science to refute and to mock the teachings of mediaeval Christianity. They turned the attention of their contemporaries to the pursuit of happiness in this world, and tried to emancipate them both from fear of the church and respect for the aristocracy.

In reorganizing their states the monarchs were impelled not only by a desire to dominate the nobility, but by the need to build formidable military machines based on effective government. Even when the enlightened despots befriended the men of learning and talked the language of the most advanced thinkers of their day, their major preoccupations remained war and territorial aggrandizement. The whole history of the eighteenth century could be written in terms of a struggle for power among dynastic states on the European continent and in the colonies. Battles were fought intermittently throughout the century, and by the eve of the French Revolution the European states system as formulated at the Peace of Utrecht had undergone rather important alterations. The traditional diplomatic alignment of Bourbon versus Hapsburg had been upset by the rise of Russia and Prussia. These two states of eastern Europe had emerged as nations of great potential power; the impact of their dynamic expansionism was first felt in this period. In the colonial world the outcome of a century of sporadic warfare was decisive. France was virtually ousted from the continents of Asia and America, and England—ruled by the men of industry and trade—became the preponderant maritime and colonial power.
CHAPTER I

The European World

EIGHTEENTH-CENTURY world maps furnished Europeans with a reasonably accurate impression of the coastal outlines of the great continents and islands, except for a strangely shaped New Holland (Australia) and a totally unexplored American Northwest. Of the several continents, Europe proper was the only one whose settlements had been extensively charted. Detailed maps for all its political subdivisions had been prepared by learned societies and army staffs in order to guide generals in their military operations and to facilitate the policing of the state. In other parts of the world, little beyond the coastal fringe where the major colonial factories, seaports, and fortified places were located had been accurately surveyed.

Although to most Europeans the interior of these continents remained dark and mysterious, the frontiers of geographic knowledge continued to recede. Explorers, traders, and colonists pushed their way up the river valleys of North America, charted islands in the South Pacific, established new posts on the West African coast and on the rivers of India. A profusion of exotic voyage literature was avidly devoured by those who stayed at home.

Europe itself consisted of some two hundred separate po-
political units, dependent in varying degree upon the major powers and ruled by a Holy Roman Emperor and a bewildering array of tsars, kings, princes, dukes, bishops, electors, and city administrators. Cartographers continued to use “Germany” and “Italy” as geographic expressions, although they identified no united political entities. Vestiges of complex feudal relationships existed among the reigning houses of Europe. Chancelleries of states great and small were well stocked with mediaeval charters which awarded their monarchs conflicting suzerainties in one another’s lands. When questions of royal succession shook the delicate balance of power there were ample precedents and documentary justifications for a pretender’s claims. No king was ever wanting a casus belli. Maps generally indicated the actualities of power relationships on the continent as defined by treaties; if the sonorous titles of European monarchs had ever been represented graphically, the result would have been a crazy quilt of overlapping boundaries.

Growth of Population

In the eighteenth century no one knew what the population of Europe was. In addition to the administrative difficulties inherent in conducting a census, governments were deterred by the prevalent superstition that it was evil to count human souls, as well as by the simple political consideration that the size of a nation-state’s population was a treasured military secret, for it indicated the man power which would be available in time of war. Contemporary taxation and army conscription tables in a few countries nