to follow the sun and kept the actors illuminated. The kinetoscope projector of 1893 showed the films. The first commercial movie theater, a peepshow, opened in New York in 1884. A coin put into a slot activated the kinetoscope inside the box. Acquiring and improving the projector of Thomas Armat in 1895, Edison marketed it as the Vitascope.

The Edison Company produced over 1,700 movies. Synchronizing movies with the phonograph in 1904, Edison laid the basis for talking pictures. In 1908 his cinemophone appeared, adjusting film speed to phonograph speed. In 1913 his kinetophone projected talking pictures: the phonograph, behind the screen, was synchronized by ropes and pulleys with the projector. Edison produced several "talkies." Meanwhile, among other inventions, the universal motor, which used alternating or direct current, appeared in 1907; and the electric safety lantern, patented in 1914, greatly reduced casualties among miners. That year Edison invented the telerecords, which combined features of the telephone and dictating phonograph.

During World War I, Edison headed the U.S. Navy Consulting Board and contributed 45 inventions, including substitutes for previously imported chemicals (especially carbolic acid, or phenol), defensive instruments against U-boats, a ship-telephone system, an underwater searchlight, smoke screen machines, anti-torpedo nets, turbine projectile heads, collision mats, navigating equipment, and methods of aiming and firing naval guns. After the war he established the Naval Research Laboratory, the only American institution for organized weapons research until World War II.

With Henry Ford and the Firestone Company, Edison organized the Edison Botanic Research Company in 1927 to discover or develop a domestic source of rubber. Some 17,000 different botanical specimens were examined over 4 years—an indication of Edison's tenaciousness. By crossbreeding goldenrod, he developed a strain yielding 12 percent latex, and in 1930 he received his last patent, for this process.

To raise money, Edison dramatized himself by careless dress, clowning for reporters, and playing the role of homespun sage with aphorisms like "Genius is 1 percent inspiration and 99 percent perspiration" and "Discovery is not invention." He scoffed at formal education, slept only four hours a night, and often worked 40 or 50 hours straight. As a world symbol of Yankee ingenuity, he looked and acted the part. Edison had more than 10,000 books at home and masses of printed materials at the laboratory. When launching a new project, he wished to avoid others' mistakes and to know everything about a subject. Some 25,000 notebooks contained his research records, ideas, hunches, and mistakes. Supposedly, his great shortcoming was lack of interest in anything not utilitarian; yet he loved to read Shakespeare and Thomas Paine.

Edison died in West Orange, New Jersey, on October 18, 1931. The laboratory buildings and equipment associated with his career are preserved in Greenfield Village, Detroit, Michigan, thanks to Henry Ford's interest and friendship.

Leeuwenhoek, Antonie van 1632 – 1723 (列文虎克)

Microscopist, born in Delft, The Netherlands. A clerk in an Amsterdam cloth warehouse until 1650, he returned to Delft, where he made a series of discoveries in relation to the circulation of the blood. He also first detected the fibres of the crystalline lens, the fibrils and striping of muscle, the structure of ivory and hair, the
scales of the epidermis, and the distinctive characters of rotifers.

**Lavoisier, Antoine Laurent  1743 – 1794 （拉瓦锡）**

Chemist, born in Paris. To finance his investigations, in 1768 he accepted the office of farmer-general of taxes, and became director of the government powder mills in 1776. In 1788 he showed that air is a mixture of gases which he called oxygen and nitrogen, thus disproving the earlier theory of phlogiston. His major work is the Traité élémentaire de chimie (1789), containing the ideas which set chemistry on its modern path. He also devised the modern method of naming chemical compounds, and was a member of the commission which devised the metric system. Politically a liberal, and despite his many reforms, he was guillotined in Paris on a contrived charge of counter-revolutionary activity. He is now recognized as the founder of modern chemistry.

**Hitler, Adolf  1889 – 1945 （希特勒）**

Dictator and leader of the German Nazi movement. Born April 20, 1889 in the small Austrian town of Braunau on the Inn River along the Bavarian-German border, son of an Austrian customs official of moderate means. Hitler’s early youth in Linz on the Danube seems to have been under the repressive influence of an authoritarian and, after retirement in 1895, increasingly short-tempered and domineering father until the latter’s death in 1903.

After an initially fine performance in elementary school, Adolf soon became rebellious and began failing in the Realschule (college preparatory school). Following transfer to another school, he finally left formal education altogether in 1905 and, refusing to bow to the discipline of a regular job, began his long years of dilettante, aimless existence, reading, painting, wandering in the woods, and dreaming of becoming a famous artist. In 1907, when his mother died, he moved to Vienna in an attempt to enroll in the famed Academy of Fine Arts. His failure to gain admission that year and the next led him into a period of deep depression and seclusion from his friends. Wandering through the streets of Vienna, he lived on a modest orphan’s pension and the money he could earn by painting and selling picture postcards. It was during this time of his vagabond existence among the rootless, displaced elements of the old Hapsburg capital, that he first became fascinated by the immense potential of mass political manipulation. He was particularly impressed by the successes of the anti-Semitic, nationalist Christian-Socialist party of Vienna Mayor Karl Lueger and his efficient machine of propaganda and mass organization. Under Lueger’s influence and that of former Catholic monk and race theorist Lanz von Liebenfels, Hitler first developed the fanatical anti-Semitism and racial mythology that were to remain central to his own “ideology” and that of the Nazi party.

In May 1913, apparently in an attempt to avoid induction into the Austrian military service after he had failed to register for conscription, Hitler slipped across the German border to Munich, only to be arrested and turned over to the Austrian police. He was able to persuade the authorities not to detain him for draft evasion and duly presented himself for the draft physical examination, which he failed to pass. He returned to Munich, and after the outbreak of World War I a year later, he volunteered for action in the German army. During the war he fought on Germany’s Western front with distinction but gained no promotion beyond the rank of corporal. Injured twice, he won several awards for bravery, among them the highly respected Iron Cross First Class. Although isolated in his troop, he seems to have thoroughly enjoyed his success on the front and continued to look back fondly upon his war experience.

The end of the war suddenly left Hitler without a place or goal and drove him to join the many disillusioned veterans who continued to fight in the streets of Germany. In the spring of 1919 he found employment as a political officer in the army in Munich with the help of an adventurer-soldier by the name of Ernst Roehm--later head of Hitler's storm troopers (SA). In this capacity Hitler attended a meeting of the so-called German
Workers' party, a nationalist, anti-Semitic, and socialist group, in September 1919. He quickly distinguished himself as this party's most popular and impressive speaker and propagandist, helped to increase its membership dramatically to some 6,000 by 1921, and in April that year became Fuhrer (leader) of the now-renamed National Socialist German Workers' party (NSDAP), the official name of the Nazi party.

The worsening economic conditions of the two following years, which included a runaway inflation that wiped out the savings of great numbers of middle-income citizens, massive unemployment, and finally foreign occupation of the economically crucial Ruhr Valley, contributed to the continued rapid growth of the party. By the end of 1923 Hitler could count on a following of some 56,000 members and many more sympathizers and regarded himself as a significant force in Bavarian and German politics. Inspired by Mussolini's "March on Rome," he hoped to use the crisis conditions accompanying the end of the Ruhr occupation in the fall of 1923 to stage his own coup against the Berlin government. For this purpose he staged the well-known Nazi Beer Hall Putsch of Nov. 8/9, 1923, by which he hoped--in coalition with right-wingers around World War I general Erich Ludendorff--to force the conservative-nationalist Bavarian government of Gustav von Kahr to cooperate with him in a rightist "March on Berlin." The attempt failed, however. Hitler was tried for treason and given the rather mild sentence of a year's imprisonment in the old fort of Landsberg.

It was during this prison term that many of Hitler's basic ideas of political strategy and tactics matured. Here he outlined his major plans and beliefs in Mein Kampf, which he dictated to his loyal confidant Rudolf Hess. He planned the reorganization of his party, which had been outlawed and which, with the return of prosperity, had lost much of its appeal. After his release Hitler reconstituted the party around a group of loyal followers who were to remain the cadre of the Nazi movement and state. Progress was slow in the prosperous 1920s, however, and on the eve of the Depression, the NSDAP still was able to attract only some 2.5 percent of the electoral vote.

With the outbreak of world depression, the fortunes of Hitler's movement rose rapidly. In the elections of September 1930 the Nazis polled almost 6.5 million votes and increased their parliamentary representation from 12 to 107. In the presidential elections of the spring of 1932, Hitler ran an impressive second to the popular World War I hero Field Marshal Paul von Hindenburg, and in July he outpolled all other parties with some 14 million votes and 230 seats in the Reichstag (parliament). Although the party lost 2 million of its voters in another election, in November 1932, President Hindenburg on Jan. 30, 1933, reluctantly called Hitler to the chancellorship to head a coalition government of Nazis, conservative German nationalists, and several prominent independents.

The first two years in office were almost wholly dedicated to the consolidation of power. With several prominent Nazis in key positions (Hermann Goring, as minister of interior in Prussia, and Wilhelm Frick, as minister of interior of the central government, controlled the police forces) and his military ally Werner von Blomberg in the Defense Ministry, he quickly gained practical control. He persuaded the aging president and the Reichstag to invest him with emergency powers suspending the constitution in the so-called Enabling Act of Feb. 28, 1933. Under this act and with the help of a mysterious fire in the Reichstag building, he rapidly eliminated his political rivals and brought all levels of government and major political institutions under his control. By means of the Roehm purge of the summer of 1934 he assured himself of the loyalty of the army by the subordination of the Nazi storm troopers and the murder of its chief together with the liquidation of major rivals within the army. The death of President Hindenburg in August 1934 cleared the way for the abolition of the presidential title by plebiscite. Hitler became officially Fuhrer of Germany and thereby head of state as well as commander in chief of the armed forces. Joseph Goebbels's extensive propaganda machine and Heinrich
Himmler's police system simultaneously perfected totalitarian control of Germany, as demonstrated most impressively in the great Nazi mass rally of 1934 in Nuremberg, where millions marched in unison and saluted Hitler's theatrical appeals.

Once internal control was assured, Hitler began mobilizing Germany's resources for military conquest and racial domination of the land masses of central and eastern Europe. He put Germany's 6 million unemployed to work on a vast rearmament and building program, coupled with a propaganda campaign to prepare the nation for war. Germany's mythical enemy, world Jewry—which was associated with all internal and external obstacles in the way of total power—was systematically and ruthlessly attacked in anti-Semitic mass propaganda, with economic sanctions, and in the end by the "final solution" of physical destruction of Jewish men, women, and children in Himmler's concentration camps.

Foreign relations were similarly directed toward preparation for war: the improvement of Germany's military position, the acquisition of strong allies or the establishment of convenient neutrals, and the division of Germany's enemies. Playing on the weaknesses of the Versailles Peace Treaty and the general fear of war, this policy was initially most successful in the face of appeasement-minded governments in England and France. After an unsuccessful coup attempt in Austria in 1934, Hitler gained Mussolini's alliance and dependence as a result of Italy's Ethiopian war in 1935, illegally marched into the Rhineland in 1936 (demilitarized at Versailles), and successfully intervened—in cooperation with Mussolini—in the Spanish Civil War. Under the popular banner of national self-determination, he annexed Austria and the German-speaking Sudetenland of Czechoslovakia with the concurrence of the West in 1938 (Munich Agreement), only to occupy all of Czechoslovakia early in 1939. Finally, through threats and promises of territory, he was able to gain the benevolent neutrality of the Soviet Union for the coming war (Molotov-Ribbentrop Pact, August 1939). Alliances with Italy (Pact of Steel) and Japan followed.

On Sept. 1, 1939, Hitler began World War II—which he hoped would lead to his control of most of the Eurasian heartland—with the lightning invasion of Poland, which he immediately followed with the liquidation of Jews and the Polish intelligentsia, the enslavement of the local "subhuman" population, and the beginnings of a German colonization. Following the declaration of war by France and England, he temporarily turned his military machine west, where the lightning, mobile attacks of the German forces quickly triumphed. In April 1940 Denmark surrendered, and Norway was taken by an amphibious operation. In May-June the rapidly advancing tank forces defeated France and the Low Countries.

The major goal of Hitler's conquest lay in the East, however, and already in the middle of 1940 German war production was preparing for an eastern campaign. The Air Battle of Britain, which Hitler had hoped would permit either German invasion or (this continued to be his dream) an alliance with "Germanic" England, was broken off, and Germany's naval operations collapsed for lack of reinforcements and materiel.

On June 22, 1941, the German army advanced on Russia in the so-called Operation Barbarossa, which Hitler regarded as Germany's final struggle for existence and "living space" (Lebensraum) and for the creation of the "new order" of German racial domination. After initial rapid advances, the German troops were stopped by the severe Russian winter, however, and failed to reach any of their three major goals: Leningrad, Moscow, and Stalingrad. The following year's advances were again slower than expected, and with the first major setback at Stalingrad (1943) the long retreat from Russia began. A year later, the Western Allies, too, started advancing on Germany.

With the waning fortunes of the German war effort, Hitler withdrew almost entirely from the public; his orders became increasingly erratic and pedantic; and recalling his earlier triumphs over the generals, he
refused to listen to advice from his military counselors. He dreamed of miracle bombs and suspected treason everywhere. Under the slogan of "total victory or total ruin," the entire German nation from young boys to old men, often barely equipped or trained, was mobilized and sent to the front. After an unsuccessful assassination attempt by a group of former leading politicians and military men on July 20, 1944, the regime of terror further tightened.

In the last days of the Third Reich, with the Russian troops in the suburbs of Berlin, Hitler entered into a last stage of desperation in his underground bunker in Berlin. He ordered Germany destroyed since it was not worthy of him; he expelled his trusted lieutenants Himmler and Goring from the party; and made a last, theatrical appeal to the German nation. Adolf Hitler committed suicide on April 30, 1945, leaving the last bits of unconquered German territory to the administration of non-Nazi Adm. Karl Doenitz.

Plato  c. 427BC – 347 （柏拉图）

Philosopher. According to sources, Plato was born on or around May 21, 427 (or 428) B.C. in Athens, the son of Ariston and Perictione, both of Athenian aristocratic ancestry. He lived his whole life in Athens, although he traveled to Sicily and southern Italy on several occasions, and one story says he traveled to Egypt. Little is known of his early years, but he was given the finest education Athens had to offer the scions of its noble families, and he devoted his considerable talents to politics and the writing of tragedy and other forms of poetry. His acquaintance with Socrates altered the course of his life. The compelling power which Socrates's methods and arguments had over the minds of the youth of Athens gripped Plato as firmly as it did so many others, and he became a close associate of Socrates.

The end of the Peloponnesian War (404 BC) left Plato in an irreconcilable position. His uncle, Critias, was the leader of the Thirty Tyrants who were installed in power by the victorious Spartans. One means of perpetuating themselves in power was to implicate as many Athenians as possible in their atrocious acts. Thus Socrates, as we learn in Plato's Apology, was ordered to arrest a man and bring him to Athens from Salamis for execution. When the great teacher refused, his life was in jeopardy, and he was probably saved only by the overthrow of the Thirty and the reestablishment of the democracy.

Plato was repelled by the aims and methods of the Thirty and welcomed the restoration of the democracy, but his mistrust of the whimsical demos was deepened some four years later when Socrates was tried on trumped up charges and sentenced to death. Plato was present at the trial, as we learn in the Apology, but was not present when the hemlock was administered to his master, although he describes the scene in vivid and touching detail in the Phaedo. He then turned in disgust from contemporary Athenian politics and never took an active part in government, although through friends he did try to influence the course of political life in the Sicilian city of Syracuse.

Plato and several of his friends withdrew from Athens for a short time after Socrates's death and remained with Euclides in Megara. His productive years were punctuated by three voyages to Sicily, and his literary output, all of which has survived, may conveniently be discussed within the framework of those voyages.

The first trip, to southern Italy and Syracuse, took place in 388-387 BC, when Plato made the acquaintance of Archytas of Tarentum, the Pythagorean, and Dion of Syracuse and his infamous brother-in-law, Dionysius I, ruler of that city. Dionysius was then at the height of his power and prestige in Sicily for having freed the Greeks there from the threat of Carthaginian overlordship. Plato became better friends with Dion, however, and Dionysius's rather callous treatment of his Athenian guest may be ascribed to the jealousy which that close friendship aroused. On Plato's return journey to Athens, Dionysius's crew deposited him on the island of Aegina, which at that time was engaged in a minor war with Athens, and Plato might have been sold as a
prisoner of war had he not been ransomed by Anniceris of Cyrene, one of his many admirers.

On his return to Athens, Plato began to teach in the Gymnasium Academe and soon afterward acquired property nearby and founded his famous Academy, which survived until the philosophical schools were closed by the Christian emperor Justinian in the early 6th century A.D. At the center of the Academy stood a shrine to the Muses, and at least one modern scholar suggests that the Academy may have been a type of religious brotherhood. Plato had begun to write the dialogues, which came to be the hallmark of his philosophical exposition, some years before the founding of the Academy. To this early period, before the first trip to Sicily, belong the Laches, Charmides, Euthyphro, Lysis, Protagoras, Hippias Minor, Ion, Hippias Major, Apology, Crito, and Gorgias. Socrates is the main character in these dialogues, and various abstractions are discussed and defined. The Laches deals with courage, Charmides with sophrosyne (common sense), Euthyphro with piety, Lysis with friendship, Protagoras with the teaching of arete (virtue), and so on. The Apology and Crito stand somewhat apart from the other works of this group in that they deal with historical events, Socrates's trial and the period between his conviction and execution. The unifying element in all of these works is the figure of Socrates and his rather negative function in revealing the fallacies in the conventional treatment of the topics discussed.

Plato’s own great contributions begin to appear in the second group of writings, which date from the period between his first and second voyages to Sicily. To this second group belong the Meno, Cratylus, Euthydemus, Menexenus, Symposium, Phaedo, Republic, Phaedrus, Parmenides, and Theaetetus. Development of ideas in the earlier dialogues is discernible in these works. The Meno carries on the question of the teachability of virtue first dealt with in Protagoras and introduces the doctrine of anamnesis (recollection), which plays an important role in Plato’s view of the human’s ability to learn the truth. Since the soul is immortal and has at an earlier stage contemplated the Forms, or Ideas, which are the eternal and changeless truths of the universe, humans do not learn, but remember.

The impetus for learning or remembering the truth is revealed in the Symposium, where the ascent from corporeal reality to eternal and incorporeal truth is described. The scene is a dinner party at the house of the tragic poet Agathon, and each guest contributes a short speech on the god Eros. Socrates, however, cuts through the Sophistic arguments of his friends and praises Eros not as a separate and independent god but as an intermediary between gods and men. It is Eros who causes men to seek beauty, although for a time the unenlightened lover may think that what he is really seeking is the corporeal body of his beloved. Ultimately, however, one progresses from love of the body to love of the beauty which the body represents, and so forth, until one realizes that the ultimate goal sought is contemplation of beauty itself and of the Forms. The Forms are the true reality and impart their essence in some way to ephemeral, corporeal objects, and man may come to know this true reality through rigorous discipline of mind and body, and Plato went so far as to draw up a rough outline for a utopian state in his Republic.

Socrates is again the main character in the Republic, although this work is less a dialogue than a long discussion by Socrates of justice and what it means to the individual and the city-state. The great utopian state is described only as an analogue to the soul in order to understand better how the soul might achieve the kind of balance and harmony necessary for the rational element to control it. Just as there are three elements to the soul, the rational, the less rational, and the impulsive irrational, so there are three classes in the state, the rulers, the guardians, and the workers. The rulers are not a hereditary clan or self-perpetuating upper class but are made up of those who have emerged from the population as a whole as the most gifted intellectually. The guardians serve society by keeping order and by handling the practical matters of government, including
fighting wars, while the workers perform the labor necessary to keep the whole running smoothly. Thus the most rational elements of the city-state guide it and see that all in it are given an education commensurate with their abilities.

The wisdom, courage, and moderation cultivated by the rulers, guardians, and workers ideally produce the justice in society which those virtues produce in the individual soul when they are cultivated by the three elements of that soul. Only when the three work in harmony, with intelligence clearly in control, does the individual or state achieve the happiness and fulfillment of which it is capable. The Republic ends with the great myth of Er, in which the wanderings of the soul through births and rebirths are recounted. One may be freed from the cycle after a time through lives of greater and greater spiritual and intellectual purity.

Plato's second trip to Syracuse took place in 367 B.C. after the death of Dionysius I, but his and Dion's efforts to influence the development of Dionysius II along the lines laid down in the Republic for the philosopher-king did not succeed, and he returned to Athens.

Plato's final group of works, written after 367, consists of the Sophist, the Statesman, Philebus, Timaeus, Critias, and the Laws. The Sophist, takes up the metaphysical question of being and not-being, while the Statesman concludes that the best type of city-state would be the one in which the expert is given absolute authority with no hindrance to his rule from laws or constitution. The Timaeus discusses the rationality inherent in the universe which confirms Plato's scheme, while the Laws, Plato's last work, once again takes up the question of the best framework in which society might function for the betterment of its citizens. Here great stress is laid on an almost mystical approach to the great truth of the rational universe.

Plato's third and final voyage to Syracuse was made some time before 357 B.C., and he was no more successful in his attempts to influence the young Dionysius than he had been earlier. Dion fared no better and was exiled by the young tyrant, and Plato was held in semicaptivity before being released. Plato's Seventh Letter, the only one in the collection of 13 considered accurate, perhaps even from the hand of Plato himself, recounts his role in the events surrounding the death of Dion, who in 357 B.C. entered Syracuse and overthrew Dionysius. It is of more interest, however, for Plato's statement that the deepest truths may not be communicated.

Plato died in 347 B.C., the founder of an important philosophical school, which existed for almost 1,000 years, and the most brilliant of Socrates's many pupils and followers. His system attracted many followers in the centuries after his death and resurfaced as Neoplatonism, the great rival of early Christianity.

Cromwell, Oliver  1599 – 1658  (奥利弗 克伦威尔)

English soldier and statesman, born in Huntingdon, Cambridgeshire, EC England, UK. Educated at Huntingdon and Cambridge, he studied law in London. A convinced Puritan, he sat in both the Short and the Long Parliaments (1640), and when war broke out (1642) fought for the parliament at Edgehill. He formed his unconquerable Ironsides, combining rigid discipline with strict morality, and it was his cavalry that secured the victory at Marston Moor (1644), while under Fairfax he led the New Model Army to decisive success at Naseby (1645). He quelled insurrection in Wales in support of Charles I, and defeated the invading army of Hamilton. He then brought the king to trial, and was one of the signatories of his death warrant (1649). Having established the Commonwealth, Cromwell suppressed the Levellers, Ireland (1649–50), and the Scots (under Charles II) at Dunbar (1650) and Worcester (1651). He dissolved the Rump of the Long Parliament (1653), and after the failure of his Barebone's Parliament, established a Protectorate (1653). He refused the offer of the crown in 1657. At home he reorganized the national Church, upheld toleration, and gave Scotland and Ireland parliamentary representation. Under him the Commonwealth became the head and champion of Protestant
Europe. He was succeeded by his son Richard Cromwell (1626–1712), who was forced into French exile in 1659.

Bell, Alexander Graham 1847 – 1922 (贝尔)

Inventor and educator. Born March 3, 1847, in Edinburgh, Scotland. Bell is best known for perfecting the telephone to transmit vocal messages by electricity. The telephone inaugurated a new age in communication technology.

Bell's father, Alexander Melville Bell, was an expert in vocal physiology and elocution; his grandfather, Alexander Bell, was an elocution professor. After studying at the University of Edinburgh and University College, London, Bell became his father's assistant. He taught the deaf to talk by adopting his father's system of visible speech (illustrations of speaking positions of the lips and tongue). In London he studied Hermann Ludwig von Helmholtz's experiments with tuning forks and magnets to produce complex sounds. In 1865, Bell made scientific studies of the resonance of the mouth while speaking.

In 1870, the Bells moved to Brantford, Ontario, Canada, to preserve Alexander's health. He went to Boston in 1871 to teach at Sarah Fuller's School for the Deaf, the first such school in the world. He also tutored private students, including Helen Keller. As professor of vocal physiology and speech at Boston University in 1873, he initiated conventions for teachers of the deaf. Throughout his life he continued to educate the deaf, and he founded the American Association to Promote the Teaching of Speech to the Deaf.

From 1873 to 1876, Bell experimented with a phonautograph, a multiple telegraph, and an electric speaking telegraph (the telephone). Funds came from the fathers of two of his pupils; one of these men, Gardiner Hubbard, had a deaf daughter, Mabel, who later became Bell's wife.

Inventing the Telephone

To help deaf children, Bell experimented in the summer of 1874 with a human ear and attached bones, a tympanum, magnets, and smoked glass. He conceived the theory of the telephone: an electric current can be made to change intensity precisely as air density varies during sound production. Unlike the telegraph's use of intermittent current, the telephone requires continuous current with varying intensity. That same year, Bell invented a harmonic telegraph, to transmit several messages simultaneously over one wire, and a telephonic-telegraphic receiver. Trying to reproduce the human voice electrically, he became expert with electric wave transmission. Bell supplied the ideas; Thomas Watson made and assembled the equipment. Working with tuned reeds and magnets to synchronize a receiving instrument with a sender, they transmitted a musical note on June 2, 1875. Bell's telephone receiver and transmitter were identical: a thin disk in front of an electromagnet.

On February 14, 1876, Bell's attorney filed for a patent. The exact hour was not recorded, but on that same day Elisha Gray filed his caveat (intention to invent) for a telephone. The U.S. Patent Office granted Bell the patent for the "electric speaking telephone" on March 7. It was the most valuable single patent ever issued, and it opened a new age in communication technology. Bell continued his experiments to improve the telephone's quality. By accident, Bell sent the first sentence, "Watson, come here; I want you," on March 10, 1876. The first demonstration occurred at the American Academy of Arts and Sciences convention in Boston two months later. Bell's display at the Philadelphia Centennial Exposition a month later gained more publicity, and Emperor Dom Pedro of Brazil ordered 100 telephones for his country. The telephone, accorded only 18 words in the official catalog of the exposition, suddenly became the "star" attraction.

Establishing an Industry

Repeated demonstrations overcame public skepticism. The first reciprocal outdoor conversation was
between by Bell and Watson (in Boston and Cambridge, Massachusetts, respectively) on October 9, 1876. In 1877, the first telephone was installed in a private home; a conversation was conducted between Boston and New York, using telegraph lines; in May, the first switchboard, devised by E. T. Holmes in Boston, was a burglar alarm connecting five banks; and in July, the first organization to commercialize the invention, the Bell Telephone Company, was formed.

That same year, while on his honeymoon, Bell introduced the telephone to England and France. The first commercial switchboard was set up in New Haven, Connecticut, in 1878, and Bell's first subsidiary, the New England Telephone Company, was organized that year. Switchboards were improved by Charles Scribner, with more than 500 inventions. Thomas Cornish, a Philadelphia electrician, had a switchboard for eight customers and published a one-page directory in 1878.

**Contesting Bell's Patent**

Other inventors had been at work. Between 1867 and 1873, Professor Elisha Gray (of Oberlin College) invented an "automatic self-adjusting telegraph relay," installed it in hotels, and made telegraph printers and repeaters. He tried to perfect a speaking telephone from his harmonic (multiple-current) telegraph. The Gray and Batton Manufacturing Company of Chicago developed into the Western Electric Company.

Another competitor was Professor Amos E. Dolbear, who insisted that Bell's telephone was only an improvement on an 1860 invention by Johann Reis, a German, who had experimented with pigs' ear membranes and may have made a telephone. Dolbear's own instrument, operating by "make and break" current, could transmit pitch but not voice quality.

In 1879, Western Union, with its American Speaking Telephone Company, ignored Bell's patents and hired Thomas Edison, along with Dolbear and Gray, as inventors and improvers. Later that year Bell and Western Union formed a joint company, with the latter getting 20 percent for providing wires, circuits, and equipment. Theodore Vail, organizer of Bell Telephone Company, consolidated six companies in 1881. The modern transmitter evolved mainly from the work of Emile Berliner and Edison in 1877 and Francis Blake in 1878. Blake's transmitter was later sold to Bell for stock.

The claims of other inventors were contested. Daniel Drawbaugh, from rural Pennsylvania, with little formal schooling, almost won a legal battle with Bell in 1884 but was defeated by a four to three vote in the Supreme Court. The claim by this "Edison of the Cumberland Valley" was the most exciting (and futile) litigation over telephone patents. Altogether, the Bell Company was involved in 587 lawsuits, of which five went to the Supreme Court; Bell won every case. A convincing argument was that no competitor claimed originality until 17 months after Bell's patent. Also, at the 1876 Philadelphia Exposition, eminent electrical scientists, especially Lord Kelvin, the world's foremost authority, had declared it to be "new." Professors, scientists, and researchers defended Bell, pointing to his lifelong study of the ear and his books and lectures on speech mechanics.

**The Bell Company**

The Bell Company built the first long-distance line in 1884, connecting Boston and New York. The American Telephone and Telegraph Company was organized by Bell and others in 1885 to operate other long-distance lines. By 1889, when insulation was perfected, there were 11,000 miles of underground wires in New York City.

The Volta Laboratory was started by Bell in Washington, D.C., with the Volta Prize money (50,000 francs, about $10,000) awarded by France for his invention. At the laboratory he and associates worked on various projects during the 1880s, including the photophone, induction balance, audiometer, and phonograph improvements. The photophone transmitted speech by light, using a primitive photoelectric cell. The induction
balance (electric probe) located metal in the body. The audiometer indicated Bell's continued interest in deafness. The first successful phonograph record, a shellac cylinder, as well as wax disks and cylinders, was produced. The Columbia Gramophone Company exploited Bell's phonograph records. With the profits Bell established the Volta Bureau in Washington to study deafness.

**Bell's Later Interests**

The magazine Science (later the official organ of the American Association for the Advancement of Science) was founded in 1880 because of Bell's efforts. He made numerous addresses and published many monographs. As National Geographic Society president from 1896 to 1904, he fostered the success of the society and its publications. In 1898 he became a regent of the Smithsonian Institution. He was also involved in sheep breeding, hydrodynamics, and aviation projects.

Aviation was Bell's primary interest after 1895. He aided Samuel Langley, invented the tetrahedral kite (1903), and founded the Aerial Experiment Association (1907), bringing together Glenn Curtiss, Francis Baldwin, and others. They devised the aileron control principle (which replaced "wing warping"), developed the hydroplane, and solved balance problems in flying machines. Curtiss furnished the motor for Bell's man-carrying kite in 1907.

Alexander Graham Bell died at Baddeck, Nova Scotia, on August 2, 1922.

**Fleming, Sir Alexander 1881 – 1955**

"I had no suspicion that I had got a clue to the most powerful therapeutic substance yet used to defeat bacterial infections in the human body. But the appearance of that culture plate was such that I thought it should not be neglected." - Alexander Fleming

Scientist, discoverer of penicillin. Born August 6, 1881, in Lochfield, Scotland.

"Had my laboratory been as up to date and as sterile as those that I have visited [in the United States], it is possible that I would have never run across penicillin." Thus did Alexander Fleming modestly downplay his own role in the discovery of a substance that even the most cautious scientists of his day enthusiastically referred to as a "wonder drug" for its ability to cure a wide range of often-fatal bacterial illnesses. Although more than 10 years passed between the time he first identified penicillin and another team of researchers successfully purified, tested, and produced it in mass quantities, Fleming conducted the initial experiments that served as the basis for all of their work. Penicillin's success ushered in an age of life-saving antibiotics, such as streptomycin, aureomycin, terramycin, and bacitracin, that "vastly changed not only the practice of medicine but also human expectations and attitudes about health," according to Edwin Kiester, Jr., in Smithsonian magazine.

One of eight children of Hugh Fleming, a farmer, Alexander Fleming grew up in the Scottish countryside. An outstanding student who faced limited career opportunities in his native country, he left home at the age of 13 to live with an older brother in London. There, he attended a polytechnic school and worked as an office boy for several years before deciding to become a doctor. Supported by scholarships as well as an inheritance from an uncle, Fleming enrolled at St. Mary's Hospital Medical School, later a part of the University of London. He performed brilliantly, winning numerous class prizes and taking honors in physiology, pharmacology, medicine, pathology, forensic medicine, and hygiene.

Immediately upon receiving his licentiate from the Royal College of Physicians in 1906, Fleming accepted a research position in bacteriology at St. Mary's. As a staff member in the Inoculation Department (later renamed the Wright-Fleming Institute of Microbiology), he worked as an assistant to Sir Almroth Wright, a distinguished British physician who pioneered the use of vaccine therapy to fight bacterial infections such as typhoid. In 1908, Fleming passed his final medical examinations and was awarded the Gold Medal of the
Following his graduation, Fleming divided his time between a research post at St. Mary's and a professorship in bacteriology at the University of London. The laboratory was his first love, however, and it was there that he spent most of his time. He even managed to continue his research during World War I as a member of the Royal Army Medical Corps. Disturbed by the high rate of death from infected wounds, Fleming began to question the effectiveness of treating dead or damaged tissue with certain antiseptics. In a series of ingenious experiments, he proved that the antiseptics then in use actually did more harm than good by killing the white cells of the immune system and thus making it easier for infection to develop.

After the war, Fleming returned to St. Mary's and resumed his study of bacteriology, focusing primarily on identifying some naturally occurring substance that could fight bacteria without harming healthy tissue or weakening the body's self-defense mechanisms. (Conventional medical wisdom had maintained for years that no drug given internally could destroy an infection without also killing the patient.) In 1921, he took a major step in that direction when he discovered that human tears and nasal mucus as well as egg whites all contained a similar chemical that dissolves some bacteria. He called the new antibiotic lysozyme and published several articles on its capabilities, but most scientists dismissed his findings.

Despite the lack of enthusiasm among his colleagues, Fleming continued his search for a better antibiotic. One day during the fall of 1928, he was in his basement laboratory checking some staphylococci bacteria cultures. One culture in particular caught his eye; accidentally left uncovered for several days, it had been contaminated by a mold spore that had blown in through the room's only window. Fleming was about to rinse off the dish when he noticed something highly unusual. In the area surrounding the greenish-blue spot of mold, the staphylococci had completely disappeared. Elsewhere on the plate, it was still thriving.

Intrigued, Fleming immediately began to grow more of the mold so that he could study its amazing properties. Over the next eight months, he discovered that it secreted a powerful substance, which he named "penicillin" after the Penicillium Chrysogenum notatum mold from which it originated. That substance destroyed not only staphylococci but also a number of other deadly bacteria, including streptococci and pneumococci. Testing small doses first on laboratory animals and later on himself, he also learned it was not toxic. The Penicillium mold proved to be extremely difficult to grow in the laboratory, however, and the meager amount of penicillin that could be extracted from a culture was unstable and tainted with foreign proteins. Fleming turned to a biologist friend for help, but neither scientist was able to come up with a way to produce enough pure penicillin to treat someone who was actually ill and thus demonstrate its potential as an antibiotic.

Hoping to interest others in tackling the problem, Fleming presented a report on his experiments at a meeting of bacteriologists in May 1929. Unfortunately, the presentation coincided with a surge of interest in the new sulfa drugs, which were then being heralded as the cure-all for infectious diseases. So the miraculous accomplishments of an airborne mold attracted little attention, and Fleming moved on to other research. But he did not give up on penicillin; just in case someone stepped forward with an idea, he kept a strain of the original mold growing in a corner of his laboratory.

By the late 1930s, it was clear that the sulfa drugs had been greatly overrated; they were not as effective as first believed, and they exhibited some toxic side effects, including kidney damage. With the prospect of another world war looming on the horizon, there was a sudden and urgent need for a new substance to combat wound infections. At Oxford University, the Australian-born pathologist Howard W. Florey searched through some old professional journals for clues to a possible breakthrough. In 1938, he came across Fleming's report on penicillin and paid a visit to the Scotsman, who gave him a sample of the Penicillium mold he had been
keeping alive in his laboratory.

Working with Ernst Chain, a chemist who had fled Nazi Germany, Florey verified all of Fleming's observations and encountered precisely the same problem: the mold produced very small amounts of penicillin, and extracting and purifying it before it lost its effectiveness was difficult. But some tests they ran on a few white mice infected with staphylococci proved that it did indeed work. Because the scientists had such a difficult time collecting enough penicillin to treat a human, however, their early tests in that area were less conclusive; several patients near death from infection responded quickly and dramatically when given a dose of penicillin but eventually died when the supply ran out before they were completely cured. Florey and Chain then concentrated all their efforts on producing enough purified penicillin to demonstrate its power on humans, and by 1941 they could document nearly 200 cases in which penicillin therapy had destroyed infections that otherwise would have been fatal.

The next step was to develop a way to mass-produce penicillin and thus interest major drug companies in manufacturing it. Unable to secure funding from Oxford for additional research, Florey and Chain turned to the United States, where they found the financial and technical help they needed. At the Northern Regional Research Laboratory in Peoria, Illinois, British and American scientists working together discovered a new growing medium for the mold that produced two hundred times more penicillin per liter than the old medium. By mid-1943, factories in England and the United States had geared up to produce some 400 million units of penicillin in a five-month period, a number that jumped to over nine billion units per month by the end of the year. Although initial production was designated for military use only, penicillin became available to the civilian population in 1944.

As co-discoverers of this wonder drug, Fleming and Florey were showered with honors. Both were knighted in 1944, and in 1945, Fleming, Florey, and Chain shared the Nobel Prize in medicine. None of them profited financially from the sale of penicillin, however. Fleming routinely gave any money he received to St. Mary's for research, even a $100,000 award of merit a group of American pharmaceutical firms presented to him in gratitude for his contribution to medical science. Due to the rather dramatic circumstances surrounding his accidental find, Fleming more so than Florey or Chain became an international celebrity. But he was always quick to credit the others with developing penicillin into a substance that doctors could use to treat their patients.

Despite the commotion caused by his sudden fame, Fleming continued to spend as much time as possible working quietly in his laboratory, his efforts focused on examining the bacteria-fighting capabilities of other molds. In 1946, he was named director of the Wright-Fleming Institute, a position he held until November 1954, when he retired to pursue his own research. On March 11, 1955, he died of a heart attack in London.

As time passed, the limitations of penicillin became more apparent. It could not cure all infections, for example, and it triggered allergic reactions in some people that were occasionally severe enough to result in death. But for untold millions, bacterial illnesses such as pneumonia, blood poisoning, gangrene, and even strep infections were no longer the dreaded killers they once had been. Taking that fact alone into account, declared the eminent British physician Lord Horder upon Alexander Fleming's death, the discoverer of penicillin "conferred a benefit upon humanity that is quite incalculable."

Locke, John  1632 – 1704  （洛克：英国哲学家）

Philosopher. Born August 29, 1632 in Wrington, in Somerset, where his mother's family resided. She died during his infancy, and Locke was raised by his father, who was an attorney in the small town of Pensford near Bristol. He was tutored at home because of his delicate health and the outbreak of civil war in 1642. When he
was 14, he entered Westminster School, where he remained for 6 years. He then went to Christ Church, Oxford. In 1658 he was elected a senior student at his college. In this capacity he taught Greek and moral philosophy. Under conditions at the time he would have had to be ordained to retain his fellowship. Instead he changed to another faculty, medicine, and eventually received a license to practice. During the same period Locke made the acquaintance of Robert Boyle, the distinguished scientist and one of the founders of the Royal Society, and, under Boyle's direction, took up study of natural science. Finally, in 1668, Locke was made a fellow of the Royal Society.

In 1665 Locke traveled to the Continent as secretary to the English ambassador to the Brandenburg court. Upon his return to England he chanced to medically attend Lord Ashley, 1st Earl of Shaftesbury, and later lord chancellor of England. Their friendship and lifelong association drew Locke into political affairs. He attended Shaftesbury as physician and adviser, and in this latter capacity Locke drafted The Fundamental Constitutions of Carolina and served as secretary to the Board of Trade. In 1676 Locke went to France for his health. An inheritance from his father made him financially independent, and he remained in Montpellier for 3 years.

Locke rejoined Shaftesbury's service, and when the latter fled to Holland, the philosopher followed. He remained in exile from 1683 to 1689, and during these years he was deprived of his studentship by express order of Charles III. Most of his important writings were composed during this period. After the Glorious Revolution of 1689 Locke returned to England and later served with distinction as a commissioner of trade until 1700. He spent his retirement at Oates in Essex as the guest of the Mashams. Lady Masham was the daughter of philosopher Ralph Cudworth. Locke died there on October 28, 1704. Locke, by virtue of his temperament and mode of existence, was a man of great circumspection. None of his major writings was published until he was nearly 60. In 1690 he brought out his major works: Two Treatises and the Essay Concerning Human Understanding. But the four books of the Essay were the culmination of 20 years of intellectual labor. He relates that, together with a few friends, probably in 1670, a discussion arose concerning the basis of morality and religion. The conclusion was that they were unable to resolve the question until an investigation had been made to see "what objects our understandings were or were not fitted to deal with." Thus the aim of this work is "to inquire into the origin, certainty, and extent of human knowledge, together with the grounds of belief, opinion, and assent."

The procedure employed is what he called the "historical, plain method," which consists of observations derived from external sensations and the internal processes of reflection or introspection. This psychological definition of experience as sensation and reflection shifted the focus of philosophy from an analysis of reality to an exploration of the mind. The new perspective was Locke's major contribution, and it dominated European thought for at least 2 centuries. But if knowledge consists entirely of experience, then the objects of cognition are ideas. The term "idea" was ambiguously defined by Locke as "whatsoever is the object of the understanding when a man thinks." This broad use means that sensations, memories, imaginings, and feelings as well as concepts are ideas insofar as they are mental. The danger of Locke's epistemology is the inherent skepticism contained in a technique that describes what is "in" the mind. For if everything is an idea, then it is difficult to distinguish between true and false, real and imaginary, impressed sensations and expressed concepts. Thus Locke, and the subsequent history of philosophy, had to wrestle with the dilemma that a psychological description of the origin of ideas seriously undermines the extent of their objective validity.

Nonetheless the intention of the Essay was positive in that Locke wished to establish the dependence of all human knowledge upon everyday experience or sensation. The alternative theory of innate ideas is vigorously attacked. Although it is not historically certain whether anyone seriously maintained such a doctrine,
Locke’s general criticism lends indirect support to an experiential view of knowledge. Innatism can be understood in a naive way to mean that there are ideas of which we are fully conscious at birth or which are universally acknowledged, so that the mind possesses a disposition to think in terms of certain ideas. The first position is refuted by observation of children, and the second by the fact that there are no acknowledged universal ideas to which everyone agrees. The sophisticated version falls into contradiction by maintaining that we are conscious of an unconscious disposition.

Having refuted the a priori, or non-experiential, account of knowledge, Locke devotes the first two books of the Essay to developing a deceptively simple empirical theory of knowledge. Knowing originates in external and internal sources of sensation and reflection. The objects or ideas present to consciousness are divided into simple and complex. Simple ideas are primitive sense data, which the mind passively receives and cannot alter, delivered by one sense (seeing blue), by several senses (eating an orange as a synthesis of taste, touch, and smell), by reflection (hunger), or by a combination of sensation and reflection (pleasure and pain). The objective orientation of simple ideas follows from the fact that we cannot add or subtract from their appearance or conception in the mind. In relation to simple ideas, at least, the mind is passive, a "blank" or "white" tablet upon which sensations are impressed. Complex ideas are formed by actively combining, comparing, or abstracting simple ideas to yield "modes, substances, and relations." Modes are class concepts or ideas that do not exist independently, such as beauty. Substance is a complex idea of the unity of substrate of the simple qualities we perceive. And relations are the powers in objects capable of causing minds to make comparisons, for example, identity and cause and effect. The difficulty is that complex ideas do not relate to perceivable existents, but hopefully, complex ideas do express elements or characteristics of the real world.

Locke is faced with an acute dilemma. If the immediate object of knowledge is an idea, then man possesses only a derivative knowledge of the physical world. To know the real world adequately requires a complex idea that expresses the relation between the qualities that we perceive subjectively and the unperceived existent. The substance which unites the common perceived qualities of figure, bulk, and color into this one existing brown table is, in Locke’s terms, an "I don’t know what." His honesty almost brought Locke to a modern relational definition of substance instead of the traditional notion of a thing characterized by its properties. But the conclusion drawn in the Essay is that knowledge is relational; that is, it consists in the perception "of the agreement or disagreement among ideas." For if Locke had argued that knowledge expresses an adequation between the complex idea in the mind and the real object, then man would have the power to go beyond ideas to the object itself. But this is impossible, since every object is, by definition, an idea, and thus ironically, experiential knowledge is not about real objects but only about the perceived relations of ideas.

The third book of the Essay deals with words, and it is a pioneer contribution to the philosophy of language. Locke is a consistent nominalist in that for him language is an arbitrary convention and words are things which "stand for nothing but the ideas in the mind of the man that has them." Each man’s understanding can be confirmed by other minds insofar as they share the same linguistic conventions, although one of the singular abuses of language results from the fact that we learn names or words before understanding their use.

The purpose of Locke’s analysis is to account for generalization, abstraction, and universals in terms of language. Generalizations are the result of drawing, or abstracting, what is common to many. In this sense, generalizations and universals are inventions of the mind which concern only signs. But they have a foundation in the similitude of things. And those class concepts that have a fixed meaning and definition can be understood as essences, but they are only nominal and not real. The difference between our knowledge and reality is like
that between seeing the exterior of Big Ben and understanding how the clock works.

The final section of the Essay deals with the extent, types, and divisions of knowledge. This work seems to have been written earlier than the others, and many of its conclusions are qualified by preceding material. The agreement or disagreement of ideas, which constitutes knowledge, consists of identity and diversity, perceived relations, coexistence or real existence known by way of intuition, and demonstration or sensation of a given existent.

In this view the actual extent of man's knowledge is less than his ideas because he does not know the real connections between simple ideas, or primary and secondary qualities. Also, an intuitive knowledge of existence is limited to the self, and the only demonstrable existence is that of God as an eternal, omnipotent being. With the exception of the self and God, all knowledge of existing things is dependent upon sensation, whose cognitive status is "a little bit better than probability." The poverty of real knowledge is compensated to some extent by human judgment, which presumes things to be true without actually perceiving the connections. And, according to Locke's commonsense attitude, the severe restrictions placed upon knowledge merely reflect that man's mental capacity is suitable for his nature and condition.

Beethoven, Ludwig van 1770 – 1827 (贝多芬)

Composer. Born December 16 (some sources say December 17), 1770 in Bonn, Germany. The instrumental music of the German composer Ludwig van Beethoven forms a peak in the development of tonal music and is one of the crucial evolutionary developments in the history of music as a whole.

The early compositions of Ludwig van Beethoven marked the culmination of the 18th-century traditions for which Haydn and Mozart had established the great classical models, and his middle-period and late works developed so far beyond these traditions that they anticipated some of the major musical trends of the late 19th century. This is especially evident in his symphonies, string quartets, and piano sonatas.

In each of these three genres Beethoven began by mastering the existing formal and esthetic conventions of the late 18th century while joining to these conventions signs of unusual originality and power. In his middle period (from about 1803, the year of the Eroica Symphony, to about 1814, the year of his opera Fidelio in its revised form) he proceeded to develop methods of elaboration of musical ideas that required such enlargement and alteration in perception of formal design as to render it clear that the conventions associated with the genres inherited from the 18th century were for him the merest scaffolding for works of the highest individuality and cogency.

If Beethoven's contemporaries were able to follow him with admiration in his middle-period works, they were left far behind by the major compositions of his last years, especially the last three Piano Sonatas, Op. 109, 110, and 111; the Missa solemnis; the Ninth Symphony; and the last six String Quartets, Op. 127, 130, 131, 132, 133, and 135. These works required more than a generation after Beethoven's death to be received at all by concert audiences and were at first the preserve of a few perceptive musicians. Composers as different in viewpoint from one another as Brahms and Wagner took Beethoven equally as their major predecessor; Wagner indeed regarded his own music dramas as the legitimate continuation of the Beethoven tradition, which in his view had exhausted the possibilities of purely instrumental music. Beethoven's last works continue in the 20th century to pose the deepest challenges to musical perception.

Years in Bonn

Ludwig van Beethoven was born in Bonn, the Rhineland seat of an electoral court. His ancestors were Flemish (the "van" was no indication of any claim to nobility but merely part of the name). His father, a tenor in the electoral musical establishment, harbored ambitions to create in his second son a prodigy like Mozart. As
Beethoven developed, it became increasingly clear that to reach artistic maturity he would have to leave provincial Bonn for a major musical center. At the age of 12 he was a promising keyboard virtuoso and a talented pupil in composition of the court musician C. G. Neefe.

In 1783 Beethoven's first published work, a set of keyboard variations, appeared, and in the 1780s he produced the seeds of a number of later works. But he was already looking toward Vienna: in 1787 he traveled there, apparently to seek out Mozart as a teacher, but was forced to return owing to his mother's illness. In 1790, when the eminent composer Joseph Haydn passed through Bonn, Beethoven was probably introduced to him as a potential pupil.

**Years in Vienna**

In 1792 Beethoven went to Vienna to study with Haydn, helped on his way by his friend Count Ferdinand von Waldstein, who wrote prophetically in the 22-year-old Beethoven's album that he was going to Vienna "to receive the spirit of Mozart from the hands of Haydn." What he actually received from Haydn in lessons was little enough, and Beethoven turned to others of lesser talent in Vienna for help with counterpoint, including the contrapuntal theorist J. G. Albrechtsberger.

Beethoven rapidly proceeded to make his mark as a brilliant keyboard performer and improviser and as a gifted young composer with a number of works to his credit and powerful ambitions. He won entry into the musical circles of the Viennese titled upper classes and gained a number of lifelong friends and admirers among them. In 1795 his first mature published works appeared—the three Piano Trios, Op. 1—and his career was in effect officially launched. From then until the end of his life Beethoven was essentially able to publish his works at approximately the rate at which he could compose them, if he wished to; in consequence the opus numbers of his major works are, with a few trivial exceptions, the true chronological order of his output. No such publication opportunities had existed for Haydn or Mozart, and least of all for Schubert, who spent his entire life in Vienna (1797-1828) in Beethoven's shadow, from the publication standpoint.

From 1792 to his death in 1827 at the age of 57 Beethoven lived in Vienna, essentially as a private person, unmarried, amid a circle of friends, independent of any kind of official position or private service. He rarely traveled, apart from summers in the countryside. In 1796 he made a trip to northern Germany, perhaps to look over the possibilities for a post; his schedule included a visit to the Berlin court of King Frederick William of Prussia, an amateur cellist, and the Op. 5 Violoncello Sonatas appear to date from this trip. Later Beethoven made several trips to Budapest and to spas in Bohemia.

In 1808 Beethoven received an invitation to become music director at Kassel. This alarmed several of his wealthy Viennese friends into unprecedented generosity; three of them (Princes Lichnowsky and Kinsky and Archduke Rudolph) formed a group of backers and agreed to guarantee Beethoven an annual salary of 1,400 florins on condition that he remain in Vienna. He thus became, in principle, one of the first musicians in history to be freed from menial service and to be enabled potentially to live as an independent artist—although, as it happened, the uncertain state of the Austrian economy in the Napoleonic era caused a sharp devaluation of the currency, cutting the value of his annuity, and he also had some trouble collecting it.

**Publishing Practices of the Time**

Although publishers sought Beethoven out and he was an able manager of his own business affairs, as his letters show, he was really at the mercy of the chaotic and unscrupulous publishing practices of his time. Publishers paid a fee to composers for rights to their works, but neither copyright nor royalties were known. As each new work appeared, Beethoven sold it as dearly as he could to the best and most reliable current publisher (sometimes to more than one). But this initial payment was all he could expect, and both he and his
publisher had to contend with piracy by rival publishers who brought out editions of their own. Consequently, Beethoven witnessed a vast multiplication of his works in editions that were unauthorized, unchecked, and often unreliable in details. Even the principal editions were frequently no better, and several times during his life in Vienna, Beethoven hatched plans for a complete, authorized edition of his works. None of them materialized, and the wilderness of editions forms the historical background to the present problems of producing a truly scrupulous complete edition.

Far overshadowing these general conditions were the two particular personal problems that beset Beethoven, especially in later life: his deafness and his obsessive relationship with his nephew Karl. Beethoven began to suffer from deafness during his early years in Vienna, and his condition gradually grew worse, despite remissions. So severe was the problem as early as 1802 that he actually seems to have contemplated suicide, as can be inferred from the so-called Heiligenstadt Testament, a private document written that year. It shows clear evidence of his deep conflict over his sense of artistic mission and his fear of inability to hear normally, to use the sense that should have been his most effective and reliable one. The turning points in his deafness actually came only later: first, about 1815, when he was compelled to give up all hope of performing publicly as a pianist (his Fifth Piano Concerto was written in 1809, an unfinished concerto in 1815); and after 1818, when he was no longer able to converse with visitors, who were thus forced to use writing pads to communicate (the famous "Conversation Books").

The second overriding problem (apart from his lifelong inability to form a lasting attachment to one woman, despite many liaisons) arose when he became the guardian of his nephew Karl on the death of his brother in 1815. Karl proved to be erratic and unstable, and he was a continuing source of anxiety to an already vulnerable man. Beethoven's deafness and his undoubted tendency toward impetuousness and irascibility contributed to his reputation as a misanthropic and antisocial personality, one to be watched from afar and approached only with caution. As he retreated further into his work and as the works themselves became increasingly less comprehensible to his average contemporaries, the Vienna of light music and Gemütlichkeit saw him more and more as a kind of living embodiment of the artist beyond society. Later, as writers of the 19th century continued to cultivate this view of art, Beethoven became one of its mythical representatives, and his earlier biographers spread the image widely. Only by a careful reading of Beethoven's letters and the winnowing of reliable accounts from fanciful ones can one obtain a more balanced picture, in which one sees a powerful and self-conscious man, wholly engaged in his creative pursuits but alert to their practical side as well, and occasionally willing to conform to current demands (for example, the works written on commission, such as his cantata for the Congress of Vienna, 1814).

Beethoven's deafness was the major barrier to a continued career as the social lion of his early Vienna years, and it must inevitably have colored his personality deeply. But his complex development as an artist would probably in any event have sooner or later brought a crisis in his relationship to the surface of contemporary musical and social life. The trend was inward: in his early years he wrote as a virtuoso pianist-composer for an immediate and receptive public; in his second period he wrote for an ideal public; in his last years he wrote for himself. It has long been commonplace in Beethoven biography to stress his awareness of contemporary political and philosophical thought, particularly his attachment to the libertarian ideals of the French Revolution and his faith in the brotherhood of men as expressed in his lifelong ambition to compose a setting of Friedrich Schiller's "Ode to Joy," realized at last in the Ninth Symphony. Frequently emphasized too is his undoubtedly genuine love of nature and outdoor life. But it is equally clear that no worthwhile estimate of Beethoven can be founded on a simple equation of these personal ideals with his music.
**Brief Summary of Beethoven's Works**

The general pattern of Beethoven's development as a composer is from a brilliant and prolific early manhood to the slow, painstaking efforts of his later years, in which his rate of production of new works dropped sharply in precise proportion as the works themselves became vastly more complex. The longest continuous thread in his development is that of his sketchbooks, which he used assiduously throughout his career and kept carefully, long after their contents had apparently been fully spent. This was not due to mere self-consciousness and an evident desire to keep close track of his own development; in this way he maintained a usable store of potential ideas and means of elaboration. Sometimes an idea from earlier years crops up in later work; in addition, Beethoven was strongly given to revision as well as elaboration, and at times he could not resist carrying out several modes of developing a single thematic idea. One example is the subject of the finale of the Eroica Symphony, which also appears as an orchestral dance and as the basis for a powerful set of piano variations, Op. 35. Other wholesale revisions of finished works include the three overtures to his opera Leonore, as well as the opera itself (first version 1805, second 1806), revised again and called Fidelio (1814) with still another overture.

**First Period**

The division of Beethoven's career into three phases originated with A. Schindler and W. von Lenz in the mid-19th century and forms a convenient means of reference. The first period, extending from his beginnings in Bonn to about 1802, shows a wide spectrum of compositions in virtually every genre of the time. The major works of this phase are the First and Second Symphonies, the first three Piano Concertos (written for his own performance and withheld from publication for some years), the first six String Quartets (Op. 18), much piano chamber music, and more than half of the 32 Piano Sonatas. The piano plays a conspicuous role in Beethoven's early work, reflecting his dual ambition as composer and performer, and as an instrument it was his major vehicle for technical experimentation. He was the first to exploit a number of pianistic effects, such as the pedal and the use of registral extremes, in a way that foreshadowed much in later piano music.

In Beethoven's early works one can distinguish two extremes: at one extreme are compositions that lean strongly toward a deliberate note of popular appeal; at the other extreme are the most serious and inwardly developed compositions. Many early works also employ the principle of formal structure associated with the classical variation technique. This emphasis is significant; it relates to his talent for improvisation, suggests his sense of contact with popular music, and at the same time prefigures his later growth in the direction of the elaboration of inherently simple musical ideas.

**Second Period**

The works of Beethoven's middle years form an extraordinary procession of major compositions, entirely departing from the traditional proportions and, to some extent, the methods of earlier tonal music. The earlier "facile" level of composition is abandoned, and occasional regressions to earlier types of movement structure are suppressed (for example, the substitution of a conventional slow movement by a tightly compressed slow introduction to the finale in the Waldstein Piano Sonata, Op. 53). Even the most superficial view of Beethoven's new scheme of musical design must include the following observations. He works now with the intensive elaboration of single ideas, to an extent never previously attempted in classical instrumental music (for example, the first movement of the Fifth Symphony). He extends the time scale of the three-or four-movement formal scheme to a high degree (for example, the Eroica Symphony, the unusual length of which was noted by the composer on his autograph manuscript). He replaces the old third movement of the symphony and the quartet (minuet or other medium-tempo dance form) with a dynamic and rapid movement, always called scherzo (this
had already been done in early works). He brings about the dramatization of instrumental effects and musical components to an unprecedented degree, partly through the juxtaposition of strongly dissimilar musical ideas, partly through the ingenious use of means of establishing expectations of a particular kind and then either delaying them or turning in an unexpected direction. The last works that can be associated with this phase of activity issue onto a period of cessation of continuous composition—a kind of twilight area that separates the second period from the last and reaches from about 1815 to perhaps 1818. It marks the onset of Beethoven's extreme deafness and of his difficulties with his nephew but also the preparation for musical tasks of unparalleled complexity in this time.

Third Period

To attempt to characterize any truly significant aspects of Beethoven's last works in a few words would be beyond effrontery. The order of their composition is essentially the order of publication and thus of their opus numbers; and the great peaks of the last years are hedged in and about with a few smaller works tossed off to make money or to maintain the interest of avaricious publishers.

The procession of great monuments is essentially as follows: the last five Piano Sonatas (Op. 101, 106 called the Hammerklavier, 109, 110, and 111) written between 1815 and 1822; the Missa solemnis (1823); the Ninth Symphony (prefigured as early as 1815 and completed in 1824); and the last Quartets (from 1824 to 1826). Superficially obvious in these works is either vast expansion over the dimensions of even Beethoven's earlier works in the genre (for example, Ninth Symphony; the Missa solemnis; the Hammerklavier Sonata; and the Quartet, Op. 131) or extreme compression (for example, Op. 111, the last Piano Sonata, in two movements; and the Quartet, Op. 135). Obvious too is the renewed emphasis on fugal techniques, reflecting a lifelong desire to master the devices of tonal polyphony on a level to match that of Johann Sebastian Bach, whom Beethoven admired. The fugal movements include those in the Piano Sonatas, Op. 106 and 110; the Missa solemnis; the Ninth Symphony (parts of the scherzo and finale); and above all the Grand Fugue, Op. 133, originally designed as the finale for the Quartet, Op. 130, but then made a separate composition, with a new finale written for Op. 130.

The vastness and imaginative complexity of Beethoven's last works, especially the Quartets, baffled not only his contemporaries but later audiences and even professional musicians for some time after his death. In various ways they seem the fully logical outcome of a lifetime of deep exploration of the possibilities of tonal structure; in other ways they seem to exceed in depth almost any of Beethoven's other music and perhaps that of any other subsequent composer. That Beethoven himself was aware that they were beyond the capacities of the listeners of his time seems beyond doubt; that he expected later audiences to meet them with the requisite seriousness of interest and intent is, to judge from what is known of his character, a fair inference. An anecdote, perhaps apocryphal but entirely fitting, reports that Beethoven told a visitor who was bewildered by his last quartets, "They are not for you but for a later age."

Heisenberg, Werner (Karl) 1901–1976 (海森堡, 沃纳: 德国物理学家)

Theoretical physicist, born in Würzburg, Germany. He studied at Munich and Göttingen. After a brief period working with Max Born (1923) and Niels Bohr (1924–7), he became professor of physics at Leipzig (1927–41), director of the Kaiser Wilhelm Institute in Berlin (1941–5), and director of the Max Planck Institute at Göttingen (and from 1958 at Munich). He developed a method of expressing quantum mechanics in matrices (1925), and formulated his revolutionary principle of indeterminacy (the uncertainty principle) in 1927. He was awarded the 1932 Nobel Prize for Physics.

Daquerre, Louis Jacques Mande 1787–1851 (达盖尔法国画家, 达盖尔银版摄影法的发明者)
Inventor, painter, stage designer. Born November 18, 1787, in Cormeilles-en-Parisis, France. Daguerre is best known as the inventor of the daguerreotype, the first practical and commercially successful photographic process.

Abandoning his architectural training in 1804, Daguerre turned to scene painting and became a pupil of I.E.M. Degotti at the Paris Opera. In 1822, Daguerre and Charles Bouton developed the diorama, a large-scale peep show in which a painting on a large translucent screen was seemingly animated by the skillful play of light on each side. Daguerre pursued the fabrication of dioramas for 17 years.

Daguerre used the camera obscura to make sketches for his stage designs and, like so many others, wished to avoid the tedious tracing and fix the image chemically. After several unsuccessful efforts, he learned in 1826 that J. N. Niepce was working toward the same end and had made some progress. A cautious correspondence followed, in which Niepce revealed his heliograph process, and in 1829, Daguerre and Niepce formed a partnership to develop the method.

Heliography depended on the hardening action of sunlight on bitumen and the subsequent dissolution of the soft shadow parts of the image. Using this method on a glass plate, Niepce had obtained and fixed a photograph from the camera obscura in 1826. But his aspirations went beyond a visible image to a photoengraved plate from which he could pull prints. This goal led to his using bitumen on silver-coated copperplates and then iodizing the silver revealed after dissolving the unexposed bitumen. The removal of the hardened bitumen produced a silver-silver iodide image. But Niepce went no further.

Building on his partner's foundation, Daguerre discovered the light sensitivity of silver iodide in 1831, but was unable to obtain a visible image. His discovery in 1835 that the latent image present on a silver iodide plate exposed for so short a time as 20 minutes could be developed with mercury vapor marked a major advance. Fixing was achieved in 1837, when he removed the unreduced silver iodide with a solution of common salt. Having improved Niepce's process beyond recognition, Daguerre felt justified in calling it the daguerreotype. He ceded the process to the French government and revealed his discovery on August 19, 1839.

Daguerre retired to Bry-sur-Marne in 1840 and died there on July 10, 1851. He had little more to do with the daguerreotype, leaving its improvement to others. It was perhaps the invention that most caught popular fancy in the mid-19th century, but it proved to be a blind alley in the development of modern photography.

Buckner, Simon Bolivar 1823 – 1914 (玻利瓦尔)

Confederate soldier, born near Munfordville, Kentucky, USA. He graduated from West Point in 1844 and saw extensive action during the Mexican War. Buckner entered Confederate service as a brigadier general in September 1861. In February 1862, after his two senior officers escaped to safety, he surrendered Fort Donelson, Kentucky, USA, to General Grant after receiving Grant's famous "unconditional surrender" message; exchanged later in 1862, Buckner commanded a wing of Bragg's army at Chickamauga. After the war, he edited a Louisville newspaper and served as Democratic governor of Kentucky from 1887 to 1892.

Descartes, René (, Lat Renatius Cartesius) 1596 – 1650 (笛卡儿)

Rationalist philosopher and mathematician, born in La Haye, France. Trained at the Jesuit College at La Flèche, he remained a Catholic throughout his life, but soon became dissatisfied with scholasticism. While serving in the Bavarian army in 1619, he conceived it to be his task to refund human knowledge on a basis secure from scepticism. He expounded the major features of his project in his most famous work, the Meditationes de prima philosophia (1641, Meditations on First Philosophy). He began his enquiry by claiming that one can doubt all one's sense experiences, even the deliverances of reason, but that one cannot doubt one's own existence as a thinking being: cogito, ergo sum ("I think, therefore I am"). From this basis he argued
that God must exist and cannot be a deceiver; therefore, his beliefs based on ordinary sense experience are correct. He also argued that mind and body are distinct substances, believing that this dualism made possible human freedom and immortality. His Discours de la m"{e}thode pour bien conduire sa raison, et chercher la v"{e}rit"{e}; dans les sciences (1637, Discourse on the Method for Rightly Conducting One's Reason and Searching for Truth in the Sciences) contained appendices in which he virtually founded co-ordinate or analytic geometry, and made major contributions to optics. In 1649 he moved to Stockholm to teach Queen Christina of Sweden.

Michelangelo (di Lodovico Buonarroti Simoni)  1475 – 1564 (米开朗基罗)

Painter, sculptor, architect. Born March 6, 1475 in Caprese, a village where his father was briefly serving as a Florentine government agent. The family, of higher rank than most from which artists came in Florence, had been bankers, but Michelangelo's grandfather had failed, and his father, too genteel for trade, lived on the income from his land and a few official appointments. Michelangelo's mother died when he was six.

After grammar school, Michelangelo was apprenticed at the age of 13 to Domenico Ghirlandaio, the most fashionable painter in Florence. That this should have happened is surprising, and no satisfactory explanation has been proposed. Michelangelo's implication in his old age that he had to overcome his family's opposition is likely to be mythical in part. In any case, after a year his apprenticeship was broken off, he was given access to the collection of ancient Roman sculpture of the ruler of Florence, Lorenzo de' Medici, dined with the family, and was looked after by the retired sculptor who was in charge of the collection. This arrangement was quite unprecedented at the time.

Michelangelo's earliest sculpture, a stone relief executed when he was about 17, in its composition echoes the Roman sarcophagi of the Medici collection and in its subject, the Battle of the Centaurs, a Latin poem a court poet read to him. Compared to the sarcophagi, Michelangelo's work is remarkable for the simple, solid forms and squarish proportions of the figures, which add intensity to their violent interaction.

Soon after Lorenzo died in 1492, the Medici fell from power and Michelangelo fled the city. In Bologna in 1494 he obtained a small but distinguished commission to carve the three saints needed to complete the elaborate tomb of St. Dominic in the church of S. Domenico. They too show dense forms, which contrast with the linear forms, either decorative or realistic, then dominant in sculpture, but are congruent with the work of Nicola Pisano, who had begun the tomb about 1265. On returning home Michelangelo found Florence dominated by the famous ascetic monk Savonarola. Michelangelo was in contact with the junior branch of the Medici family, and he carved a Cupid (lost) which he took to Rome to sell, palming it off as an ancient work.

In Rome, Michelangelo next executed a Bacchus for the garden of ancient sculpture of a banker. This, Michelangelo's earliest surviving large-scale work, shows the god teetering, either drunk or dancing. It is his only sculpture meant to be viewed from all sides; all the others, generally set in front of walls, possess to some extent the visual character of reliefs.

In 1498, through the same banker, came Michelangelo's first important commission: the Pieta now in St. Peter's. (The term Pieta refers to a type of image in which Mary supports the dead Christ across her knees; Michelangelo's version is today the most famous one.) On his return to Florence in 1501, Michelangelo was recognized as the most talented sculptor of central Italy. But his work was still in the early Renaissance tradition, as is the marble David, commissioned in 1501 for Florence Cathedral but when finished, in 1504, more suitably installed in front of the Palazzo Vecchio. (The original is now in the Accademia; the statue at the original site is a copy.) It shares the clear and strong but bland presence of the Pieta. Before he finished the David, Michelangelo's style had begun to change, as indicated by his drawing of a very different bronze David (lost) and by other works, particularly the Battle of Cascina. All these works resulted from the city fathers' desire to
revive monumental public art, characteristic of the period before the Medici early in the 15th century. The new Council Hall of the Palazzo Vecchio was to have patriotic murals that would also show the special skills of Florence's leading artists: Leonardo da Vinci and Michelangelo.

Michelangelo's Battle of Cascina was commissioned in 1504; several sketches and a copy of the cartoon exist. The central scene shows a group of muscular nudes, soldiers climbing from a river where they had been swimming, to answer a military alarm. Inevitably Michelangelo felt the influence of Leonardo and his evocation of continuous flowing motion through living forms. Michelangelo's greatness lay partly in his ability to absorb Leonardo's innovations and yet not reduce the heavy solidity and impressive dignity of his earlier work. This fusion of throbbing life with colossal grandeur henceforth was the special quality of Michelangelo's art.

From then on too Michelangelo's work consisted mainly of very large projects that he never finished because of his inability to turn down the vast commissions of his great clients who appealed to his preference for the grand scale. Of the 12 Apostles he was to execute for Florence Cathedral, he began only the St. Matthew.

The project of the Apostles was put aside when Pope Julius II called Michelangelo to Rome in 1505 to design his tomb, which was to include about 40 life-size statues. This project occupied Michelangelo off and on for the next 40 years. Of it he wrote, "I find I have lost all my youth bound to this tomb." In 1506 a dispute over funds for the tomb led Michelangelo, who had spent almost a year at the quarries in Carrara, to flee to Florence. Reconciliation between Julius II and Michelangelo took place in Bologna, which the Pope had just conquered, and Michelangelo modeled a colossal bronze statue of Julius for S. Petronio in Bologna, which he completed in 1508 (destroyed).

In 1508 Julius commissioned Michelangelo to decorate the ceiling of the chief Vatican chapel, the Sistine. This work was relatively modest at first, and Michelangelo felt he was being pushed aside by rival claimants on funds. But he soon was able to alter the traditional format of ceiling painting, whereby only single figures could be represented, not scenes calling for dramas in space; his introduction of dramatic scenes was so successful that it set the standard for the future.

The elaborate program with hundreds of figures was arranged in an original framing system that was Michelangelo's earliest architectonic design. He approached the ceiling as a surface on which to attach planes built up in various degrees of projection, like a relief sculpture except that its basic units are blocks rather than malleable forms. The many planes and painted architectural framework make the many categories of images so easily readable that the framing system tends to pass unnoticed, but its rich, heavy ornament is typical of the High Renaissance. The chief figural elements of the program are the 12 male and female prophets (the latter known as sibyls) and the nine stories from Genesis. Michelangelo began painting at the end of the story, with the three Noah scenes and the adjacent prophets and sibyls, and in 4 years worked through the three Adam stories to the three Creation stories at the other end of the ceiling.

As soon as the ceiling was completed in 1512, Michelangelo returned to the tomb of Julius and carved for it (1513-1514) the Moses (S. Pietro in Vincoli, Rome) and two Slaves (Louvre, Paris), using the same types he employed for the prophets and their attendants painted in the Sistine ceiling. From now on the successive popes determined Michelangelo's activity, as they were all anxious to have work by the recognized greatest maker of monuments for themselves, their families, and the Church.

In 1520 Michelangelo was commissioned to execute a tomb chapel for two young Medici dukes. The Medici Chapel (1520-1534), an annex to S. Lorenzo, is the most nearly complete large sculptural project of Michelangelo's career. The two tombs, each with an image of the deceased and two allegorical figures, are
placed against elaborately articulated walls; these six statues and a seventh on a third wall, the Madonna, are by Michelangelo’s own hand. The two saints flanking the Madonna are by assistants from his clay sketches.

Four river gods were planned but not executed.

The interior architecture of the Medici Chapel develops the treatment seen in the painted architectural framework of the Sistine ceiling; the walls are treated as relief sculptures, with intersecting moldings and pillars on many planes, giving a loose freedom typical of a non-professional approach to architecture. Whimsical reversals of what is proper—trapezoidal windows and capitals smaller than their columns—introduce what is now called mannerism in architecture.

In 1534 Michelangelo left Florence for the last time, settling in Rome. The next 10 years were mainly given over to painting for Pope Paul III, who is best known for convening the Council of Trent and thus organizing the Catholic Reformation.

The first project Michelangelo executed for Paul III is the huge Last Judgment (1536-1541) on the end wall of the Sistine Chapel. His frescoes in the Pauline Chapel in the Vatican (1541-1545) are similar to the Last Judgment, but here he added a remarkable technical novelty by exploring perspective movement and coloristic subtlety as major expressive components. He may have turned to these typically painterly concerns because the Pauline frescoes were the first ones he executed on a normal scale and eye level. Michelangelo devoted himself almost entirely to architecture and poetry after 1545. For Paul III he planned the rebuilding of the Capitol area, the Piazza del Campidoglio, a pioneering scheme of city planning that gave monumental articulation to an area traditionally used for civic ceremonies. Michelangelo's approach to architecture was growing richer and more three-dimensional, as in the Palazzo Farnese, which he completed after the death of Antonio da Sangallo the Younger in 1546.

Paul III appointed Michelangelo to take over the direction of the work at St. Peter's after Sangallo died. Here Michelangelo had less respect for his predecessor's plan, returning instead to the concepts that the first architect, Donato Bramante, had proposed in 1506. The enormous church was to be an equal-armed cross in plan, concentrated on a huge central space beneath the dome surrounded by a series of secondary spaces and their containing structures. By the time Michelangelo died, a considerable part of St. Peter's had been built in the form in which we know it, and the drum of the dome was finished up to the springing.

Michelangelo's sculpture after 1545 was limited to two Pietas that he executed for himself. The first one (1550-1555, unfinished), which is in the Cathedral of Florence, was meant for his own tomb. This Pieta employs the body type of the Last Judgment in the Christ and its shearing up and down thrusts in the interrelationships of the figures. His late architectural style has a parallel in his last sculpture, the Rondanini Pieta in Milan, which is cut away to an almost abstract set of curves. Michelangelo began this sculpture in 1555, and he was working on it on February 12, 1564. He died six days later in Rome and was buried in Florence.

Urban II (, or originally Odo of Lagery) 1042 – 1099

Pope (1088--99), born in Châtillon-sur-Marne, France. He became a monk at Cluny, and was made Cardinal Bishop of Ostia in 1078. As pope, he introduced ecclesiastical reforms, drove foreign armies from Italy, and launched the first Crusade. He was beatified in 1881

Asoka or Ashoka c. 250BC -- (阿育王摩揭陀国孔雀王朝国王、信奉佛教的第一位印度统治者)

King of India (c.264--238 BC), the last ruler of the Mauryan dynasty. After his invasion of the Kalindtga country, he renounced armed conquest and became a convert to Buddhism, which subsequently spread throughout India and beyond. He adopted a policy called dharma (principles of right life), advocating toleration, honesty, and kindness, and had his teachings engraved on rocks and pillars at certain sites. With his death the
Mauryan empire declined and his work was discontinued.

Augustine, St (, also known as Augustine of Canterbury HD (of Canterbury) DT1a ? DT2 604) 奥古斯丁：罗马帝国基督教思想家；北非希波主教

Clergyman, the first Archbishop of Canterbury, born probably in Rome. He was prior of the Benedictine monastery of St Andrew in Rome, when in 596 he was sent, with 40 other monks, by Pope Gregory I to convert the Anglo-Saxons to Christianity. Landing in Thanet, the missionaries were kindly received by Æthelbert, King of Kent, whose wife was already a Christian. A residence was assigned to them at Canterbury, where they devoted themselves to monastic exercises and preaching. The conversion and baptism of the king contributed greatly to the success of their efforts. In 597 Augustine went to Arles, and there was consecrated Bishop of the English. Feast day 26/27 May.

Harvey, William 1578 – 1657 (哈维：英国医学家、解剖学家、血液循环发现)

Physician who discovered the circulation of the blood, born in Folkestone, Kent, SE England, UK. He studied at Cambridge and Padua, and settled in London as a physician, holding appointments at St Bartholomew’s Hospital (1609–43) and from 1615 at the College of Physicians. He was also appointed physician to James I and Charles I. His celebrated treatise, De motu cordis et sanguinis in animalibus (On the Motion of the Heart and Blood in Animals), in which the circulation of the blood was first described, was published in 1628.

Rutherford (of Nelson), Ernest Rutherford, 1st Baron 1871 – 1937 (卢瑟福)

Physicist, a pioneer of subatomic physics, born near Nelson, New Zealand. He studied at Christchurch University, moved to Cambridge (1895), and in 1898 became professor of physics at McGill, Canada, where with Frederick Soddy he proposed that radioactivity results from the disintegration of atoms (1903). In 1907 he became professor at Manchester, developing the modern conception of the atom. In 1919 he became professor at Cambridge and director of the Cavendish Laboratory. He received the Nobel Prize for Chemistry in 1908, was knighted in 1914, and made a peer in 1931.

Calvin, John 1509 – 1564 (加尔文：法国宗教改革家)

Protestant reformer, born in Noyon, France. He studied Latin at Paris, then law at Orléans, where he developed his interest in theology. In Bourges and other centres he began to preach the reformed doctrines, but was forced to flee from France to escape persecution. At Basel he issued his influential Christianae religionis institutio (1536, Institutes of the Christian Religion), and at Geneva was persuaded by Guillaume Farel to help with the reformation. The reformers proclaimed a Protestant Confession of Faith, under which moral severity took the place of licence. When a rebellious party, the Libertines, rose against this, Calvin and Farel were expelled from the city (1538). Calvin withdrew to Strasbourg, where he worked on New Testament criticism, and married Idellette de Bure (1540). In 1541 the Genevans recalled him, and he founded a theocracy which controlled almost all the city’s affairs. By 1555 his authority was confirmed into an absolute supremacy. The father-figure of Reformed theology, he left a double legacy to Protestantism by systematizing its doctrine and organizing its ecclesiastical discipline. His commentaries, which embrace most of the Old and New Testaments, were collected and published in 1617.

Mendel, Gregor (Johann) 1822 – 1884 (孟德尔：奥地利遗传学家 Mendel’s Law<孟德尔(遗传)定律>)

Biologist and botanist, born in Heinzendorf, Austria. Entering an Augustinian cloister in 1843, he was ordained a priest in 1847. After studying science at Vienna (1851–3), he became abbot at Brno (1868). He researched the inheritance characters in plants, especially edible peas, and his experiments in hybridity in plants led to the formulation of his laws of segregation and independent assortment. His principle of factorial
inheritance and the quantitative investigation of single characters have provided the basis for modern genetics.

Planck, Max (Karl Ernst Ludwig) 1858 – 1947 (普朗克)

Theoretical physicist, born in Kiel, Germany. He studied at Munich and Berlin, where he became professor of theoretical physics (1889–1926). His work on the law of thermodynamics and black body radiation led him to abandon classical Newtonian principles and introduce the quantum theory (1900), for which he was awarded the Nobel Prize for Physics in 1918. Several research institutes now carry his name.

Lister (of Lyme Regis), Joseph Lister, Baron 1827 – 1912 (利斯特: 英国外科学家, 近代无菌手术法的确立者)

Surgeon, born in Upton, Essex, SE England, UK, the son of Joseph Jackson Lister. He studied at London, and became professor of surgery at Glasgow (1859), Edinburgh (1869), and London (1877). His great work was the introduction (1860) of the use of antiseptic conditions during surgery, which greatly reduced surgical mortality. He was made a baronet in 1883, and a baron in 1897.

Otto, Nikolaus (August) 1832 – 1891 (奥托)

Engineer, born near Schlangenbad, Germany. In 1876 he built the first internal combustion engine that operated on a four-stroke cycle, now generally known as the Otto cycle, even though the principle of four-stroke operation had been patented in 1862 by the French engineer Alphonse Eugène Beau de Rochas (1815–93).

Pizarro, Francisco 1478 – 1541 (皮萨洛: 西班牙军人, 征服秘鲁)

Conquistador, born in Trujillo, Spain. He served in Italy, and with the expedition which discovered the Pacific (1513). In 1526 he and Almagro sailed for Peru, and in 1531 began the conquest of the Incas. He killed the Inca king, Atahualpa, then worked to consolidate the new empire, founding Lima (1535) and other cities. In 1537, dissension with Almagro over the control of Cuzco led to conflict. Too old to take the field himself, Pizarro entrusted the command of his forces to his brothers, who defeated and executed Almagro soon afterwards. In revenge Almagro's followers assassinated Pizarro.

Cortés, Hernán (, also spelled Cortéz) 1485 – 1547 (寇第兹: 西班牙探险家, 曾经征服西班牙)

The conqueror of Mexico, born in Medellín, Spain. He studied at Salamanca, then accompanied Velázquez in his expedition to Cuba (1511). In 1519 he commanded an expedition against Mexico, fighting his first battle at Tabasco. He founded Vera Cruz, marched to Tlaxcala, and made allies of the natives. He then marched on the Aztec capital, capturing the king, Montezuma; but the Mexicans rose, and Cortés was forced to flee. He then launched a successful siege of the capital, which fell in 1521. He was formally appointed governor and captain-general of New Spain in 1522, but his authority was later superseded. He spent the years 1530–40 in Mexico, then returned to Spain.

Jefferson, Thomas 1743 – 1826 (杰斐逊: 美国政治家, 第三任总统, 独立宣言的起草人)

Third president of the United States; principal author of the Declaration of Independence. Born April 13, 1743, in Shadwell, Virginia. His father, Peter Jefferson, was a surveyor who built a substantial estate including approximately 60 African-American slaves; he died in 1757. His mother, the former Jane Randolph, was a member of one of Virginia's most prominent families. Jefferson was the eldest of two sons; he also had six sisters.

In 1760, Jefferson entered the College of William & Mary in Williamsburg, Virginia. He studied law with the state's leading legal scholar, George Wythe (later a member of the Constitutional Convention), from 1762 to 1767, then began practicing, mostly handling cases involving land claims. In 1768, Jefferson designed and built a home of his own, which he eventually named Monticello, atop an 867-foot-high mountain near his birthplace in Shadwell. That same year, he won a seat in the Virginia legislature, then called the House of Burgesses.
Jefferson's marriage in 1772 to Martha Wayles Skelton, a young widow with an impressive dowry, more than doubled his holdings in land and slaves. He and Martha went on to have six children, only two of whom survived until adulthood.

In the years leading up to the American Revolution, Jefferson was a prominent voice in the growing opposition within Virginia to the British Parliament's taxation policies and Britain's general control over the American colonies. In a treatise entitled A Summary View of the Rights of British America (published without his permission in 1774), Jefferson argued that America's bonds to Britain and King George III were wholly voluntary.

In the spring of 1775, Jefferson was appointed as a delegate to the Second Continental Congress in Philadelphia, Pennsylvania. A shy and soft-spoken man, he was regarded as a superior writer and was named to a five-person committee (also including John Adams and Benjamin Franklin) charged with drafting a formal statement of the reasons for the colonies' impending break with Britain. In just a few days, Jefferson wrote the first draft of the document that would become the Declaration of Independence, listing the grievances against George III and offering this seminal statement of democratic values: “We hold these truths to be self-evident; that all men are created equal; that they are endowed by their Creator with certain inalienable rights; that among these are life, liberty and the pursuit of happiness; that to secure these rights, governments are instituted among men, deriving their just powers from the consent of the governed.” Though the Continental Congress substantially revised Jefferson's text, it left that passage untouched. The Declaration of Independence—which was signed on July 4, 1776—was viewed as a collaborative effort by the entire Congress. Jefferson was not widely known as its principal author until the 1790s.

Upon his return to Virginia in October 1776, Jefferson began his efforts to reform the state's legal code in order to bring it more in line with the revolutionary principles of equality, especially in the areas of distribution of property and education. In addition, Jefferson caused a good deal of controversy with his strong advocacy of religious freedom and the separation between church and state. In 1779, Jefferson was elected governor of Virginia. He had a difficult tenure, earning harsh criticism on account of the embarrassing collapse of the state's defenses during the British invasion of Virginia in 1780-1781. In addition to his professional frustrations during this period, personal tragedy struck Jefferson in September 1782, when his wife Martha died after the difficult birth of their third daughter several months earlier.

As the Revolutionary War drew to a close, Jefferson was called upon to serve as a delegate to the Continental Congress in December 1782, during which he drafted the policy regarding the entrance of the Western territories into the new United States. Shortly thereafter, he agreed to succeed Benjamin Franklin as the American minister to France, moving to Paris in 1784. The five years Jefferson spent in Paris as a foreign minister have drawn a good deal of attention from scholars and biographers, not so much for his diplomatic efforts as for his personal life. In addition to his allegedly passionate affair with the married Anglo-Italian miniaturist painter Maria Cosway, there is also evidence to suggest—but not conclusively prove—that in 1788 Jefferson began a sexual relationship with his mulatto slave, a woman named Sally Hemings.

Jefferson was unable to accomplish much diplomatically during these years, not in the least because France was simmering with its own revolutionary and class conflict in the wake of America's triumph over Britain. For his part, Jefferson was fortunate enough to leave France in late 1789, just before Paris erupted into mob violence. Upon his return to America, he took office as the first secretary of state, under George Washington, the heroic Revolutionary general and newly elected president of the United States. As secretary of state, Jefferson was largely responsible for the new nation's foreign policy; he took a decidedly pro-French
viewpoint in the long-running conflict between Britain and France. Aside from foreign policy, Jefferson was extremely vocal in the debate surrounding the new Constitution—his greatest concern about the all-important document was that it made the federal government too powerful, as it lacked a bill of rights to protect the rights of states and individuals from federal encroachment.

In 1793, Jefferson stepped down from the office of secretary of state and returned to Virginia. Three years later, he finished a close second in the race for the presidency against old friend and current political rival John Adams, all the while denying publicly that he was even a candidate. As the runner-up, Jefferson became Adams’ vice president. In that office, he continued his opposition of the emphasis on a strong federal government espoused by such men as Washington, Adams, and Alexander Hamilton, who had become known as Federalists. By the mid-1790s, two distinct camps had emerged: the Federalists and the Republicans, led by Jefferson and James Madison, which essentially represented America’s first opposition party. During this period, his critics labeled Jefferson a traitor and hypocrite, pointing out that even as he denounced divisions or “factions” as destructive to government, he was himself a divisive influence.

The presidential election of 1800 proved to be an extremely heated battle, during which Jefferson allegedly paid reporters (through intermediaries) to libel the incumbent Adams. As the electoral process originally set down in the Constitution did not allow voters to differentiate between their choices for president and vice president, Jefferson and his chosen vice presidential candidate, Aaron Burr, a U.S. senator from New York, tied for the most votes, although Jefferson was clearly the voters’ choice for president. The election was thus thrown into the House of Representatives, where Jefferson proved victorious after several weeks of debate.

Jefferson’s election as president marked the first ever transfer of power from one “party” to another in the history of the young nation. Many feared that a Jefferson presidency, with its emphasis on the rights of states and individuals over the authority of the central government, would be dangerous, perhaps fatal, to the nascent federal institutions created by the Constitution. In his inaugural address on March 4, 1801, Jefferson sounded a strong conciliatory note, stating famously that “we are all republicans—we are all federalists.” In addition, the new president voiced his desire to return to the principles of the Revolution and of the Declaration of Independence and articulated his faith in the power of human reason as the guiding principle of self-government. His emphasis, as always, was on the necessity of limited central authority and protection of individual rights.

The major accomplishment of Jefferson’s first term undoubtedly came in 1803, when France sold the United States the entire Louisiana region—an expanse of land stretching from the Mississippi Valley to the Rocky Mountains—for $15 million. The Louisiana Purchase, along with the subsequent exploratory journey throughout the new territory led by Jefferson’s private secretary Meriwether Lewis and William Clark, would go down in history as one of the boldest executive actions ever. Although a tremendous bargain by any standards, the deal substantially increased the national debt; nonetheless, Jefferson could not turn down the chance to double America’s domain and remove the threat of France from the nation’s borders. More importantly, the idealistic Jefferson saw in the Western territories the future of his republican vision—the West was the place where Jefferson’s optimistic dreams of the small independent farmer and the unlimited power of his individuality and autonomy would replay themselves again and again.

Reelected by a landslide in 1804, Jefferson nonetheless faced lingering attacks on his administration from the small but vocal groups of Federalist opponents that remained. His second term was marred by the highly unpopular Embargo Act (1807), which prohibited U.S. exports in order to protest British and French
violations of American neutrality following the resumption of the Napoleonic Wars. The embargo hurt the U.S. far more than England or France, as it stunted the younger nation’s budding economy and had little effect on the two established superpowers. Another unpleasant episode during Jefferson’s second term was the trial for treason of ex-Vice President Aaron Burr (who had been rejected in favor of George Clinton in 1804, the same year Burr killed his chief political enemy, Alexander Hamilton, in a duel) after Burr arranged a suspicious expedition into areas of the American Southwest in order to detach that region from the U.S. and some areas of Mexico from Spain. An angry Jefferson demanded Burr’s conviction, but Burr was eventually acquitted by Chief Justice John Marshall of the Supreme Court in a highly partisan proceeding.

Jefferson declined to seek a third term in 1808, instead retiring to his beloved Virginia to continue his intellectual, philosophical, and architectural pursuits. President of the American Philosophical Society from 1797 to 1815, Jefferson enjoyed his intellectual and philosophical life far more than his impressive record of legislative and executive achievements. Over the next 17 years, the much-relieved Jefferson concentrated on his home and lush gardens at Monticello, his voluminous correspondence (one year he reportedly wrote over 1,200 letters), and various other intellectual pursuits.

Jefferson’s passionate love for architecture, philosophy, and education came together in the founding of the University of Virginia (UVA) at Charlottesville, chartered in 1819. His influence on the school was far-reaching, as he designed the buildings, planned the curriculum, and selected the faculty. At the time of its opening in 1825, UVA was unique among American universities, in that it had no religious affiliation or requirements and no president or administration, except for a self-enforced honor system.

Jefferson’s devotion to neoclassical architecture (stately white columns abound at UVA) also showed itself in his constant renovations of Monticello, the impressive home that he had designed to reflect the democratic principles that he held so dear. He also worked tirelessly on his smaller, more private residence in Bedford, about 90 miles away, where he would often retreat from the hubbub of his family, his slaves, and his constant visitors at Monticello. In the later years of his life, his expensive lifestyle began to take its toll, and Jefferson sank deeper and deeper into debt. Jefferson owned as many as 200 slaves at any one point, probably a total of 600 in his lifetime. Monticello—along with most of his slaves—were auctioned off after his death in order to pay the family’s debts.

A complex and sometimes enigmatic figure, Jefferson’s inconsistencies are nowhere more visible than in his views on slavery. In the fall of 1781, while serving as governor of Virginia, Jefferson published a treatise called Notes on the State of Virginia, in which he explicitly discussed slavery. While he asserted that the institution of slavery violated the principles of the Declaration of Independence and that it would eventually have to be abolished, Jefferson also explicitly delineated the reasons why blacks were inferior to whites. With the controversial Notes, Jefferson established himself as one of the more progressive voices in the South on the issue of slavery, particularly among wealthy planters.

From 1789 on, after he returned from Paris, Jefferson’s position changed. He became less of a leader on the slavery issue, holding that while ultimately slavery should be abolished, for the present it was impossible. In 1819, during congressional debate over Missouri’s admission into the union of states, Jefferson advocated the extension of slavery into the Western territories, a reversal of his view during the 1780s. Jefferson was one of many Southerners who criticized the Missouri Compromise—which admitted Missouri as a slave state and Maine as a free state but ruled out slavery in the rest of the Louisiana Purchase north of latitude 36°0— as an undemocratic abuse of power by the federal government. Writing to Congressman John Holmes, Jefferson saw portents of civil war and expressed his own, and the nation’s, dilemma over slavery: “We have the wolf by the
ears, and we can neither hold him, nor safely let him go.? (Ironically, 37 years later, by agreeing with Jefferson and ruling in Dred Scott v. Sandford that the Missouri Compromise was unconstitutional, the Supreme Court hastened the arrival of the conflict he feared.)

Apart from Jefferson's philosophical stance on slavery, there was the paradox inherent in his own life. Though he undoubtedly believed that slavery violated the principles of natural law he had included in the Declaration of Independence, he was a wealthy slave owner whose lifestyle depended upon the institution. Jefferson viewed himself and his slaves as victims of mankind's failure to rid itself of this terrible institution, and he contented himself with the idea that he would be a benevolent master to those he owned, until the “peculiar institution” met with its rightful end.

In hindsight, Jefferson's stance on slavery is inescapably hypocritical. History's view of him has been complicated even more by the increasingly unavoidable conclusion that he was sexually involved with one of his house servants, Sally Hemings, and that he fathered at least one, if not several, of her children. Allegations that he was sexually involved with Hemings surfaced as early as 1802, when the disgruntled journalist James Callendar (allegedly the same man Jefferson had hired to libel Adams during the 1796 presidential election) published the accusation, which had been circling as gossip in Virginia for several years. In the latter half of the nineteenth century, contradictory evidence surfaced: Madison Hemings, born in 1805, claimed to be Jefferson's child; just a year later, an account was published claiming that Jefferson's nephew, Peter Carr, had confessed to Jefferson's daughter Martha that he had been the father of all or most of Sally’s children. Jefferson’s direct descendants, Thomas Jefferson Randolph and Ellen Randolph Coolidge, stood by the conclusion that either Peter or Samuel Carr (both Jefferson’s nephews) had fathered Hemings’ children.

In November 1998, dramatic new scientific evidence became available through the analysis of the DNA of male descendants of both Hemings and Jefferson. After comparing the Y-chromosome component of the DNA of a descendant of Jefferson's paternal uncle, Field Jefferson, with that of a descendant of another of Hemings' sons, Eston (born 1808), Dr. Eugene Foster of the University of Virginia found an exact match of certain portions of the DNA (the odds of a perfect match in a random sample are less than one in a thousand). In January 2000, the Thomas Jefferson Memorial Foundation accepted the conclusion, supported by Foster's DNA evidence, that Jefferson and Hemings were sexual partners, and that they had between one and six children between 1790 and 1808.

Despite his inconsistencies and imperfections, Thomas Jefferson was a man of high ideals—he valued his achievements in the realm of political thought and philosophy above any legislative triumphs. In 1812, he began a famous correspondence with his old friend, political rival, and fellow champion of the American Revolution—John Adams. Their exchange of words and ideas continued for the next 14 years, until their deaths, only hours apart—Jefferson at his beloved Monticello, Adams at home in Quincy, Massachusetts—on July 4, 1826, the 50th anniversary of the signing of the Declaration of Independence. In his chosen epitaph, Jefferson made no mention of his eight years as America's president, leaving behind a vision of this deeply complex man the way he himself wanted to be remembered: "Thomas Jefferson: Author of the Declaration of American Independence, of the Statute of Virginia for Religious Freedom, and Father of the University of Virginia.?P>

Stalin, Joseph  1879 – 1953  （斯大林）

Georgian Marxist revolutionary and later virtual dictator of the USSR (1928–53). Born in Gori, Georgia, the son of a cobbler and ex-serf. He studied at Tiflis Orthodox Theological Seminary, from which he was
expelled in 1899. After joining a Georgian Social Democratic organization (1898), he became active in the revolutionary underground, and was twice exiled to Siberia (1902, 1913).

As a leading Bolshevik he played an active role in the October Revolution, and became people's commissar for nationalities in the first Soviet government and a member of the Communist Party Politburo. In 1922 he became general secretary of the Party Central Committee, a post he held until his death, and also occupied other key positions which enabled him to build up enormous personal power in the party and government apparatus.

After Lenin's death (1924) he pursued a policy of building "socialism in one country', and gradually isolated and disgraced his political rivals, notably Trotsky. In 1928 he launched the campaign for the collectivization of agriculture during which millions of peasants perished, and the first 5-year plan for the forced industrialization of the economy.

Between 1934 and 1938 he inaugurated a massive purge of the party, government, armed forces, and intelligentsia in which millions of so-called "enemies of the people' were imprisoned, exiled, or shot. In 1938 he signed the Non-Aggression Pact with Hitler which bought the Soviet Union two years respite from involvement in World War II. After the German invasion (1941), the USSR became a member of the Grand Alliance, and Stalin, as war leader, assumed the title of generalissimo. He took part in the conferences of Tehran, Yalta, and Potsdam which resulted in Soviet military and political control over the liberated countries of postwar E and C Europe.

From 1945 until his death he resumed his repressive measures at home, and conducted foreign policies which contributed to the Cold War between the Soviet Union and the West. He was posthumously denounced by Khrushchev at the 20th Party Congress (1956) for crimes against the Party and for building a "cult of personality'. Under Gorbachev many of Stalin's victims were rehabilitated, and the whole phenomenon of "Stalinism' officially condemned by the Soviet authorities.

William the Conqueror  1027 -- 1087

King of England; born c. 1027, in Falaise, Normandy, France. He was an illegitimate child of Robert I, Duke of Normandy, who died in 1035 while returning from a pilgrimage to Jerusalem. At only eight years of age, William became the new Duke of Normandy. Violence and corruption plagued his early reign, as the feudal barons fought for control of his fragile dukedom. A few of William’s guards died and his teacher was murdered during a period of severe anarchy. With the help of King Henry I of France, William managed to survive the early years.

The king knighted William, still in his teens, in 1042. Taking a new stand on political events, William finally gained firm control of his duchy (although his enemies commonly referred to him as "the Bastard?due to his illegitimate birth). By 1064, he had conquered and won two neighboring provinces—Brittany and Maine. In the meantime, the childless King of England—Edward the Confessor, whose mother was a sister of William's grandfather—promised William succession to the English throne. However, when Edward died in 1066, his brother-in-law and most powerful of the English lords, Harold Goodwin, claimed the throne of England for himself (despite an oath he made to William to support his claim). The Witan, a council of English lords that commonly took part in deciding succession, supported Harold. William, angered by the betrayal, decided to invade England and enforce his claim.

William assembled a fleet and an army on the French coast, but due to unrelenting north winds, their advance was delayed for several weeks. In the meantime, the Norwegian army invaded England from the North Sea. Harold, who had been preparing for William’s invasion from the south, rapidly moved his army north to
defend England from Norway. After defeating the Norwegians, Harold unwisely marched his troops back down to meet William, without a rest. On October 14, 1066, the two armies met in the famous Battle of Hastings. King Harold and his two brothers were killed in the battle, and since no one of stature remained to raise a new army, William’s path to the throne was clear. He was crowned King of England on Christmas Day.

There were several revolts in the next five years, which William used as an excuse to confiscate English land and declare it his personal property. He then distributed the land to his Norman followers, who imposed their unique feudal system. Eventually, Normans replaced the entire Anglo-Saxon aristocracy. William, however, retained most of England’s institutions and was intensely interested in learning about his new property. He ordered a detailed consensus to be made of the population and property of England—which was compiled in The Domesday Book (now an invaluable source of historical information and still in the Public Record Office in London).

William died in 1087 in Rouen, France. He had four sons and five daughters, and every monarch of England since has been his direct descendent. Although he never spoke English and was illiterate, he had more influence on the evolution of the English language then anyone before or since—adding a slew of French and Latin words to the English dictionary. The introduction of skilled Norman administrators may be largely responsible for eventually making England the most powerful government in Europe.

**Freud, Sigmund 1856 – 1939 (弗洛伊德：奥地利神经学家、精神病学家、精神分析的创始人)**

Medical doctor and founder of psychoanalysis. Born Sigismund Freud on May 6, 1856, in Freiberg, Moravia (now Pribor in the Czech Republic). At the age of four, Freud’s family relocated to Vienna, where he lived and worked for the majority of his life. Freud attended medical school at the University of Vienna where he focused his studies on biology for six years, under the renowned German scientist Ernst Brücke. In 1881, Freud received his medical degree and initially sought work at Vienna General Hospital before setting up a private practice in the treatment of psychological disorders.

In 1885, Freud went to Paris where he became familiar with the technique of hypnosis. He soon deemed the effects of hypnosis as temporary and adopted an alternative method of treatment suggested by his friend Josef Breuer. Breuer felt that if troubled patients were encouraged to talk freely their symptoms would eventually subside ?hence the term “free association.? Freud and Breuer further collaborated and developed the notion that many phobias were rooted in traumatic childhood experiences. The two doctors formulated that a patient needed to confront these past issues in order to let go of the phobia. They published their theory in Studies in Hysteria(1894), and their findings were considered revolutionary.

Freud and Breuer eventually parted because of differences in opinion (Breuer felt that Freud placed too much emphasis on sexuality). Freud continued to work on his own and in 1900 he published The Interpretation of Dreams, which documented his own self-analysis. The book defined dreams as representations of repressed desires and was widely considered Freud’s greatest work.

In his studies of child development, Freud concluded that between the ages of three and five children reached a turning point where they felt a strong attraction to the parent of the opposite sex (the Oedipal and Electra stages). Freud’s bold psychoanalytic theory, with its emphasis on sexuality, was thought to be scandalous and generally not well received. However, in 1908 the first International Psychoanalytical Congress was held in Salzzburg. Shortly after, Freud received recognition for his feats in psychology and a year later he was called upon to give lectures in America.

Freudian theory was built upon the foundations of both medical science and philosophy. As a scientist, Freud was interested in seeing how the human mind affected the body particularly by studying paranoia,
hysteria, and other mental illnesses. As a theorist, he explored basic truths about how personalities are formed. In 1923, Freud ventured so far as to develop a model of the human mind, consisting of three elements -- the ego, the id, and the superego. During his creatively productive life, Freud published over twenty volumes of theory and clinical studies in which he coined concepts and terms, including libido, subconscious and inferiority complex, that permeated Western culture.

In 1886, Freud married Martha Bernays with whom he had six children. Anna Freud, the youngest child, served as a subject in many of Freud's child development studies. The two maintained an extremely close relationship, and Anna became her father's colleague and eventually his successor. In 1937, Freud sought asylum in England following Hitler's annexation of Austria and a ban on psychoanalysis. Freud and his family settled in Hampstead, London until his death from mouth cancer in 1939.

**Jenner, Edward  1749 – 1823 （詹纳：英国医生，种痘法的首创者）**

Physician, the discoverer of the vaccination for smallpox, born in Berkeley, Gloucestershire, SWC England, UK. After an apprenticeship with a local surgeon, he studied under John Hunter in London, then returned to practise in Berkeley (1773), while remaining a firm friend of Hunter. Having observed how an infection of the mild disease cowpox prevented later attacks of smallpox, in 1796 he inoculated a child with cowpox, then two months later with smallpox, and the child failed to develop the disease. His discovery was violently opposed at first, but within five years vaccination was being practised throughout the civilized world.

**Bach, Johann Sebastian  1685 – 1750 （巴赫）**

Composer. Born Johann Sebastian Bach on March 21, 1685, in Eisenach, the youngest child of Johann Ambrosius Bach, organist at St. George's Church, and Elizabeth Lämmerhirt Bach. He was the culmination of the family's long line of musicians, beginning with his great-grandfather, Veit Bach, who was a professional violinist in Gotha, and the name Bach was considered a synonym for musician. The Bach family was extremely loyal to the Lutheran faith. Throughout the Thirty Years War (1618-1648) the religious turmoil affected four generations of Bachs, who remained unwaveringly faithful to their Lutheran persuasion.

Bach's first music lessons were on the violin, with his father as instructor. Having a beautiful soprano voice, he also sang in the choir at St. George's Church. On May 3, 1694, his mother died; his father remarried six months later but died scarcely two months after that. The oldest brother, Johann Christoph, assumed the care of the 10-year-old Johann Sebastian. The boy moved to Ohrdruf to live with his brother, organist at St. Michael's Church. From him Johann Sebastian received his first instruction at the harpsichord and perhaps at the organ.

**Lüneburg (1700-1703)**

In 1700 Bach was nearing his fifteenth birthday, an age when Bachs usually began to earn their own living. When an opening developed at St. Michael's School in Lüneburg, a scholarship was awarded Bach for his fine voice and his financial need. After his voice changed, he was transferred to the orchestra and played violin. At Lüneburg, Bach met the composer Georg Böhm, organist at St. John's Church, who influenced his early organ compositions. In 1701 Bach walked 30 miles to Hamburg to hear the renowned Jan Reinken, organist at St. Catherine's Church. At neighboring Celle, Bach heard the orchestra of Georg Wilhelm, which specialized in French instrumental music. On subsequent visits to Hamburg, Bach made the acquaintance of Vincent Lübeck, organ virtuoso, and heard German opera under the baton of Reinhard Keiser, the leading operatic conductor in Germany.

The artistic weapon of the Lutheran Church was the chorale, a hymn in the vernacular sung by the people during worship. It was preceded by a chorale prelude, an organ composition based upon a chorale
melody. Bach composed almost 150 chorale preludes; his earliest ones in print are from the Lüneburg period. The influence of Böhm, whose favorite form was the chorale partita or chorale variation, is evident in two Bach works: Christ, der du bist der helle Tag (Christ, Thou Who Art the Bright Day) and O Gott, du frommer Gott (O God, Thou Righteous God).

Bach graduated from St. Michael's School in 1702, and the following year he accepted the position of violinist in the chamber orchestra of Duke Johann Ernst of Weimar. As substitute organist, he had the privilege of practicing long hours on the church organ, which prepared him for future church positions.

**Arnstadt (1704-1707)**

In the summer of 1703 Bach was invited to test and demonstrate the organ in the new church at Arnstadt. He made such an impression that a month later he was formally installed as organist. Bach had much time to practice on his favorite instrument and to develop his creative talent. His dramatic flair could already be seen in his Prelude and Fugue in C Minor and Toccata and Fugue in C Major. The first of his church cantatas, No. 15, Denn du wirst meine Seele nicht in der Hölle lassen (For Thou Will Not Leave My Soul in Hell), was performed on Easter 1704. Evidently Bach's choir was less than adequate, because after the performance he immediately requested to be relieved of his choirmaster duties. His request was answered with a reprimand suggesting that his poor relationship with the choir was the source of the problem. A second reprimand, resulting from a street fight with his bassoonist, further deteriorated his relationships at Arnstadt. He did find some comfort in his companionship with his cousin Maria Barbara Bach, who was referred to as the "stranger maiden" seen in the balcony while Bach was practicing the organ.

In 1705 Bach obtained a month's leave to hear the renowned Dietrich Buxtehude, organist at St. Mary's Church in Lübeck. Bach walked the 200 miles to Lübeck and he was so impressed by the brilliant sound of choir, organ, and 40 instrumentalists performing the annual Abendmusiken, or evening music, that he remained there for four months without sending an explanatory message to Arnstadt. Bach, too, must have made an impression because he was offered Buxtehude's position on his retirement, but the offer contained the traditional stipulation that he marry one of Buxtehude's daughters. Since she was considerably older than Bach and Maria Barbara was back in Arnstadt, Bach turned down the offer. When he returned to Arnstadt, he imitated Buxtehude and composed long organ preludes. Soon Bach was admonished, and he countered by making the preludes extremely short. In addition, he began improvising and accompanying the hymns with what were called curious variations and irrelevant ornaments. Needless to say, the congregation felt no regret when Bach accepted a post at Mühlhausen.

**Mühlhausen (1707-1708)**

In 1707 Bach was appointed organist at the Church of St. Blaise in Mühlhausen. It was a free imperial city, larger and richer than Arnstadt, and a rich musical tradition had been developed during the previous 50 years by Johann Rudolf Ahle and his son Johann Georg. Every year, for example, they composed a cantata for the installation of the newly elected city council. Later that year Bach married Maria Barbara.

No doubt under the influence of Buxtehude, Bach wanted to present Mühlhausen with what he called "well-ordered church music." He soon discovered that his pastor, Johann Frohne, was an advocate of Lutheran Pietism. Frohne preferred simplicity in both the liturgy and the music, and the former organist, Johann Georg Ahle, had followed his wishes to a large extent. The very simple musical scores in the choir library reflected this approach. Bach soon became friendly with Reverend George Eilmar, an outspoken enemy of Pietism, who is thought to be the librettist of at least three cantatas that Bach wrote during the Mühlhausen tenure. The brilliant setting of Cantata No. 71, Gott ist mein König (God Is My King), written for the installation service of the city
council on February 4, 1708, certainly must have antagonized Reverend Frohne and members of the congregation who were in the audience. Bach scored the cantata for strings, woodwinds, trumpets, tympani, and the usual chorus and soloist. The council was so impressed by the performance that the music was printed and put into the city records. In spite of the council's support, the fundamental conflict between his musical ideas and those of Pietism advocated by his pastor caused Bach to look elsewhere for a new position. In his letter requesting an honorable dismissal, he states very clearly that his goal in life is "with all goodwill to conduct well-ordered church music to the honor of God."

**Weimar (1708-1717)**

When Bach arrived in Weimar late in the summer of 1708 as court organist to Duke Wilhelm Ernst, it marked the third time in 5 years that he had changed positions because of unfavorable circumstances. Hopefully, all would now be well, since his new position doubled his salary and he could work in an orthodox Lutheran environment. The years 1708-1710 saw an enormous output of organ music by Bach. Preludes, fugues, choral preludes, and toccatas poured from his pen. The very familiar Toccata and Fugue in D Minor dates from this early Weimar period. Bach's primary reputation came from his organ playing, not his compositions. He was in constant demand as a recitalist and organ consultant. Typical is the reaction of Crown Prince Frederick of Sweden, who heard Bach play in Cassel in 1714. Frederick was so astonished at his virtuosity that he took a diamond ring from his finger and gave it to Bach. The musical historian Johann Mattheson, writing in 1716, refers to him as "the famous organist" of Weimar. In 1713 Bach was invited to succeed Friedrich Zachau, the teacher of George Frederick Handel, in the Liebfrauenkirche at Halle. The possibility of playing a 65-rank instrument was a great temptation to him. When he informed the duke of his leaving, the duke promptly raised his salary and promoted him to concertmeister. When the formal invitation from Halle came 2 weeks later, Bach refused it, much to the chagrin of the Halle authorities. They, in fact, accused Bach of simply using their invitation to get an increase in salary at Weimar.

For his cantata compositions Bach was blessed with two fine librettists, Erdmann Neumeister, a Lutheran pastor at St. Jacob's Church in Hamburg, who was especially interested in elaborate church music, and Salamo Franck, the custodian of the library of Duke Wilhelm Ernst. Some of the cantatas from the Weimar period are No. 142, Uns ist ein Kind geborn (Unto Us a Child Is Born), and No. 21, Ich hatte viel Bekümmernis (My Spirit Was in Heaviness). Bach also wrote a secular cantata, No. 208, Was mir behagt (What Pleases Me), to honor Duke Wilhelm's friend the Duke of Weissenfels. Bach did not hesitate to incorporate music from his secular cantatas into his sacred cantatas; for example, the very familiar "Sheep May Safely Graze" was taken from Cantata No. 208. In his late Weimar years, especially beginning in 1716, Bach composed some of his grandest organ music. These compositions are not based upon a chorale but upon the architectonic nature of music itself. The brilliant preludes and fugues, with all their complexities, are miracles of tonal design. The great Passacaglia and Fugue in C Minor came from this period.

In 1716 the Kapellmeister, or court conductor, Johann Dreise died. Bach wanted this position and resented it very much when it was not offered to him. In addition, a quarrel developed between the duke and his nephew, Ernst Augustus. The duke actually forbade all his employees to have anything to do with his nephew. Bach would not tolerate such an infringement on his personal liberty and composed a birthday cantata for Ernst Augustus. At the same time Prince Leopold of Anhalt-Cöthen, a brother-in-law of Ernst Augustus, had heard of Bach through his sister's marriage. It appears that Bach investigated the musical opportunities at Cöthen and was offered a position. If Prince Leopold had any doubts of Bach's capabilities, the proposed musical competition at Dresden between Bach and the great French organist Louis Marchand should have dispelled
them. The contest was to include sight reading and improvisation. Bach welcomed the opportunity and agreed to read anything Marchand would put in front of him, provided the Frenchman would do likewise. Marchand agreed, but on the appointed day, evidently anticipating defeat, he left Dresden secretly by special coach.

When Bach requested his release to go to Cöthen, Duke Wilhelm refused on such short notice. Bach had already accepted money for the moving expenses and an advance in salary. When the duke would not release him, Bach became so angry that in punishment he was placed under arrest and confined to the country judge’s place of detention from November 6 to December 2, 1717. Eight days later Bach began his duties at Cöthen.

Cöthen (1717-1723)

Bach’s prime responsibility was to conduct the court orchestra, in which the prince himself participated. Leopold played both string instruments and the clavier. In the fall of 1719 Bach tried to meet Handel, who was visiting his family in Halle, but Handel had already left for London. An effort made 10 years later was also unsuccessful. Tragedy struck Bach when he returned with the prince from Carlsbad in July 1720. He was informed that his wife had died and had been buried on July 4. Bach lost a great source of inspiration and encouragement in Maria Barbara. He again visited his old friend Reinken in Hamburg, from whom he had received instruction 20 years earlier. At this meeting Bach improvised on the melody An Wasserflüssen Babylon (By the Waters of Babylon). Reinken paid Bach the highest compliment by saying, “I thought this art was dead; but I see that it survived in you.” Since Reinken was considered the foremost extempore player of his time, this was high praise indeed.

Late in 1721 Bach married Anna Magdalena Wülken. Only 20 years old, she had to take over the momentous role of wife to a man of genius and also that of mother to his children, the oldest of whom was 12 years old. But she seems to have been equal to both tasks. In addition, during the next 20 years she presented Bach with 13 children. Bach produced his greatest instrumental works during the Cöthen period. The Cöthen instrumental ensemble consisted of 16 skilled performers, and evidently the first-chair men were capable enough to cause Bach to write special music for them. He wrote unaccompanied violin sonatas and partitas for Josephus Spiess, violinist, and six suites for unaccompanied cello for Ferdinand Abel, principal cellist. Bach’s clavier music of the Cöthen period included English and French suites, the first part of the Well-Tempered Clavier, inventions, and the two notebooks for Anna Magdalena Bach. Bach also wrote his principal orchestral works during this period, such as the Overtures and the six Brandenburg Concertos. Interestingly, he wrote many of his keyboard works for the instruction of his own children.

Prince Leopold married his cousin, a princess of Anhalt-Bernberg, in 1721. She had no enthusiasm for music and successfully persuaded her husband to give his time and resources to more frivolous activities. The situation became so serious that Bach, who had been quite happy in Cöthen, decided to look for another position. In addition, the education of Bach’s children became more and more a concern to him, and he wanted to provide a strong orthodox Lutheran climate for his family.

In 1722 Johann Kuhnau, cantor of the Leipzig St. Thomas's Church, died. The vacant post was offered to Georg Philipp Telemann from Hamburg, who declined, and then to Christoph Graupner of Darmstadt, who, in declining, recommended Bach to the council. After Graupner’s refusal a member of the council remarked that since the best musicians were unavailable an average one would have to be selected. In February 1723 Bach played a trial service and presented Cantata No. 22, Jesu nahm zu sich die Zwölf (Jesus Called to Him the Twelve). At a second appearance he presented his setting of the Passion of Our Lord according to St. John. More than a year after the death of Kuhnau, Bach was made cantor of Leipzig.
Leipzig (1723-1750)

One can appreciate the reluctance of the Leipzig committee to appoint Bach. He did not have a university degree, and his reputation was primarily as an organist, not as a composer. The other candidates were recognized composers, and Bach's ability as an organist was not needed since the cantor was not required to play at the services. His duties, rather, were primarily to provide choral music for two large churches, St. Thomas and St. Nicholas. A cantata was performed alternately at each church every Sunday. In addition, special music was required on festive days of the church year and for other occasions such as funerals and installations.

In his arrangement with the council, Bach promised to perform not only the musical duties but also other responsibilities in connection with the St. Thomas's School, such as teaching classes in music, giving private instruction in singing, and even teaching Latin.

In Leipzig he composed the bulk of his choral music. The list includes 295 church cantatas, of which 202 have survived, 6 great motets, the 5 Masses, including the B Minor Mass, and the great Passions and oratorios. In 1747 Bach visited his son Carl Philipp Emanuel, who was in the service of Frederick the Great at Potsdam. Frederick had expressed the desire to meet the great Bach, and for the occasion Bach improvised a six-part fugue on a theme submitted by the King. Later Bach went home and completed the work, which he called a Musikalisches Opfer (Musical Offering). He dedicated it to Frederick with the words, "A sovereign admired in music as in all other sciences of war and peace." Bach's last work was the Art of the Fugue, in which he demonstrated the complete possibilities of the fugal and canon forms.

In his final years Bach was afflicted with gradual blindness, and he was totally blind the last year of his life. A few days before his death he dictated a setting of the hymn Vor deinen Thron tret’ ich allhier (Before Thy Throne I Stand) to his son-in-law. The composition was prophetic. Following a stroke and a raging fever, Bach died on July 28, 1750. Four of his sons carried on the musical tradition of the Bach family: Wilhelm Friedemann and Carl Philipp Emanuel by his first marriage, and Johann Christoph and Johann Christian by his second.

Laozi (, also spelled Lao-tzu or Lao-tse ("Old Master") DT1a ?) c. 550BC -- （老子）

The legendary founder of Chinese Taoism (Daoism). Nothing is known of his life: the oldest biography (c.100 BC) claims he held official rank. He was first mentioned by Zhuangzi. Taoist tradition attributes their classic text, the Daodejing (Tao Te Ching) to Laozi, but it was written in the 3rd-c BC. By the 2nd-c AD, Taoists claimed he had lived more than once and had travelled to India, where he became the Buddha. (Later he was claimed to have founded Manichaeism.) The Tang emperors (618--906) claimed descent from him.

Voltaire (, pseudonym of François Marie Arouet) 1694 – 1778 （伏尔泰：法国文学家，思想家）

Writer, the embodiment of the 18th-c Enlightenment, born in Paris. Educated by the Jesuits in Paris, he studied law, then turned to writing. For lampooning the Duc d'Orléans he was imprisoned in the Bastille (1717–18), where he rewrote his tragedy Oedipe. This brought him fame, but he gained enemies at court, and was forced to go into exile in England (1726--9). Back in France, he wrote plays, poetry, historical and scientific treatises, and his Lettres philosophiques (1734). He regained favour at court, becoming royal historiographer, then moved to Berlin at the invitation of Frederick the Great (1750--3). In 1755 he settled near Geneva, where he wrote the satirical short story, Candide (1759). From 1762 he produced a range of anti-religious writings and the Dictionnaire philosophique (1764). Always concerned over cases of injustice, he took a particular interest in the affair of Jean Calas, whose innocence he helped to establish. In 1778 he returned as a celebrity to Paris. His ideas were an important influence on the intellectual climate leading to the French Revolution.

Kepler, Johannes 1571 -- 1630 （开普勒）
Astronomer, born in Weil-der-Stadt, Germany. He studied at Tübingen, and in 1593 was appointed professor of mathematics at Graz. In c.1596 he commenced a correspondence with Tycho Brahe, who was then in Prague, and from 1600–1 worked with him, showing that planetary motions were far simpler than had been imagined. He announced his first and second laws of planetary motion in Astronomia nova (1609, New Astronomy), which formed the groundwork of Isaac Newton's discoveries. His third law was promulgated in Harmonice mundi (1619, Harmonies of the World). He succeeded Brahe as court astronomer to Emperor Rudolf II, and in 1628 became astrologer to Albrecht Wallenstein.

**Fermi, Enrico 1901 – 1954**

Physicist, born on September 29, 1901 in Rome, Italy. The son of a civil servant father and a schoolteacher mother, Fermi studied at the University of Pisa from 1918 to 1922, where his precocity led him to often teach his teachers.

In 1926, while a lecturer at the University of Florence, he developed a new form of statistical mechanics to explain the theoretical behavior of atomic particles. Fermi also developed the theory of beta decay, which introduced the last of the four basic forces known to nature, the nuclear “weak force.” At the University of Rome, he and his colleagues unwittingly split the nuclei of uranium atoms by bombarding them with neutrons, thus producing the first artificial radioactive substances. Fermi thought that the atoms were not splitting, but emitting a new element. For this breakthrough, Fermi received the 1938 Nobel Prize in physics. The same experiment yielded Fermi’s most notable discovery: that slowing neutrons by passing them through a light-element “moderator” increased their effectiveness. This “slowing” process later allowed for the release of nuclear energy in a reactor.

Fearing for the safety of his Jewish wife because of Mussolini’s anti-Semitic legislation, Fermi went directly from the Nobel Prize presentation in Stockholm to Columbia University in New York City. In 1939, he and Leo Szilard designed the first nuclear reactor, which Fermi euphemistically called a “nuclear pile.” They moved this work to the University of Chicago in 1942, joining the Manhattan Project, the American-led effort to build the first atomic bomb.

On December 2, 1942, on the squash courts of the University of Chicago, Fermi presided over what the site’s commemorative plaque now calls “the first self-sustaining chain reaction and thereby initiated the controlled release of nuclear energy.” The pile ran for twenty-eight minutes and produced 200 watts of power, paving the way for the 1945 invention of the plutonium-based atomic bomb.

Fermi moved to Los Alamos, New Mexico, in 1944 and attended the detonation of the first atomic bomb at the Trinity Test Site in the New Mexican desert. He estimated the force of the explosion by simply dropping scraps of paper in the wind and comparing their displacement before and during the blast. Despite his immeasurable contribution to the atomic bomb, Fermi opposed the development of the more powerful hydrogen bomb, calling it a “weapon which in its practical effect is almost one of genocide.” Fermi died of stomach cancer on November 28, 1954, in Chicago.

**Euler, Leonhard 1707 – 1783**

Mathematician, born in Basel, Switzerland. He studied mathematics there under Jean Bernoulli, and became professor of physics (1731) and then of mathematics (1733) at the St Petersburg Academy of Sciences. In 1738 he lost the sight of one eye. In 1741 he moved to Berlin as director of mathematics and physics in the Berlin Academy, but returned to St Petersburg in 1766, soon afterwards losing the sight of his other eye. He was a giant figure in 18th-c mathematics, publishing over 800 different books and papers, on every aspect of
pure and applied mathematics, physics and astronomy. His *Introductio in analysin infinitorum* (1748) and later treatises on differential and integral calculus and algebra remained standard textbooks for a century and his notations, such as \( e \) and \( \int \) have been used ever since. For the princess of Anhalt-Dessau he wrote *Lettres à une princesse d'Allemagne* (1768–72), giving a clear non-technical outline of the main physical theories of the time. He had a prodigious memory, which enabled him to continue mathematical work and to compute complex calculations in his head when he was totally blind. He is without equal in the use of algorithms to solve problems.

**Rousseau, Jean Jacques 1712 – 1778**

Philosopher, author, political theorist, and composer. Born June 28, 1712, in Geneva, Switzerland. Rousseau ranks as one of the greatest figures of the French Enlightenment. His mother, Suzanne Bernard, had at the age of 33 married Isaac Rousseau, a man less wellborn than she. Isaac had left his wife in 1705 for Constantinople, but returned to Suzanne in September 1711. Jean Jacques was born in 1712, and within days, Suzanne died.

At the age of three, Jean Jacques was reading and weeping over French novels with his father. From Isaac's sister the boy acquired his passion for music. His father fled Geneva to avoid imprisonment when Jean Jacques was 10. By the time he was 13, his formal education had ended. Apprenticed to a notary public, he was soon dismissed as fit only for watchmaking. Apprenticed again, this time to an engraver, Rousseau spent three wretched years in hateful servitude, which he abandoned when he found himself unexpectedly locked out of the city by its closed gates. He faced the world with no visible assets and no obvious talents.

Rousseau found himself on Palm Sunday, 1728, in Annecy at the house of Louise Eleonore, Baronne de Warens. She sent him to a hospice for catechumens in Turin, where among "the biggest sluts and the most disgusting trollops who ever defiled the fold of the Lord," he embraced the Roman Catholic faith. His return to Madame de Warens in 1729 initiated a strange alliance between a 29-year-old woman of the world and a sensitive 17-year-old youth. Rousseau lived under her roof off and on for 13 years and was dominated by her influence. Charming and clever, a born speculator, Madame de Warens was a woman who lived by her wits. She supported him; she found him jobs, most of which he regarded as uncongenial. A friend, after examining the lad, informed her that he might aspire to become a village cur?but nothing more. Still Rousseau read, studied, and reflected. He pursued music and gave lessons. For a time he was a not too successful tutor.

**First Publications and Operas**

In 1733, disturbed by the advances made to Rousseau by the mother of one of his music pupils, Madame de Warens offered herself to him. Rousseau became her lover: "I felt as if I had been guilty of incest." The sojourn with Madame de Warens was over by 1742. Though she had taken other lovers and he had enjoyed other escapades, Rousseau was still devoted to her. He thought that the scheme of musical notation he had developed would make his fortune in Paris and thus enable him to save her from financial ruin. But his journey to Paris took Rousseau out of her life. He saw her only once again, in 1754. Reduced to begging and the charity of her neighbors, Madame de Warens died destitute in 1762.

Rousseau's scheme for musical notation, published in 1743 as *Dissertation sur la musique moderne* brought him neither fame nor fortune—only a letter of commendation from the Académie des Sciences. But his interest in music spurred him to write two operas—*Les Muses galantes* (1742) and *Le Devin du village* (1752)—and permitted him to write articles on music for Denis Diderot's *Encyclopédie*; the *Lettre sur la musique française*, which embroiled him in a quarrel with the Paris Opéra (1753); and the *Dictionnaire de musique*, published in 1767.
From September 1743 until August 1744 Rousseau served as secretary to the French ambassador to Venice. He experienced at firsthand the stupidity of officialdom and began to see how institutions lend their authority to injustice and oppression in the name of peace and order. Rousseau spent the remaining years before his success with his first Discours in Paris, where he lived from hand to mouth the life of a struggling intellectual.

In March 1745 Rousseau began a liaison with Thérèse Le Vasseur. She was 24 years old, a maid at Rousseau's lodgings. She remained with him for the rest of his life—as mistress, housekeeper, mother of his children, and finally, in 1768, as his wife. He portrayed her as devoted and unselfish, although many of his friends saw her as a malevolent gossip and troublemaker who exercised a baleful influence on his suspicions and dislikes. Not an educated woman—Rousseau himself cataloged her malapropisms—she nonetheless possessed the uncommon quality of being able to offer stability to a man of volatile intensity. They had five children—though some biographers have questioned whether any of them were Rousseau's. Apparently he regarded them as his own even though he abandoned them to the foundling hospital. Rousseau had no means to educate them, and he reasoned that they would be better raised as workmen and peasants by the state.

By 1749 Diderot had become a sympathetic friend, and Rousseau regarded him as a kindred spirit. The publication of Diderot's Lettre sur les aveugles had resulted in his imprisonment at Vincennes. While walking to Vincennes to visit Diderot, Rousseau read an announcement of a prize being offered by the Dijon Academy for the best essay on the question: has progress of the arts and sciences contributed more to the corruption or to the purification of morals?

Years of Fruition, 1750-1762

Rousseau won the prize of the Dijon Academy with his Discours sur les sciences et les arts and became "l'homme du jour." His famous rhetorical "attack" on civilization called forth 68 articles defending the arts and sciences. Though he himself regarded this essay as "the weakest in argument and the poorest in harmony and proportion" of all his works, he nonetheless believed that it sounded one of his essential themes; the arts and sciences, instead of liberating men and increasing their happiness, have for the most part shackled men further. "Necessity erected thrones; the arts and sciences consolidated them," he wrote.

The Discours sur l'origine de l'inégalité des hommes, written in response to the essay competition proposed by the Dijon Academy in 1753 (but which did not win the prize), elaborated this theme still further. The social order of civilized society, wrote Rousseau, introduced inequality and unhappiness. This social order rests upon private property. The man who first enclosed a tract of land and called it his own was the true founder of civilized society. "Don't listen to that imposture; you are lost if you forget that the fruits of the earth belong to everyone and the earth to no one," he wrote. Man's greatest ills, said Rousseau, are not natural but made by man himself; the remedy lies also within man's power. Heretofore, man has used his wit and art not to alter his wretchedness but only to intensify it.

Three Major Works

Rousseau's novel La Nouvelle Héloïse (1761) attempted to portray in fiction the sufferings and tragedy that foolish education and arbitrary social conventions work among sensitive creatures. Rousseau's two other major treatises—L'Émile ou de l'éducation (1762) and Du contrat social (1762)—undertook the more difficult task of constructing an education and a social order that would enable men to be natural and free; that is, that would enable men to recognize no bondage except the bondage of natural necessity. To be free in this sense, said Rousseau, was to be happy.

Rousseau brought these three works to completion in somewhat trying circumstances. After having
returned to the Protestant fold in 1755 and having regained his citizenship of Geneva that same year, Rousseau accepted the rather insistent offer of Madame Louise d'Épinay to install Thérèse and himself in the Hermitage, a small cottage on the D'Épinay estate at Montmorency. While Rousseau was working on his novel there, its heroine materialized in the person of Sophie, Comtesse d'Houdetot; and he fell passionately in love with her. He was 44 years old; Sophie was 27, married to a dullard, the mistress of the talented and dashing Marquis Saint-Lambert, and the sister-in-law of Rousseau's hostess. Rousseau was swept off his feet. Their relationship apparently was never consummated; Sophie pitied Rousseau and loved Saint-Lambert. But Madame d'Épinay and her paramour, Melchior Grimm, meddled in the affair; Diderot was drawn into the business. Rousseau felt that his reputation had been blackened, and a bitter estrangement resulted. Madame d'Épinay insulted Rousseau until he left the Hermitage in December 1757. However, he remained in Montmorency until 1762, when the condemnation of L'Émile forced him to flee from France.

La Nouvelle Héloïse appeared in Paris in January 1761. Originally entitled Lettres de deux amants, habitants d'une petite ville au pied des Alpes, the work was structurally a novel in letters, after the fashion of the English author Samuel Richardson. The originality of the novel won it hostile reviews, but its romantic eroticism made it immensely popular with the public. It remained a best seller until the French Revolution.

The notoriety of La Nouvelle Héloïse was nothing compared to the storm produced by L'Émile and Du contrat social. Even today the ideas promulgated in these works are revolutionary. Their expression, especially in L'Émile, in a style both readable and alluring made them dangerous. L'Émile was condemned by the Paris Parlement and denounced by the archbishop of Paris. Both of the books were burned by the authorities in Geneva.

L'Émile and Du contrat social

L'Émile ou de l'éducation remains one of the world's greatest speculative treatises on education. The work was intended as illustrative of an educational program rather than prescriptive of every practical detail of a proper education. Its overarching spirit is best sensed in opposition to John Locke's essay on education. Locke taught that man should be educated to the station for which he is intended. There should be one education for a prince, another for a physician, and still another for a farmer. Rousseau advocated one education for all and the avoidance of the master-slave mode of instruction, with the pupil as either master or slave. Hence, an education resting merely on a play of wills—as when the child learns only to please the instructor or when the teacher "teaches" by threatening the pupil with a future misfortune—produces creatures fit to be only masters or slaves, not free men. Only free men can realize a "natural social order," wherein men can live happily.

A few of the striking doctrines set forth in L'Émile are: the importance of training the body before the mind, learning first through "things" and later through words, teaching first only that for which a child feels a need so as to impress upon him that thought is a tool whereby he can effectively manage things, motivating a child by catering to his ruling passion of greed, refraining from moral instruction until the awakening of the sexual urge, and raising the child outside the doctrines of any church until late adolescence and then instructing him in the religion of conscience. Although Rousseau's principles have never been fully put into practice, his influence on educational reformers has been tremendous.

L'Émile's companion master work, Du contrat social, attempted to spell out the social relation that a properly educated man—a free man—bears to other free men. This treatise is a difficult and subtle work of a penetrating intellect fired by a great passion for humanity. The liberating fervor of the work, however, is easily caught in the key notions of popular sovereignty and general will. Government is not to be confused with sovereignty of the people or with the social order that is created by the social contract. The government is an
intermediary set up between the people as law followers and the people as law creators, the sovereignty.

Furthermore, the government is an instrument created by the citizens through their collective action expressed in the general will. The purpose of this instrument is to serve the people by seeing to it that laws expressive of the general will of the citizens are in fact executed. In short, the government is the servant of the people, not their master. And further, the sovereignty of the people—the general will of the people—is to be found not merely in the will of the majority or in the will of all but rather in the will as enlightened by right judgment.

As with L'Émile, Du contrat social is a work best understood as elaborating the principles of the social order rather than schematizing the mechanism for those general principles. Rousseau's political writings more concerned with immediate application include his Considerations sur le gouvernement de la Pologne (1772) and his incomplete Projet de constitution pour la Corse, published posthumously in 1862.

Other writings from Rousseau's middle period include the Encyclopédie article Économie politique (1755); Lettre sur la Providence (1756), a reply to Voltaire's poem on the Lisbon earthquake; Lettre à d'Alembert sur les spectacles (1758); Essai sur l'origine des langues (1761); and four autobiographical Lettres à Malesherbes (1762).

**Exile and Apologetics, 1762-1778**

Forced to flee from France, Rousseau sought refuge at Yverdon in the territory of Bern. Expelled by the Bernese authorities, he found asylum in Môtiers, a village in the Prussian principality of Neuchâtel. Here in 1763 he renounced his Genevan citizenship. The publication of his Lettres écrites de la montagne (1764), in which he defended L'Émile and criticized "established" reformed churches, aroused the wrath of the Neuchâtel clergy. His house was stoned, and Rousseau fled to the isle of St. Pierre in the Lake of Biel, but he was again expelled by the Bernese. Finally, through the good offices of the British philosopher David Hume, he settled at Wotton, Derbyshire, England, in 1766. Hume managed to obtain from George III a yearly pension for Rousseau. But Rousseau, falsely believing Hume to be in league with his Parisian and Genevan enemies, not only refused the pension but also openly broke with the philosopher. Henceforth, Rousseau's sense of persecution became ever more intense, even at times hysterical.

Rousseau returned to France in June 1767 under the protection of the Prince de Conti. Wandering from place to place, he at last settled in 1770 in Paris. There he made a living, as he often had in the past, by copying music. By December 1770 the Confessions, upon which he had been working since 1766, was completed, and he gave readings from this work at various private homes. Madame d'Épinay, fearing an unflattering picture of herself and her friends, intervened; the readings were forbidden by the police. Disturbed by the reaction to his readings and determined to justify himself before the world, Rousseau wrote Dialogues ou Rousseau, Juge de Jean-Jacques (1772-1776). Fearful lest the manuscript fall into the hands of his enemies, he attempted to place it on the high altar of Notre Dame. Thwarted in this attempt, he left a copy with the philosopher Étienne Condillac and, not wholly trusting him, with an English acquaintance, Brooke Boothby. Finally, in 1778 Rousseau entrusted copies of both the Confessions and the Dialogues to his friend Paul Moutou. His last work, Les Rêveries du promeneur solitaire, begun in 1776 and unfinished at his death, records how Rousseau, an outcast from society, recaptured "serenity, tranquility, peace, even happiness."

In May 1778 Rousseau accepted Marquis de Giradin's hospitality at Ermenonville near Paris. There, with Thérèse at his bedside, he died on July 2, 1778, probably from uremia. From birth he had suffered from a bladder deformation. From 1748 onward his condition had grown worse. His adoption of the Armenian mode of dress was due to the embarrassment caused by this affliction, and it is not unlikely that much of his suspicious irritability can be traced to the same malady. Rousseau was buried on the île des Peupliers at Ermenonville. In
October 1794 his remains were transferred to the Panthéon in Paris. Thérèse, surviving him by 22 years, died in 1801 at the age of 80.

**Machiavelli, Niccolò (di Bernardo dei) 1469 – 1527** (马基雅弗利: 意大利政治家和历史学家)

Italian statesman, writer, and political theorist. Born May 3, 1469 in Florence into an aristocratic family. Little is known of the first half of his life, prior to his first appointment to public office. His writings prove him to have been a very assiduous sifter of the classics, especially the historical works of Livy and Tacitus; in all probability he knew the Greek classics only in translation.

In 1498 Machiavelli was named chancellor and secretary of the second (and less important) chancellery of the Florentine Republic. His duties consisted chiefly of executing the policy decisions of others, carrying on diplomatic correspondence, digesting and composing reports, and compiling minutes; he also undertook some 23 missions to foreign states. His embassies included four to the French king and two to the court of Rome. His most memorable mission is described in a report of 1503 entitled "Description of the Manner Employed by Duke Valentino [Cesare Borgia] in Slaying Vitellozzo Vitelli, Oliverotto da Fermo, Signor Pagolo and the Duke of Gravina, Orsini"; with surgical precision he details Borgia's series of political murders, implicitly as a lesson in the art of politics for Florence's indecisive and timorous gonfalonier, Pier Soderini.

In 1510 Machiavelli, inspired by his reading of Roman history, was instrumental in organizing a citizen militia of the Florentine Republic. In August 1512 a Spanish army entered Tuscany and sacked Prato. The Florentines in terror deposed Soderini, whom Machiavelli characterized as "good, but weak," and allowed the Medici to return to power. On November 7 Machiavelli was dismissed; soon afterward he was arrested, imprisoned, and subjected to torture as a suspected conspirator against the Medici. Though innocent, he remained suspect for years to come; unable to secure an appointment from the reinstated Medici, he turned to writing.

In all likelihood Machiavelli interrupted the writing of his Discourses on the First Ten Books of Titus Livius to write the brief treatise on which his fame rests, II Principe (1513; The Prince). Other works followed: The Art of War and The Life of Castruccio Castracani (1520); three extant plays, Mandragola (1518; The Mandrake), Clizia, and Andria; the Istorie fiorentine (1526; History of Florence); a short story, Belfagor; and several minor works in verse and prose.

In 1502 Machiavelli married Marietta Corsini, with whom he had four sons and two daughters. In 1526 Machiavelli was commissioned by Pope Clement VII to inspect the fortifications of Florence. Later that year and the following year his friend and critic Francesco Guicciardini, Papal Commissary of War in Lombardy, employed him in two minor diplomatic missions. He died in Florence in June 1527, receiving the last rites of the Church that he had bitterly criticized.

Machiavelli shared with Renaissance humanists a passion for classical antiquity. To their wish for a literary and spiritual revival of ancient values, guided by such authors as Plato, Cicero, and St. Augustine, he added a fierce desire for a political and moral renewal on the model of the Roman Republic as depicted by Livy and Tacitus. Though a republican at heart, he saw as the crying need of his day a strong political and military leader who could forge a unitary state in northern Italy to eliminate French and Spanish hegemony from Italian soil. When he wrote The Prince he envisioned such a possibility while the restored Medici ruled both Florence and the papacy. Preceding political writers, from Plato and Aristotle in ancient times and through the Middle Ages and the 15th-century humanists had all concurred in treating politics as a branch of morals. Machiavelli's chief innovation was to break with this long tradition and to confer autonomy upon politics. Like Galileo in astronomy at the end of the 16th century, Machiavelli in politics chooses to describe the world as it is, rather
than as people are taught that it should be.

Fundamental to Machiavelli's conception of history and politics is the binomial of fortuna and virtu. Abandoning the Christian view of history as providential, Machiavelli views events in purely human terms. Often it is fortune that gives the political leader's opportunity for decisive action. Like others in the Renaissance, Machiavelli believed in man's capacity for determining his own destiny in opposition to the medieval concept of an omnipotent divine will or the crushing fate of the ancient Greeks. Virtu in politics—unlike Christian virtue—is an effective combination of force and shrewdness, the lion and the fox, with a touch of greatness.

Malthus, Thomas Robert  1766 – 1834 （马尔萨斯：英国经济学家，提出“人口论”主张）

Economist, born near Dorking, Surrey, SE England, UK. He studied at Cambridge, and was ordained in 1797. In 1798 he published anonymously his Essay on the Principle of Population, which argued that the population has a natural tendency to increase faster than the means of subsistence, and that efforts should be made to cut the birth rate, either by self-restraint or birth control -- a view which later was widely misrepresented under the name of Malthusianism. In 1805 he became professor of political economy in the East India College at Haileybury, where he wrote Principles of Political Economy (1820) and other works.

Kennedy, John F. (Fitzgerald) (nickname JFK)  1917 – 1963 （约翰·肯尼迪）

Statesman and 35th U.S. president (1961-63), born on May 29, 1917, in Brookline, Massachusetts; the second of Joseph and Rose Kennedy's nine children. Kennedy was the youngest man elected president of the United States, dying from an assassin's bullet after serving less than one term in office.

Kennedy attended private elementary schools, including a year at Canterbury School in New Milford, Connecticut, and four years at Choate School in Wallingford, Connecticut. He spent the summer of 1935 studying at the London School of Economics. He entered Princeton University but was forced to leave during his freshman year because of an attack of jaundice. In the fall of 1936 he enrolled at Harvard University, graduating cum laude in June 1940. During World War II, he commanded a PT (torpedo) boat in the Pacific. When the boat was rammed and sunk by a Japanese destroyer in August 1943, Kennedy, despite serious injuries, led the surviving crew through miles of perilous waters to safety.

After the war, Kennedy worked for several months in 1945 as a reporter for the Hearst newspapers, covering a conference in San Francisco that established the United Nations. In 1947, he became a Democratic Congressman from Boston, and in 1952, successfully campaigned against Henry Cabot Lodge in Massachusetts to advance to the Senate. He married Jacqueline Bouvier on September 12, 1953, and the couple had two children, Caroline Bouvier (born 1957) and John Fitzgerald (born 1960). Another son, Patrick Bouvier, died shortly after birth in 1963.

While recuperating from back surgery, Kennedy wrote Profiles in Courage (1956), a study of courageous political acts by eight United States senators, which won a Pulitzer Prize. Kennedy campaigned for and nearly gained the Democratic nomination for vice president in 1956, and four years later was a first-ballot nominee for president. A young, handsome and personable candidate with a beautiful wife, Kennedy enjoyed the friendship and support of many high-profile Hollywood celebrities, who helped raise money for his campaign. Kennedy engaged in a series of television debates with the Republican candidate, Richard M. Nixon, which were seen by millions. After winning the presidency in 1960 by a narrow margin, Kennedy became the 35th president of the United States, the youngest president ever elected, and the first Roman Catholic president.

Kennedy's economic programs launched the country on its longest sustained expansion since World War II. He promoted social legislation, including a federal desegregation policy in schools and universities,
along with Civil Rights reform. And in formation of the Alliance for Progress and the Peace Corps, he brought Americans to the aid of developing nations.

In the height of the Cold War period, Kennedy displayed moderation and a firm hand in foreign policy. In April 1961, a force of anti-Castro Cubans, under direction of the U.S. Central Intelligence Agency prior to Kennedy’s election, failed in their invasion of Cuba at the Bay of Pigs. Kennedy accepted responsibility for this political misstep, which was considered an enormous setback in foreign relations. At the risk of all-out nuclear war, Kennedy engaged in a showdown with the Soviet Union over its missile installations in Cuba, which were ultimately withdrawn by the Soviets in October, 1962. Kennedy attempted to slow the arms race by negotiating a partial nuclear test ban treaty with the Soviet Union in 1963.

On November 22, 1963, Kennedy was assassinated by rifle fire while being driven in an open car through Dallas, Texas. The alleged assassin, 24-year-old Lee Harvey Oswald, was shot and killed by night club owner Jack Ruby two days later, while under heavy police escort on a jail transfer. Much controversy remains concerning the Kennedy assassination, and speculation about conspiracy theories abounds, despite the Warren Commission’s conclusion that Oswald most likely acted alone.

Pincus, Gregory (Goodwin) (“Goody”) 1903 – 1967

Endocrinologist; born in Woodbine, N.J. He taught at four Massachusetts universities - Harvard (1931–38), Clark (1938–45), Tufts (1946–50), and Boston University (1950–67). In 1944 he cofounded the Worcester Foundation for Experimental Biology, one of the first laboratories set up expressly to channel scientific discoveries directly into commercial development. He concentrated on studying hormones and other factors in mammalian reproduction and - with financial support brought in thanks to Margaret Sanger - he became one of the prime developers of an oral contraception pill (1951). An author of books and scientific papers, he published The Eggs of Mammals (1936) and The Control of Fertility (1965).

Lenin, Vladimir Ilyich (originally Vladimir Ilyich Ulyanov) 1870 – 1924

Marxist revolutionary, born in Ulyanovsk (formerly, Simbirsk), Russia. He studied at Kazan and St Petersburg, where he graduated in law. From 1897 to 1900 he was exiled to Siberia for participating in underground revolutionary activities. At the Second Congress of the Russian Social Democratic Labour Party (1903), he caused the split between the Bolshevik and Menshevik factions.

Following the February 1917 revolution, he returned to Petrograd (St Petersburg) from Zürich, and urged the immediate seizure of political power by the proletariat under the slogan "All Power to the Soviets'. In October 1917 he led the Bolshevik revolution and became head of the first Soviet government. At the end of the ensuing Civil War (1918–21), he introduced the New Economic Policy, which his critics in the Party saw as a "compromise with capitalism' and a retreat from strictly Socialist planning.

On his death, his body was embalmed and placed in a mausoleum near the Moscow Kremlin. In 1924 Petrograd was renamed Leningrad in his honour, but since the collapse of Communism the city is once more St Petersburg.

Wendi (also spelled Wen-ti HD (541–604)) 541 – 604

First emperor of the Chinese Sui dynasty. As Yang Jian, a northerner having close family ties both to the Han nobility and the N Zhou dynasty (557–80), he slaughtered a king and 59 princes to seize the throne, ruling as Wendi ("cultured emperor", 590–604). His lands were around Changan (Xian), which he kept as the imperial capital. Conquering S China with 518’000 men, he then secured Annam’s submission (603). Anti-intellectual, he opposed Confucianism but favoured Buddhism. He simplified administration, demanded total obedience to severe laws, and stopped officials working in their home areas. He was murdered by his son and successor,
Yang Guang (Yangdi).

**Gama, Vasco da  1469 – 1525 (达伽马)**

Navigator, born in Sines, Alentejo, Portugal. He led the expedition which discovered the route to India round the Cape of Good Hope (1497–9), and in 1502–3 led a squadron of ships to Calicut to avenge the murder of a group of Portuguese explorers left there by Cabral. In 1524 he was sent as viceroy to India, but he soon fell ill, and died at Cochin. His body was brought home to Portugal.

**Peter the Great  1672 – 1725 (彼得大帝)**

Russian czar. Born Pyotr Alekseyevich, on June 9, 1672, in Moscow, Russia. Peter the Great was the fourteenth child of Czar Alexis by his second wife, Natalya Kirillovna Naryshkina. Having ruled jointly with his brother Ivan V from 1682, when Ivan died in 1696, Peter was officially declared Sovereign of all Russia. Peter inherited a nation that was severely underdeveloped compared to the culturally prosperous European countries. While the Renaissance and the Reformation swept through Europe, Russia rejected westernization and remained isolated from modernization.

During his reign, Peter undertook extensive reforms in an attempt to reestablish Russia as a great nation. Peter overcame opposition from the country's medieval aristocracy and initiated a series of changes that affected all areas of Russian life. He created a strong navy, reorganized his army according to Western standards, secularized schools, administered greater control over the reactionary Orthodox Church, and introduced new administrative and territorial divisions of the country.

Peter focused on the development of science and recruited several experts to educate his people about technological advancements. He concentrated on developing commerce and industry and created a gentrified bourgeoisie population. Mirroring Western culture, he modernized the Russian alphabet, introduced the Julian calendar, and established the first Russian newspaper.

Peter was a far-sighted and skillful diplomat who abolished Russia's archaic form of government and appointed a viable Senate, which regulated all branches of administration, as well as making, groundbreaking accomplishments in Russia's foreign policy.

Peter acquired territory in Estonia, Latvia and Finland; and through several wars with Turkey in the south, he secured access to the Black Sea. In 1709, he defeated the Swedish army by purposely directing their troops to the city of Poltva, in the midst of an unbearable Russian winter. In 1712, Peter established the city of St. Petersburg on the Neva River and moved the capital there from its former location in Moscow. Shortly after, St. Petersburg was deemed Russia's “window to Europe.”

Under Peter's rule, Russia became a great European nation. In 1721, he proclaimed Russia an empire and was accorded the title of Emperor of All Russia, Great Father of the Fatherland, and "the Great." Although he proved to be an effective leader, Peter was also known to be cruel and tyrannical. The high taxes that often accompanied his various reforms led to revolts among citizens, which were immediately suppressed by the imposing ruler. Peter, a daunting 6 1/2 feet tall, was a handsome man who drank excessively and harbored violent tendencies.

He married twice and had 11 children, many of whom died in infancy. The eldest son from his first marriage, Alexis, was convicted of high treason by his father and secretly executed in 1718. Peter died on February 8, 1725, without nominating an heir. He was buried in the Cathedral of St. Peter in St. Petersburg.

**Mao Zedong (also known as Tse-Tung) (, also spelled Mao Tse-tung) 1893 – 1976 (毛泽东)**

Chinese statesman. Born December 26, 1893 in Hunan. More than anyone else in recent times, Mao Zedong, with his supple mind and astute judgment, helped to reshape the social and political structures of his ancient and populous country. In doing so, Mao is likely to influence the destiny of the third world as well. Highly
literate and sensitive, he was dedicated to a relentless struggle against inequality and injustice; thus at times he was capable of utter ruthlessness. He lived through reform and revolution in the early years of China's awakening nationalism, accepting at first the philosophies behind both movements. With the onset of the warlords' reaction after the revolution of 1911, disillusionment drove him to radicalism. This occurred at a time when Wilsonian self-determination was being ignored at the Paris Peace Conference and the messianic messages of the Russian October Revolution had attracted the attention of Chinese intellectuals, as China itself was passing through a period of traumatic cultural changes. Skeptical of Western sincerity and iconoclastic toward Confucianism, Mao sought inspiration from Marx's class struggle and Lenin's anti-imperialism to become a Communist.

Mao did not venture outside his home province until he was 25. Up to then, his formal education was limited to 6 years at a junior normal school where he acquired a meager knowledge of science, learned almost no foreign language, but developed a lucid written style and a considerable understanding of social problems, Chinese history, and current affairs. He was, however, still parochial in the sense that he had inherited the pragmatic and utilitarian tradition of Hunan scholarship with the hope that somehow it would help him in his groping for ways and means to strengthen and enrich his country. Mao's visit to Peking in 1918 broadened his view. Although his life there was miserable, he was working under the chief librarian of Peking University, who was one of the pioneer Marxists of China. On his return to Hunan in the following year, Mao was already committed to communism. While making a living as a primary schoolteacher, he edited radical magazines, organized trade unions, and set up politically oriented schools of his own in the orthodox manner of Communist agitation among city workers and students. With the inauguration of the Chinese Communist party (CCP) in 1921, of which Mao was one of the 50 founder-members, these activities were pursued with added energy and to a greater depth.

Meanwhile, the major political party, the Kuomintang (KMT), was reorganized, and a coalition was formed between the KMT and CCP on antiwarlord and anti-imperialist principles. Mao's principal task was to coordinate the policies of both parties, an ill-suited role on account of his lack of academic and social standing. In 1925, when the coalition ran into heavy weather, Mao was sent back to Hunan to "convalesce."

An unfortunate result of this rebuff was that he was completely left out of the nationwide strikes against Japan and Britain in the summer of that year, during which many of his comrades made their mark as leaders of the trade union movement or party politics. A by-product of his "convalescence" was that he discovered the revolutionary potential of the peasants, who had in such great numbers been displaced and pauperized by the misrule of the warlords. From then on Mao switched his attention to this vast underprivileged class of people. He studied them, tried to understand their grievances, and agitated among them.

Mao's newly acquired knowledge and experience enabled him to play a leading role in the peasant movement led by both the KMT and CCP. By 1927 he was in a position to advocate a class substitution in the Chinese Revolution. Instead of the traditional proletarian hegemony, Mao proposed that the poor peasants fill the role of revolutionary vanguard. Shortly after the publication of his Report on the Peasant Movement in Hunan, the KMT-CCP coalition broke up and the Communists were persecuted everywhere in the country.

Some survivors of the party went underground in the cities, to continue their struggle as a working-class party; the rest took up arms to defy the government and eventually to set up rural soviets in central and northern China. One of these soviets was Mao's Ching-kang Mountain base area between Kiangsi and Hunan, where he had to rely chiefly on the support of the poor peasants.

Under conditions of siege, the autonomy of these soviets threatened to disrupt the unity of the
revolutionary movement, breaking it up into small pockets of resistance like premodern peasant wars. Doctrinally, this development was anything but orthodox Marxism. The center of the CCP, located underground in Shanghai, therefore assigned to itself the task of strengthening its leadership and party discipline. A successful revolution, in its view, had to take the course of a series of urban uprisings under proletarian leadership.

In its effort to achieve this, the center had to curb the growing powers of the soviet leaders like Mao, and it had the authority of the Comintern behind it. Its effort gradually produced results: Mao first lost his control over the army he had organized and trained, then his position in the soviet party, and finally even much of his power in the soviet government.

The years of this intraparty struggle coincided with Chiang Kai-shek's successes in his anti-Communist campaigns. Eventually Chiang was able to drive the Communists out of their base areas on the Long March. The loss of nearly all the soviets in central China and crippling casualties and desertions suffered by the Communists in the first stages of the march were sufficient evidence of the ineptitude of the central party leadership. At the historic Tsunyi Conference of the party's Politburo in January 1935, Mao turned the tables against the pro-Russian leaders. On that occasion Mao was elected, thanks mainly to his support from the military, to the chairmanship of the Politburo.

During the low ebb of the revolutionary tide and the hardships of the Long March, those who might have challenged Mao fell by the wayside, largely through their own fault. By the time the Communists arrived at Yenan, the party had attained a measure of unity, to be further consolidated after the outbreak of the Sino-Japanese War in 1937. This was the first truly nationalist war China had ever fought, in which the nation as a whole united to face the common foe. However, from 1939 onward, as the war entered a long period of stalemate, clashes began to occur between KMT and Communist troops.

By early 1941 the united front between the KMT and CCP had come to exist in name only. This new situation called for the emergence of a Communist leader who could rival Chiang in his claim to national leadership in the event of a resumption of the civil war. But this could not be done so long as the CCP remained under the Russian wing.

Events in the early 1940s helped the CCP, in its search for independence, to become nationalistic. Russia, pre-occupied with its war against Hitler, was unable to influence the CCP effectively, and soon the Comintern was dissolved. Mao seized this opportunity to sinicize the Chinese Communist movement in the famous rectification campaign of 1942-1944.

The personality cult of Mao grew until his thought was written into the party's constitution of 1945 as a guiding principle of the party, side by side with Marxism-Leninism. Under Mao's brilliant leadership the party fought from one victory to another, till it took power in 1949.

Mao's thought now guided the Communists in their way of thinking, their organization, and their action. In giving their faith to Mao's thought, they found unity and strength, an understanding of the nature, strategy, and tactics of the revolution, a set of values and attitudes which made them welcome to the peasant masses, and a style of work and life which differentiated them from the bureaucrats and the romantic, culturally alienated intellectuals.

But Mao's thought had very little to say on the modernization and industrialization of China, on its socialist construction. Therefore, after 1949 the CCP was left to follow the example of Russia, with Russian aid in the years of the cold war. The importance, and relevance, of Mao therefore declined steadily while China introduced its first Five-Year Plan and socialist constitution. Once more the pro-Russian wing of the CCP was
on the ascendancy, though still unable to challenge Mao's ideological authority. This authority enabled Mao to fight back by launching the Socialist Upsurge in the Countryside of 1955 and the Great Leap Forward in 1958. The essential feature of these movements was to rely upon the voluntary zeal of the people motivated by a new moral discipline, rather than upon monetary incentives, price mechanism, professionalism, and the legalism of gradual progress. The failure of the Great Leap Forward impaired Mao's power and prestige even further. His critics within the CCP attributed the failure to the impracticability of his mass line of socialist construction; in his own view, the failure was due to inadequate ideological preparation and, perhaps, abortive implementation by the pro-Russian wing of the CCP.

At this juncture, the worsening Sino-Soviet dispute made its fatal impact. The condemnation of Russian "revisionism" cut the pro-Russian wing from its ideological source, and the withdrawal of Russian material aid practically sounded the death knell of China's attempt to emulate the Russian model. In the midst of this, Mao began his comeback.

The groundwork had been laid through the socialist education movement early in the 1960s, which started with the remodeling of the People's Liberation Army under the command of Lin Piao. When this had been accomplished, Mao, with the help of the army and young students organized into the Red Guards, waged a fierce struggle against what he called the revisionists in power in his own party. This was the famous cultural revolution of 1966-1969. In this struggle it was revealed how elitist, bureaucratic, and brittle the CCP had become since 1949.

With Mao's victory in the cultural revolution, China became the most politicized nation of the world. No Chinese thought beyond the premises of Mao's thought--a state of affairs reminiscent of the Christianization of Europe in the Middle Ages. By this Mao hoped to whip up the unbound enthusiasm and altruistic spirit of the Chinese masses to work harder while enduring a frugal life. This may be the only way for a poor and populous country like China to accumulate enough capital for its rapid industrialization.

By the time Mao was in his late 70s, his lifework was essentially done, although he retained power until the end. Physically debilitated, suffering from a lifetime of effort and Parkinson's Disease, Mao's ability to rule in new and innovative ways to meet the demands of China's modernization grew increasingly enfeebled. To what degree his radical actions in his later years were due to his illness and age is a matter of debate among historians. His final years were marked by bitter maneuvering among his clique to succeed him upon his death. One of his final major acts was to reopen contact with the United States. In September of 1976, Mao died. Mao was undoubtedly the key figure in China in the 20th century and one of the century's most important movers and reformers. He had devoted his life to the advancement of a peasant class terrorized for centuries by those in power. However, in pursuit of his own goals, Mao himself could be violent and dictatorial. To Mao must go the credit for developing a revolutionary strategy of encircling the cities from the countryside, a mass line of political thought and application to bridge the chasm between the leaders and the led, and, finally, a strategy of permanent violent and nonviolent revolution to guard against the recurrence of that kind of bureaucratism which so far in history has always emerged once a revolution is over and revolutionaries have turned into reformers.

Ford, Henry  1863 – 1947（福特：美国汽车制造厂商）

Industrialist, inventor. Born July 30, 1863 in Dearborn, Michigan, into a farming family. The first child of William and Mary Ford, he was taught largely by his mother, who instilled in him a strong sense of responsibility, duty, and self-reliance. As a young man he became an excellent self-taught mechanic and machinist. At age 16 he left the farm and went to nearby Detroit, a city that was process of becoming an industrial giant. There he worked as an apprentice at a machine shop. Months later he began to work with steam engines at the Detroit
Dry Dock Co., where he first saw the internal combustion engine, the kind of engine he would later use to make his automobiles.

When he was 28 Ford took a job with Thomas Edison's Detroit Illuminating Company, where he became chief engineer. In his spare time he began to build his first car, the Quadricycle. It resembled two bicycles positioned side by side with spindly bicycle-like wheels, a bicycle seat, and a barely visible engine frame. Some said it bore a resemblance to a baby carriage with a two-cylinder engine. In June 1896, Ford took an historic ride in his first automobile that was observed by many curious Detroit on-lookers. The Quadricycle broke down in a humiliating scene.

By 1899 Ford created a more proper-looking motorcar with the help of wealthy businessman William Murphy. It had high wheels, a padded double bench, brass lamps, mud guards, and a "racy" look. In the same year Ford founded the Detroit Automobile Company. Within 3 years Ford had built an improved, more reliable Quadricycle, using a four-cylinder, 36 horsepower-racing engine. In 1901 his car beat what was then the world's fastest automobile in a race before a crowd of eight thousand people in Grosse Pointe, Michigan.

The publicity he received for this victory allowed Ford to finance a practical laboratory for refining his auto ideas. In 1903 Ford launched his own car company, The Ford Motor Car Company, and by January 1904 he had sold 658 vehicles. By 1908 he built the famous Model T, a car that was affordable to the middle class. The automobile was no longer the toy of the rich. Sales of the Model T increased to 720,000 by 1916.

Ford was able to make a reliable and inexpensive automobile primarily because of his introduction of the innovative moving assembly line into the process of industrial manufacturing. The assembly line is a system for carrying an item that is being manufactured past a series of stationary workers who each assemble a particular portion of the finished product. The assembly line was undoubtedly Ford's greatest contribution to industry. It revolutionized manufacturing and made it possible to make uniform products quickly and affordably.

Ford personally controlled most aspects of his company operations. He shocked the industrial world in 1914 by paying his workers the very high wage of $5 a day. In exchange for this high wage Ford demanded of his employees regular attendance at work, as well as a serious and sober private life. He required all immigrant laborers learn English and become citizens of the United States.

Ford was intrigued by the ideas of Frederick Taylor (1856-1915), author of The Principles of Scientific Management. Scientific management was a philosophy of standardizing the behavior of workers to increase efficiency and production. Ford designed his factories to fit human performance, but then demanded his workers perform according to the factory design. He was one of the first to introduce time clocks into his business operations to monitor the exact minute a worker arrived at his job, took his lunch, and when he left his job. Ford began treating the worker like a living machine, and he attracted heavy criticism for this.

Ford was criticized for more than his totalitarian business practices. It was shocking for most people in the United States to read of Henry Ford's anti-Semitism, which he published weekly for two years in unsigned articles in his own newspaper, The Dearborn Independent. Oddly, many of his best friends were Jewish. An example is Albert Kahn, the great architect who designed Ford's factory in Highland Park, Michigan. Despite his controversial and at times publicly unpleasant views, some people thought enough of Ford to encourage him to run for president in 1922. They quickly retracted their support when they discovered Adolf Hitler had a picture of Ford on his wall and often cited Ford as an inspiration. Ford was the only U.S. citizen mentioned in Hitler's Mein Kampf.

Driven by his childhood sense of duty and obligation, Ford was also an active philanthropist throughout his life. He built a hospital for his employees in Detroit, and in 1936 established the Ford Foundation for the
purposes of "advancing human welfare." Since its founding the Ford Foundation has issued more than $8 billion in grants worldwide.

Ford died at his estate, Fairlane, in Dearborn, Michigan in 1947 at the age of 84.

Mencius (, Latin name Meng-tzu (Master Meng) DT1a c.)  c. -- 289BC（孟子）

Philosopher and sage, born in Shantung, China. He founded a school modelled on that of Confucius, and travelled China for some 20 years searching for a ruler to implement Confucian moral and political ideals. The search was unsuccessful, but his conversations with rulers, disciples, and others are recorded in a book of sayings compiled after his death (Book of Meng-tzu). His ethical system was based on the belief that human beings are innately and instinctively good, but require the proper conditions and support for moral growth. He also made many practical recommendations about taxes, road maintenance, and poor law.

Zoroaster (, Greek form of Zarathustra)  c. 550BC --（拜火教的创始人）

Iranian prophet and founder of the ancient Parsee religion which bears his name. He had visions of Ahura Mazda, which led him to preach against polytheism. He appears as a historical person only in the earliest portion of the Avesta. As the centre of a group of chieftains, he carried on a struggle for the establishment of a holy agricultural state against Turanian and Vedic aggressors.

Queen Elizabeth I  1533 – 1603（伊丽莎白一世）

Elizabeth I (1533-1603) was queen of England and Ireland from 1558 to 1603. She preserved stability in a nation rent by political and religious dissension and maintained the authority of the Crown against the growing pressures of Parliament.

Born at Greenwich, on September 7, 1533, Elizabeth I was the daughter of Henry VIII and his second wife, Anne Boleyn. Because of her father's continuing search for a male heir, Elizabeth's early life was precarious. In May 1536 her mother was beheaded to clear the way for Henry's third marriage, and on July 1, Parliament declared that Elizabeth and her older sister, Mary, the daughter of Henry's first queen, were illegitimate and that the succession should pass to the issue of his third wife, Jane Seymour. Jane did produce a male heir, Edward, but even though Elizabeth had been declared illegitimate, she was brought up in the royal household. She received an excellent education and was reputed to be remarkably precocious, notably in languages (of which she learned Latin, French, and Italian) and music.

Edward VI and Mary

During the short reign of her brother, Edward VI, Elizabeth survived precariously, especially in 1549 when the principal persons in her household were arrested and she was to all practical purposes a prisoner at Hatfield. In this period she experienced ill health but pursued her studies under her tutor, Roger Ascham.

In 1553, following the death of Edward VI, her sister Mary I came to the throne with the intention of leading the country back to Catholicism. The young Elizabeth found herself involved in the complicated intrigue that accompanied these changes. Without her knowledge the Protestant Sir Thomas Wyatt plotted to put her on the throne by overthrowing Mary. The rebellion failed, and though Elizabeth maintained her innocence, she was sent to the Tower. After two months she was released against the wishes of Mary's advisers and was removed to an old royal palace at Woodstock. In 1555 she was brought to Hampton Court, still in custody, but on October 18 was allowed to take up residence at Hatfield, where she resumed her studies with Ascham.

On November 17, 1558, Mary died, and Elizabeth succeeded to the throne. Elizabeth's reign would historically be revered as a golden age, when England began to assert itself internationally through the mastery of sea power. The condition of the country seemed far different, however, when she came to the throne. A contemporary noted: "The Queen poor. The realm exhausted. The nobility poor and decayed. Want of good
captains and soldiers. The people out of order. Justice not executed.” Both internationally and internally, the condition of the country was far from stable.

At the age of 25 Elizabeth was a rather tall and well-poised woman; what she lacked in feminine warmth, she made up for in the worldly wisdom she had gained from a difficult and unhappy youth. It is significant that one of her first actions as queen was to appoint Sir William Cecil (later Lord Burghley) as her chief secretary. Cecil was to remain her closest adviser; like Elizabeth, he was a political pragmatist, cautious and essentially conservative. They both appreciated England's limited position in the face of France and Spain, and both knew that the key to England's success lay in balancing the two great Continental powers off against each other, so that neither could bring its full force to bear against England.

**The Succession**

Since Elizabeth was unmarried, the question of the succession and the actions of other claimants to the throne bulked large. She toyed with a large number of suitors, including Philip II of Spain; Eric of Sweden; Adolphus, Duke of Holstein; and the Archduke Charles. From her first Parliament she received a petition concerning her marriage. Her answer was, in effect, her final one: “this shall be for me sufficient, that a marble stone shall declare that a Queen, having reigned such a time died a virgin.” But it would be many years before the search for a suitable husband ended, and the Parliament reconciled itself to the fact that the Queen would not marry.

Elizabeth maintained what many thought were dangerously close relations with her favorite, Robert Dudley, whom she raised to the earldom of Leicester. She abandoned this flirtation when scandal arising from the mysterious death of Dudley's wife in 1560 made the connection politically disadvantageous. In the late 1570s and early 1580s she was courted in turn by the French Duke of Anjou and the Duke of Alençon. But by the mid-1580s it was clear she would not marry.

Many have praised Elizabeth for her skillful handling of the courtships. To be sure, her hand was perhaps her greatest diplomatic weapon, and any one of the proposed marriages, if carried out, would have had strong repercussions on English foreign relations. By refusing to marry, Elizabeth could further her general policy of balancing the Continental powers. Against this must be set the realization that it was a very dangerous policy. Had Elizabeth succumbed to illness, as she nearly did early in her reign, or had any one of the many assassination plots against her succeeded, the country would have been plunged into the chaos of a disputed succession. That the accession of James I on her death was peaceful was due as much to the luck of her survival as it was to the wisdom of her policy.

**Religious Settlement**

England had experienced both a sharp swing to Protestantism under Edward VI and a Catholic reaction under Mary. The question of the nature of the Church needed to be settled immediately, and it was hammered out in Elizabeth's first Parliament in 1559. A retention of Catholicism was not politically feasible, as the events of Mary's reign showed, but the settlement achieved in 1559 represented something more of a Puritan victory than the Queen desired. The settlement enshrined in the Acts of Supremacy and Conformity may in the long run have worked out as a compromise, but in 1559 it indicated to Elizabeth that her control of Parliament was not complete.

Though the settlement achieved in 1559 remained essentially unchanged throughout Elizabeth's reign, the conflict over religion was not stilled. The Church of England, of which Elizabeth stood as supreme governor, was attacked by both Catholics and Puritans. Estimates of Catholic strength in Elizabethan England are difficult to make, but it is clear that a number of Englishmen remained at least residual Catholics. Because of the
danger of a Catholic rising against the Crown on behalf of the rival claimant, Mary, Queen of Scots, who was in custody in England from 1568 until her execution in 1587, Parliament pressed the Queen repeatedly for harsher legislation to control the recusants. It is apparent that the Queen resisted, on the whole successfully, these pressures for political repression of the English Catholics. While the legislation against the Catholics did become progressively sterner, the Queen was able to mitigate the severity of its enforcement and retain the patriotic loyalty of many Englishmen who were Catholic in sympathy.

For their part the Puritans waged a long battle in the Church, in Parliament, and in the country at large to make the religious settlement more radical. Under the influence of leaders like Thomas Cartwright and John Field, and supported in Parliament by the brothers Paul and Peter Wentworth, the Puritans subjected the Elizabethan religious settlement to great stress.

The Queen found that she could control Parliament through the agency of her privy councilors and the force of her own personality. It was, however, some time before she could control the Church and the countryside as effectively. It was only with the promotion of John Whitgift to the archbishopric of Canterbury that she found her most effective clerical weapon against the Puritans. With apparent royal support but some criticism from Burghley, Whitgift was able to use the machinery of the Church courts to curb the Puritans. By the 1590s the Puritan movement was in some considerable disarray. Many of its prominent patrons were dead, and by the publication of the bitterly satirical Marprelate Tracts, some Puritan leaders brought the movement into general disfavor.

Foreign Relations

At Elizabeth's accession England was not strong enough, either in men or money, to oppose vigorously either of the Continental powers, France or Spain. England was, however, at war with France. Elizabeth quickly brought this conflict to a close on more favorable terms than might have been expected.

Throughout the early years of the reign, France appeared to be the chief foreign threat to England because of the French connections of Mary, Queen of Scots. By the Treaty of Edinburgh in 1560, Elizabeth was able to close off a good part of the French threat as posed through Scotland. The internal religious disorders of France also aided the English cause. Equally crucial was the fact that Philip II of Spain was not anxious to further the Catholic cause in England so long as its chief beneficiary would be Mary, Queen of Scots, and through her, his own French rivals. In the 1580s Spain emerged as the chief threat to England. The years from 1570 to 1585 were ones of neither war nor peace, but Elizabeth found herself under increasing pressure from Protestant activists to take a firmer line against Catholic Spain. Increasingly she connived in privateering voyages against Spanish shipping; her decision in 1585 to intervene on behalf of the Netherlands in its revolt against Spain by sending an expeditionary force under the Earl of Leicester meant the temporary end of the Queen's policy of balance and peace.

The struggle against Spain culminated in the defeat of the Spanish Armada in 1588. The Queen showed a considerable ability to rally the people around herself. At Tilbury, where the English army massed in preparation for the threatened invasion, the Queen herself appeared to deliver one of her most stirring speeches: "I am come amongst you ... resolved in the midst and heat of battle, to live and die amongst you all.... I know I have the body but of a weak and feeble woman, but I have the heart and stomach of a king and of a King of England too." That the Armada was dispersed owed as much to luck and Spanish incapacity as it did to English skill. In some ways it marked the high point of Elizabeth's reign, for the years that followed have properly been called "the darker years." The Spanish threat did not immediately subside, and English counteroffensives proved ineffectual because of poor leadership and insufficient funds. Under the strain of war
expenditure, the country suffered in the 1590s prolonged economic crisis. Moreover, the atmosphere of the court seemed to decline in the closing stages of the reign; evident corruption and sordid struggling for patronage became more common.

Difficulties in Ireland

The latter years of Elizabeth's reign were marked by increasing difficulties in Ireland. The English had never effectively controlled Ireland, and under Elizabeth the situation became acute. Given Ireland’s position on England’s flank and its potential use by the Spanish, it seemed essential for England to control the island. It was no easy task; four major rebellions (the rebellion of Shane O'Neill, 1559-1566; the Fitzmaurice confederacy, 1569-1572; the Desmond rebellion, 1579-1583; and Tyrone’s rebellion, 1594-1603) tell the story of Ireland in this period. Fortunately, the Spaniards were slow to take advantage of Tyrone's rebellion. The 2d Earl of Essex was incapable of coping with this revolt and returned to England to lead a futile rebellion against the Queen (1601). But Lord Mountjoy, one of the few great Elizabethan land commanders, was able to break the back of the rising and bring peace in the same month in which the Queen died--March, 1603.

Internal Decline

The latter years of Elizabeth also saw tensions emerge in domestic politics. The long-term dominance of the house of Cecil, perpetuated after Burghley's death by his son, Sir Robert Cecil, was strongly contested by others, like the Earl of Essex, who sought the Queen's patronage. The Parliament of 1601 saw Elizabeth involved in a considerable fight over the granting of monopolies. Elizabeth was able to head off the conflict by promising that she herself would institute reforms. Her famous “Golden Speech” delivered to this, her last Parliament, indicated that even in old age she had the power to win her people to her side: "Though God hath raised me high, yet this I count the glory of my crown, that I have reigned with your loves…. It is my desire to live nor reign no longer than my life and reign shall be for your good. And though you have had, and may have, many princes more mighty and wise sitting in this seat, yet you never had, nor shall have, any that will be more careful and loving."

The words concealed the reality of the end of Elizabeth's reign. It is apparent, in retrospect, that severe tensions existed. The finances of the Crown, exhausted by war since the 1580s, were in sorry condition; the economic plight of the country was not much better. The Parliament was already sensing its power to contest issues with the monarchy, though they now held back, perhaps out of respect for their elderly queen. Religious tensions were hidden rather than removed. For all the greatness of her reign, the reign that witnessed the naval feats of Sir Francis Drake and Sir John Hawkins and the literary accomplishments of Sir Philip Sidney, Edmund Spenser, William Shakespeare, and Christopher Marlowe, it was a shaky inheritance that Elizabeth would pass on to her successor, the son of her rival claimant, Mary, Queen of Scots. On March 24, 1603, the Queen died; as one contemporary noted, she “departed this life, mildly like a lamb, easily like a ripe apple from the tree.”

Gorbachev, Mikhail Sergeyevich  1931 -- (戈尔巴乔夫)

Soviet president. Born on March 2, 1931, in Privolnaya, Russia. Mikhail Gorbachev was the winner of the 1990 Nobel Peace Prize for his leading role in ending the Cold War and promoting disarmament. He also sparked revolutionary political changes in his native country and throughout Eastern Europe.

On March 11, 1985, a new era in Soviet and world history began with the election of Mikhail Gorbachev to the USSR's top leadership position, that of general secretary of the Communist party. From the outset, it was clear that Gorbachev was "no Cold War dinosaur," as one reporter put it. A fifty-four year-old product of the communist establishment, Gorbachev was much younger and better educated than his predecessors and radiated an infectious energy and drive. He was also the first general secretary to have come of age after the
terror and paranoia that marked the Josef Stalin era. His presence on the national and international scene hinted at major changes to come, and over the next six-and-a-half years Gorbachev did his best to live up to that impression. In the process, he launched a veritable revolution whose outcome is still very much in doubt.

Born in a village near the city of Stavropol, in the heart of one of southern Russia's most fertile agricultural regions, Mikhail Sergeevich Gorbachev is the son of Sergei Andreevich Gorbachev, a mechanic on a state-run collective farm, and Maria Panteleevna Gorbachev, also a farm worker. Life for nearly everyone in the village revolved around harvest times; Mikhail and most of his classmates usually spent their vacations from school helping in the fields. In 1950, Gorbachev left home to study law at Moscow University, where he joined the Komsomol, or Young Communist League, an organization that served as a training ground for the future leaders of the Communist party (and thus of the Soviet Union). Soon he was devoting more time to politics than to his studies, and in 1954 he was elected head of the university's Komsomol chapter. Following his graduation in 1955, Gorbachev, who had hoped to stay in Moscow and work for the central government, was instead sent back to Stavropol and a minor position with the local Komsomol group.

Over the next two decades, Gorbachev steadily made his way up the political hierarchy (mostly in various agriculture-related posts), first at the local and regional level and, beginning in 1970, at the national level. In that year, he became a representative to the Supreme Soviet, the USSR's parliament. The following year, he was named to the powerful Central Committee, the inner circle of people in charge of running the government. In 1978, the Central Committee elected Gorbachev to the post of agricultural secretary, and in 1979 he was made a nonvoting member of the Politburo, the Central Committee's policy-making body. A year later, he was promoted to full membership in the Politburo.

In late 1982, one of Gorbachev's mentors, KGB chief Yuri Andropov, became head of the Soviet Union upon the death of Leonid Brezhnev, whose tenure as general secretary had been marked by widespread government inefficiency, corruption, and a sense that the nation had been drifting along without true leadership. Andropov immediately tapped Gorbachev to be his chief aide, and together the two men initiated some bold reforms, including purging dishonest and incompetent officials from the party, cracking down on alcoholism, absenteeism and poor performance in the workplace, and taking steps to decentralize key industries.

Andropov's death in 1984 after only fourteen months in office dealt a serious blow to these efforts, especially after Brezhnev loyalist Konstantin Chernenko was named to succeed him. Gorbachev nevertheless remained a powerful figure in the Politburo and gradually assumed many of Chernenko's public duties as the elderly leader's health began to fail. On one memorable trip to Great Britain in December, 1984, Gorbachev--by this time the heir-apparent to the ailing Chernenko--charmed conservative Prime Minister Margaret Thatcher and Western reporters with his intelligence and sophistication, his self-confident demeanor, his ready smile, and his sense of humor. (His wife, Raisa, earned points for her stylish dress and ability to speak some English.) At the conclusion of their talks, an obviously impressed Thatcher declared, "I like Mr. Gorbachev. We can do business together."

Three months later, in March, 1985, the world learned it would have a chance to "do business" with Gorbachev when the announcement came that he had been elected general secretary of the Communist party and leader of the Soviet Union following Chernenko's death. From the moment he took office, Gorbachev made it clear that he intended to proceed vigorously with a complete overhaul of the Soviet system from top to bottom, focusing on changes that would get the economy moving, scale back the bureaucracy, and rejuvenate the party.

To that end, he renewed the crackdowns on corruption, alcoholism, and incompetency and instituted
cash incentives and bonus consumer goods for industrial and agricultural workers who improved productivity. He tackled the issue of decentralization and fostered greater independence among local factory managers by giving them more authority to decide schedules and quotas. He introduced new technology and stressed the importance of quality, of delivering goods in a timely fashion, and of anticipating and meeting consumer demand for specific products—concepts almost totally foreign to Soviet citizens.

To revitalize the government and the party, Gorbachev forced many of the older and more conservative leaders to retire or accept lesser positions that effectively removed them from power. He also replaced many lower-level bureaucrats and party officials. And unlike his typically dour and aloof predecessors, he tried to gain the respect and even the affection of the Soviet people by speaking to them in a down-to-earth manner that combined a genuine sense of concern with a blunt frankness.

Gorbachev’s impact on the international scene was equally forceful. His top priority was improving the somewhat chilly relations between the Soviet Union and the West, particularly the United States; the detente of the 1970s had given way to a new arms race in the 1980s when the Reagan administration decided to proceed with the controversial Strategic Defense Initiative or “Star Wars” project, a complex system of defense against nuclear missiles. Realizing that any attempt by the Soviet Union to create a similar system of its own would probably devastate the country economically and shatter his plans for reform and recovery, Gorbachev surprised the world by proposing sweeping arms cuts on both sides, including a ban on nuclear weapons by the year 2000. On four separate occasions, he met with President Reagan to hammer out a weapons treaty that was finalized in December, 1987, during the Soviet leader’s first visit to the United States.

Earlier that same year, Gorbachev announced a new series of domestic reforms, including expanded freedoms and the democratization of the political process, all of which were to be achieved through his policies of social and economic restructuring, or perestroika, and openness, or glasnost. (Some of the very first hints of glasnost had appeared in late 1986, when Gorbachev ended the exile of Nobel Peace Prize-winning dissident Andrei Sakharov, who had been banished in 1980 for speaking out against the government.) Before long, Soviet writers were taking advantage of their new freedom to examine, discuss, analyze, and even criticize the past and the present openly without fear of reprisal.

Gorbachev continued to amaze the world throughout the rest of the decade. In April, 1988, for example, he announced his decision to pull Soviet troops out of Afghanistan, where they had been entrenched in a bloody and futile guerrilla war for nearly ten years. In December, during a dramatic speech before the United Nations, he proposed deep cuts in the Soviet military budget, the withdrawal of 50,000 Soviet troops from Eastern Europe, and a 500,000-man reduction in the army’s overall strength. It was also in 1988 that Gorbachev first expressed his intention to end the Communist party’s control of the day-to-day operations of the country and create new, elected political institutions.

Social and political reforms continued at a dizzying pace throughout 1989. In March, the Soviet people voted in the first democratic elections in their nation’s history; later, they watched on television as their newly elected legislators debated Soviet policy. In April came news that the antireligion laws of the 1960s had been rescinded. But by far the most breathtaking changes of that year occurred outside the Soviet Union as communist regimes in Poland, Hungary, East Germany, Czechoslovakia, Bulgaria, and Romania disintegrated (most peacefully) amid impassioned calls for political and economic reforms. Unlike his predecessors, who had always been more than willing to use force to crush any signs of discontent in Eastern Europe, Gorbachev made it clear that he felt the Soviet Union had no moral right to interfere in the affairs of other countries. Behind the scenes he did his best to discourage violent crackdowns on demonstrators and persuaded a few of the
more hard-line communist leaders to resign. Perhaps the most dramatic moment of the year came on November 9 with the opening of the Berlin Wall, for nearly thirty years a grim reminder of the hostility and suspicion dividing East and West. Gorbachev was universally acclaimed as the man who had finally brought the Cold War to an end.

Though Gorbachev basked in the adulation of the Western democracies at the close of the 1980s, at home he was the target of widespread criticism and dissatisfaction. The giddy excitement and optimism that had characterized his first few years in office evaporated as the Soviet people were forced to deal with inflation and chronic shortages of basic consumer goods that rivaled those of the World War II era. In 1990, emboldened by the democracy movements in Eastern Europe, the Baltic states and Ukraine began agitating for independence, and ethnic and religious violence erupted in Armenia and Azerbaijan. Faced with the growing threat of anarchy and the need to strike a balance between hard-line conservatives and radical reformers like Boris Yeltsin, president of the Russian republic, Gorbachev began to back away from many of his more drastic proposals (especially his plan to dismantle the central economy and create a free-market system) and assume a far more moderate position, suggesting to some Western observers that he had succumbed to the hard-liners' demands.

In the midst of this domestic chaos came news that Gorbachev had won the 1990 Nobel Peace Prize for his bold moves to improve the international political climate. The Soviets greeted the news with indifference and even some hostility, but Gorbachev expressed hope that such an important reaffirmation of his policies would energize him for the battles still ahead.

Throughout the first half of 1991, the Soviet Union teetered on the brink of self-destruction, and Gorbachev continued to retreat from his earlier policies, increasing speculation that the reactionary wing of the Communist party was indeed gaining influence over him. In January, just three months after the Nobel announcement, troops opened fire on demonstrators in Lithuania and killed fourteen people, tarnishing Gorbachev's reputation as a peacemaker and prompting fears of violent crackdowns elsewhere or even civil war. (The Soviet chief insisted he had been asleep when it happened and did not know anything about it until he woke up.) In a nationwide referendum held in March, the country approved Gorbachev's proposed Union Treaty, an arrangement that would have transferred sweeping powers from the central government to the republics while preserving the USSR. After several months of squabbling over the terms of the treaty, Gorbachev and leaders of some of the republics finally reached agreement and made plans to sign the new union into effect on August 20.

But on August 18, a group of hard-line communists staged a coup and held Gorbachev and his family under house arrest at their summer home in the Crimea. In Moscow, Yeltsin called on his Russian supporters to resist the takeover. For three days angry Muscovites squared off against a contingent of tanks the coup plotters had assembled around Yeltsin's headquarters; similar confrontations between Soviet troops and citizens occurred elsewhere in the country. It quickly became clear, however, that there was little support for the hard-liners, and by August 21 the coup had failed. Gorbachev immediately headed back to Moscow to resume power.

Over the next four months, Gorbachev repeatedly tried to reassert his authority, and for a time it appeared that he might succeed. He resigned as head of the Communist party and urged its disbandment for the role it had played in the failed coup. Abandoning his earlier moderate stance, he also pledged his renewed support for radical reform. But it was too little, too late; Yeltsin had gained the upper hand as a result of his heroics during the coup, and one republic after another declared its independence. Gorbachev nevertheless
fought to preserve at least a form of economic and military unity, warning of "catastrophe for all mankind" if the union splintered. By the end of December, however, the USSR was no more. In its place stood the Commonwealth of Independent States (CIS), a loose federation made up of eleven of the fifteen former Soviet republics. The Russian republic was acknowledged as the successor to the Soviet Union, thus strengthening the perception of Yeltsin as the man in charge. On December 25, 1991, a bitter and humiliated Gorbachev formally resigned as head of the Soviet Union.

Although it is too early to tell how history will ultimately judge Mikhail Gorbachev, most analysts agree that he will be remembered as one of the pivotal figures of the twentieth century, more for what he did for the world than for his own people. He took office announcing his intention to reform communism, not destroy it, and his biggest failure was stubbornly sticking to that goal even after it was clear that the system was so corrupted that there was virtually nothing worth saving. As a result, the Soviet people saw their standard of living decline rather than improve during his tenure. But his legacy also includes bringing an end to the Cold War and allowing freedom and democracy to take root in countries that had known only totalitarianism for more than four decades. For making those things possible Mikhail Gorbachev will no doubt be remembered as a leader who was swept aside by the very forces he unleashed—a man who, notes Gail Sheehy, "changed the world and lost his country."

Charlemagne or Charles the Great  742 – 814  (查理曼大帝: 世称 Charles the Great 或 Charles I, 768-814 为法兰克王, 800-814 为西罗马帝国皇帝)

King of the Franks (771 – 814), and emperor of the West (800 – 14), the eldest son of Pepin the Short. He defeated the Saxons (772 – 804) and the Lombards (773 – 4), fought the Arabs in Spain, and took control of most of Christian W Europe. In 800 he was crowned emperor by Pope Leo III. In his later years he consolidated his vast empire, building palaces and churches, and promoting Christianity, education, agriculture, the arts, manufacture, and commerce, so much so that the period has become known as the Carolingian Renaissance. His reign was an attempt to consolidate order and Christian culture among the nations of the West, but his empire did not long survive his death, for his sons lacked both his vision and authority.

Homer (, Greek Homemaros DT1a c.)  c. 850BC --  （荷马）

Homer, the major figure in ancient Greek literature, has been universally acclaimed as the greatest poet of classical antiquity. The Iliad and the Odyssey, two long epic poems surviving in a surprisingly large number of manuscripts, are ascribed to him.

It is not possible to supply for Homer a biography in the accepted sense of a life history, since there is no authentic record of who he was, when and where he was born, how long he lived, or even if one and the same oral poet was responsible for the two long epic poems universally associated with his name. To be sure, a number of "lives" of Homer are extant from Greek times, but their authority is subject to such grave suspicion that they have been rejected as unfounded fabrications. In both the Iliad and the Odyssey the personality of the poet remains wholly concealed, since he does not speak in the first person or otherwise refer to himself as the plot develops or the narrative proceeds.

Portrait of Homer

It is arguable that in one incident of the Odyssey the poet may be giving a glimpse of himself in the guise of a bard whom he calls Demodokos and whom he introduces to the court of the Phaeacian king, where the shipwrecked Odysseus is being generously entertained. This Demodokos (whose name may be rendered "favored of the people") is described as a "divine singer to whom the god gave delight of singing whatever his soul prompted him." He is introduced by a herald to the gathering of young and old and is called an "honored
minstrel whom the Muse befriends—yet she gave him both good and bad, in that she conferred on him sweet song but deprived him of his eyesight." (In antiquity there was a persistent belief that Homer was blind.) Then the herald "placed for him a silver-studded chair in the midst of the feasters, propping it against a tall column. And from a hook above his head he hung the clear-toned lyre [phorminx] that he might reach it with his hand; and beside him he set a fair table and a basket of food and a cup of wine, that he might drink withal." And after the company had "partaken of food and put aside their desire of meat and drink," then "the Muse stirred the bard to sing of the deeds of men, whose fame has reached wide heaven, to wit, the quarrel between Odysseus and Pelead Achilles, how they wrangled with violent words at a sacred banquet." When Demodokos finishes his heroic tale, Odysseus is made to remark how singers such as he "are held in honor and respect by all mankind; for the Muse herself has taught them." And again, addressing Demodokos, he says, "I praise thee beyond all mortals: either the Muse, God's daughter, has taught thee, or Apollo; for thou singest most fitly and aright the destiny of the Greeks, the deeds that they wrought and suffered, and the hardships they endured. Either thou thyself must have been present or heard it all from another."

This is the nearest and clearest approach to a picture of Homer in the act of reciting his poetry of heroic happenings. This passage from the Odyssey seems to have been responsible for the widespread modern idea that in the Homeric Age there were bards attached to the courts of local kings, who declaimed to the accompaniment of the lyre in great baronial halls—a complete misestimate of the poverty-stricken social conditions of the period.

**Evidence from the Epics**

This lack of any contemporary historical record of Homer’s life leaves only what can be deduced from the poems themselves. On this task much ingenuity has been expended by modern scholars, often without acceptable result. The setting of the Iliad is the plain of Troy and its immediate environment. Topographic details are set forth with such precision that it is not feasible to suppose that their reciter created them out of his imagination without personal acquaintance with the locality.

That the author of the Iliad was not the same as the compiler of these fantastic tales in the Odyssey is arguable on several scores. The two epics belong to different literary types; the Iliad is essentially dramatic in its confrontation of opposing warriors who converse like the actors in Attic tragedy, while the Odyssey is cast as a novel narrated in more everyday human speech. In their physical structure, also, the two epics display an equally pronounced difference. The Odyssey is composed in six distinct cantos of four chapters ("books") each, whereas the Iliad moves unbrokenly forward with only one irrelevant episode in its tightly woven plot. Readers who examine psychological nuances see in the two works some distinctly different human responses and behavioral attitudes. For example, the Iliad voices admiration for the beauty and speed of horses, while the Odyssey shows no interest in these animals. The Iliad dismisses dogs as mere scavengers, while the poet of the Odyssey reveals a modern sentimental sympathy for Odysseus’s faithful old hound, Argos.

But the most cogent argument for separating the two poems by assigning them to different authors is the archeological criterion of implied chronology. In the Iliad the Phoenicians are praised as skilled craftsmen working in metal and weavers of elaborate, much-prized garments. The shield which the metalworking god Hephaistos forges for Achilles in the Iliad seems inspired by the metal bowls with inlaid figures in action made by the Phoenicians and introduced by them into Greek and Etruscan commerce in the 8th century B.C. In contrast, in the Odyssey Greek sentiment toward the Phoenicians has undergone a drastic change. Although they are still regarded as clever craftsmen, in place of the Iliad’s laudatory polydайлai (“of manifold skills”) the epithet is parodied into polypaipaloi (“of manifold scurvy tricksters”), reflecting the competitive penetration into
Greek commerce by traders from Phoenician Carthage in the 7th century B.C. Other internal evidence indicates that the Odyssey was composed later than the Iliad.

**Oral Composition**

It is certain, however, that both epics were created without recourse to writing. Between the decline of Mycenaean and the emergence of classical Greek civilization—which is to say, from the late 12th to the mid-8th century B.C.—the inhabitants of the Greek lands had lost all knowledge of the syllabic script of their Mycenaean forebears and had not yet acquired from the easternmost shore of the Mediterranean that familiarity with Phoenician alphabetic writing from which classical Greek literacy (and in turn, Etruscan, Roman, and modern European literacy) derived. The same conclusion of illiterate composition may be reached from a critical inspection of the poems themselves. Among many races and in many different periods there has existed (and still exists sporadically) a form of purely oral and unwritten poetic speech, distinguishable from normal and printed literature by special traits that are readily recognizable and specifically distinctive. To this class the Homeric epics conform. Hence it would seem an inevitable inference that they must have been created either before the end of the 8th century B.C. or so shortly after that date that the use of alphabetic writing had not yet been developed sufficiently to record lengthy compositions. It is this illiterate environment that explains the absence of all contemporary historical record of the authors of the two great epics.

It is probable that Homer's name was applied to two distinct individuals differing in temperament and artistic accomplishment, born perhaps as much as a century apart, but practicing the same traditional craft of oral composition and recitation. Although each became known as "Homer," it may be (as one ancient source asserts) that homros was a dialectical Ionic word for a blind man and so came to be used generically of the old and often sightless wandering reciters of heroic legends in the traditional meter of unrhymed dactylic hexameters. Thus there could have been many Homers. The two epics ascribed to Homer, however, have been as highly prized in modern as in ancient times for their marvelous vividness of expression, their keenness of personal characterization, their unflagging interest, whether in narration of action or in animated dramatic dialogue.

**Other Works**

Later Greek times credited Homer with the composition of a group of comparatively short "hymns" addressed to various gods, of which 23 have survived. On internal evidence, however, only one or two of these at most can be the work of the poet of the two great epics. The burlesque epic The Battle of the Frogs and Mice has been preserved but adds nothing to Homer's reputation. Several other epic poems of considerable length—the Cypria, the Little Iliad, the Phocais, the Thebais, the Capture of Oichalia—were widely ascribed to Homer in classical times. None of these has survived except in stray quoted verses. But even if they were preserved in full, it is highly doubtful whether modern scholarship would accept them as all by the same author.

The simple truth seems to be that the name Homer was not so much that of a single individual as a personification for an entire school of poets flourishing on the west coast of Asia Minor during the period before the art of writing had been sufficiently developed by the Greeks to permit historical records to be compiled or literary compositions to be written down.

**Justinian (, in full Flavius Petrus Sabbatius Justinianus DT1a c.) 482 – 565 (东罗马帝国皇帝)**

Roman emperor (527–65), the protégé of his uncle, the Byzantine emperor, Justin (reigned 518–27). At first co-emperor with Justin, on his death he became sole ruler. Along with his wife Theodora, he presided over the most brilliant period in the history of the late Roman empire. Through his generals, Belisarius and Narses, he recovered N Africa, Spain, and Italy, and carried out a major codification of the Roman law.
Dalton, John 1766 – 1844 (道尔顿：英国化学家、物理学家，原子学说首创人，红绿色盲的发现者)

Chemist. Born in Eaglesfield, Cumbria, England. After 1781 he became assistant in a boarding-school kept by a cousin in Kendal. In 1787 he commenced a meteorological journal that he continued all his life, recording over 200,000 observations about the atmosphere. In 1793 he was appointed professor of mathematics and science in New College, Manchester.

One of the leading early scientists, his contributions to the field are numerous. Because he and his brother both were afflicted with color blindness, he was the first to describe the condition—which came to be known as Daltonism—in 1794. His chief physical researches were focused on mixed gases, the force of steam, the elasticity of vapors, and the expansion of gases by heat. Named for him, Dalton’s Law was established following his study of partial pressures.

In chemistry he worked on the absorption of gases, and his atomic theory interpreted the laws of chemical combination and the conservation of mass, establishing a new basis for all quantitative chemistry.

Dalton never married, and he remained a man of quiet demeanor and simple habits, reflecting his Quaker beliefs.

Copernicus, Nicolas (, Polish Mikolaj Kopernik) 1473 – 1543 (哥白尼)

Astronomer and founder of the heliocentric ordering of the planets. Born on February 19, 1473, in Torun, Poland. He belonged to a family of merchants. His uncle, the bishop and ruler of Ermland, was the person to whom Copernicus owed his education, career, and security. Copernicus studied at the University of Cracow from 1491 to 1494. While he did not attend any classes in astronomy, it was during his student years there that Copernicus began to collect books on astronomy and mathematics. Some of these contain marginal notes by him dating back to that period, but it remains conjectural whether Copernicus had already made at that time a systematic study of the heliocentric theory.

Copernicus returned to Torun in 1494, and in 1496, through the efforts of his uncle, he became a canon at Frauenburg, remaining in that office for the remainder of his life. Almost immediately Copernicus set out for Bologna to study canon law. In Bologna, Copernicus came under the influence of Domenico Maria de Novara, an astronomer known for his admiration of Pythagorean lore. There Copernicus also recorded some planetary positions, and he did the same in Rome, where he spent the Jubilee Year of 1500.

In 1501 there followed a brief visit at home. His first official act as canon there was to apply for permission to spend 3 more years in Italy, which was granted him on his promise that he would study medicine. Copernicus settled in Padua, but later he moved to the University of Ferrara, where he obtained in 1503 the degree of doctor in canon law. Only then did he take up the study of medicine in Padua, prolonging his leave of absence until 1506.

Upon returning to Ermland, Copernicus stayed in his uncle’s castle at Heilsberg as his personal physician and secretary. During that time he translated from Greek into Latin the 85 poems of Theophylactus Simacotta, the 7th-century Byzantine poet. The work, printed in Cracow in 1509, evidenced Copernicus’s humanistic leanings. At this time Copernicus was also mulling over the problems of astronomy, and the heliocentric system in particular. The system is outlined in a short manuscript known as the Commentariolus, or small commentary, which he completed about 1512. Copies of it circulated among his friends eager to know the "Sketch of Hypotheses Made by Nicolaus Copernicus on the Heavenly Motions," as Copernicus referred to his work. In it, right at the outset, there was a list of seven axioms, all of which stated a feature specific to the heliocentric system. The third stated in particular: "All the spheres revolve about the sun as their midpoint, and
therefore the sun is the center of the universe." The rest of the work was devoted to the elaboration of the proposition that in the new system only 34 circles were needed to explain the motion of planets.

The Commentariolus produced no reaction, either in print or in letters, but Copernicus's fame began to spread. Two years later he received an invitation to be present as an astronomer at the Lateran Council, which had as one of its aims the reform of the calendar; he did not attend. His secretiveness only seemed to further his reputation. In 1522 the secretary to the King of Poland asked Copernicus to pass an opinion on De motu octavae spherae (On the Motion of the Eighth Sphere), just published by Johann Werner, a mathematician of some repute. This time he granted the request in the form of a letter in which he took a rather low opinion of Werner's work. More important was the concluding remark of the letter, in which Copernicus stated that he intended to set forth elsewhere his own opinion about the motion of the sphere of stars. He referred to the extensive study of which parts and drafts were already very likely extent at that time.

Copernicus could pursue his study only in his spare time. As a canon, he was involved in various affairs, including legal and medical, but especially administrative and financial matters. In fact, he composed a booklet in 1522 on the remedies of inflation, which then largely meant the preservation of the same amount of gold and silver in coins. For all his failure to publish anything in astronomy, to have his manuscript studies circulate, or to communicate with other astronomers, more and more was rumored about his theory, still on the basis of the Commentariolus.

Not all the comments were flattering. Luther denounced Copernicus as "the fool who will turn the whole science of astronomy upside down." In 1531 a satirical play was produced about him in Elbing, Prussia, by a local schoolmaster. In Rome things went better, for the time being at least. In 1533 John Widmanstad, a papal secretary, lectured on Copernicus's theory before Pope Clement VII and several cardinals. Widmanstad's hand was behind the letter that Cardinal Schonberg sent in 1536 from Rome to Copernicus, urging him to publish his thoughts, or at least to share them with him.

It was a futile request. Probably nobody knew exactly how far Copernicus had progressed with his work until Georg Joachim (Rheticus), a young scholar from Wittenberg, arrived in Frauenburg in the spring of 1539. When he returned to Wittenberg, he had already printed an account, known as the Narratio prima, of Copernicus's almost ready book. Rheticus was also instrumental in securing the printing of Copernicus's book in Nuremberg, although the final supervision remained in the care of Andrew Osiander, a Lutheran clergyman. He might have been the one who gave the work its title, De revolutionibus orbium coelestium, which is not found in the manuscript. But Osiander certainly had written the anonymous preface, in which Copernicus's ideas were claimed as mere hypotheses by their author, or convenient mathematical formalism that had nothing to do with the physical reality.

The printed copy of his work, in six books, reached Copernicus only a few hours before his death on May 24, 1543. The physics of Copernicus was still Aristotelian and could not, of course, cope with the twofold motion attributed to the earth. But Copernicus could have done a better job as an observer. He added only 27 observations, an exceedingly meager amount, to the data he took over uncritically from Ptolemy and from more recent astronomical tables. The accuracy of predicting celestial phenomena on the basis of his system did not exceed the accuracy achieved by Ptolemy. Nor could Copernicus provide proof for the phases of Mercury and Venus that had to occur if his theory was true. The telescope was still more than half a century away. Again, Copernicus could only say that the stars were immensely far away to explain the absence of stellar parallax due to the orbital motion of the earth. Here, the observational evidence was not forthcoming for another 300 years. Also, while Ptolemy actually used only 40 epicycles, their total number in Copernicus's system was 84, hardly a
convincing proof of its greater simplicity.

Still, the undeniable strength of Copernicus's work lay in its appeal to simplicity. The rotation of the earth made unnecessary the daily revolution of thousands of stars. The orbital motion of the earth fitted perfectly with its period of 365 days into the sequence set by the periods of other planets. Most importantly, the heliocentric ordering of planets eliminated the need to think of the retrograde motion of the planets as a physical reality. In the tenth chapter of the first book Copernicus made the straightforward statement: "In the center rests the sun. For who would place this lamp of a very beautiful temple in another or better place than this wherefrom it can illuminate everything at the same time."

The thousand copies of the first edition of the book did not sell out, and the work was reprinted only three times prior to the 20th century. No "great book" of Western intellectual history circulated less widely and was read by fewer people than Copernicus's Revolutions. Nonetheless, it has come to be considered a seminal text of modern astronomy.

**Bacon, Francis, Viscount St Albans 1561 – 1626** (培根)

Philosopher and statesman, born in London, England, UK, the younger son of Sir Nicholas Bacon. He studied at Cambridge and Gray's Inn (1576), and was called to the bar in 1582. Becoming an MP in 1584, he was knighted by James I in 1603. He was in turn solicitor general (1607), attorney general (1613), privy counsellor (1616), Lord Keeper (1617), and Lord Chancellor (1618). He became Baron Verulam in 1618, and was made viscount in 1621. However, complaints were made that he accepted bribes from suitors in his court, and he was publicly accused before his fellow peers, fined, imprisoned, and banished from parliament and the court. Although soon released, and later pardoned, he never returned to public office, and he died in London, deeply in debt. His philosophy is best studied in The Advancement of Learning (1605) and Novum Organum (1620). His stress on inductive methods gave a strong impetus to subsequent scientific investigation.

**Marconi, Guglielmo 1874 – 1937** (马可尼：意大利无线电报发明者)

Physicist and inventor, born in Bologna, Italy. He studied at the Technical Institute of Livorno, and started experimenting with a device to convert electromagnetic waves into electricity. His first successful experiments in wireless telegraphy were made at Bologna in 1895, and in 1899 he erected a wireless station at La Spezia, and formed the Marconi Telegraph Co in London. In 1898 he transmitted signals across the English Channel, and in 1901 across the Atlantic. He later developed short-wave radio equipment, and established a worldwide radio telegraph network for the British government. He shared the 1909 Nobel Prize for Physics.

**Rules For Life**

**Instructions for Life in the New Millennium**

1. Take into account that great love and great achievements involve great risk.
2. When you lose, don't lose the lesson.
3. Follow the three Rs: Respect for self, respect for others, responsibility for all your actions.
4. Remember that not getting what you want is sometimes a wonderful stroke of luck.
5. Learn the rules so you know how to break them properly.
6. Don't let a little dispute injure a great friendship.
7. When you realize you've made a mistake, take immediate steps to correct it.
8. Spend some time alone every day.
9. Open your arms to change, but don't let go of your values.
10. Remember that silence is sometimes the best answer.
11. Live a good, honorable life. Then when you get older and think back, you'll be able to enjoy it a second time.
12. A loving atmosphere in your home is the foundation for your life.
13. In disagreements with loved ones, deal only with the current situation. Don't bring up the past.
14. Share your knowledge. It's a way to achieve immortality.
15. Be gentle with the earth.
16. Once a year, go someplace you've never been before.
17. Remember that the best relationship is one in which your love for each other exceeds your need for each other.
18. Judge your success by what you had to give up in order to get it.
19. Approach love and cooking with reckless abandon.

What You Should Know | A Kid's Rulebook
This is a short list of what every kid should know about what life is REALLY like . . .
1. Life is NOT fair, get used to it.
2. The world won't care about your self-esteem. The world will expect you to accomplish something BEFORE you feel good about yourself.
3. You will NOT make $40,000 a year right out of high school. You won't be a vice president with a car phone until you earn both.
4. If you think your teacher is tough, wait till you get a boss. He doesn't have tenure.
5. Flipping burgers is not beneath your dignity. Your grandparents had a different word for burger-flipping; they called it opportunity.
6. If you mess up, it's not your parents' fault, so don't whine about your mistakes, learn from them.
7. Before you were born, your parents weren't as boring as they are now. They got that way from paying your bills, cleaning your clothes, and listening to you talk about how cool you are. So before you save the rain forest from the parasites of your parents' generation, try "delousing" the closet in your own room.
8. Your school may have done away with winners and losers, but life has not. In some schools, they have abolished failing grades; they'll give you as many times as you want to get the right answer. This doesn't bear the slightest resemblance to ANYTHING in real life.
9. Open your arms to change, but don't let go of your values.
10. Life is not divided into semesters. You don't get summers off and very few employers are interested in helping you find yourself. Do that on your own time.
11. Television is NOT real life. In real life people actually have to leave the coffee shop and go to jobs.
12. Be nice to nerds. Chances are you'll end up working for one.

The Five Rings--The Broad Principles of Musashi's Strategy
Excerpt from "The Ground Book"

Strategy is the craft of the warrior . . . If you practise day and night . . . your spirit will naturally broaden. Thus is large scale strategy and the strategy of hand to hand combat propagated in the world. This is recorded for the first time in the five books of Ground, Water, Fire, Tradition (Wind), and Void (Emptiness). This is the Way to learn my strategy:

1. Do not think dishonestly.
2. The Way is in training.
3. Become acquainted with every art.
4. Know the Ways of all professions.
5. Distinguish between gain and loss in worldly matters.
6. Develop intuitive judgement and understanding for everything.
7. Perceive those things which cannot be seen.
8. Pay attention even to trifles.
9. Do nothing which is of no use.
It is important to start by setting these broad principles in your heart, and train in the Way of strategy. If you do not look at things on a large scale it will be difficult for you to master strategy. If you learn and attain this strategy you will never lose even to twenty or thirty enemies.

*Miyamoto Musashi*

Miyamoto Musashi, was born in 1584 in Miyamoto village in the province Mimasaka. In 1632, he began writing "The Book of Five Rings," which seeks to teach the spiritual and technical aspects of the martial arts. The book's five scrolls; Earth, Water, Fire, Wind (tradition) and Void (emptiness), exemplify different aspects of Musashi's beliefs and his art of fighting.

*In his own words...*

"When I had passed the age of thirty and reflected on my experiences, I realized that I had not been victorious because I had an inherent skill for the science and had not deviated from natural principles... I subsequently practiced day to night in order to attain an even deeper principle, and spontaneously came upon the science of martial arts... Trusting in the advantage of military science, as I turn it into the science of all arts and skills. I have no teacher in anything."

—Miyamoto Musashi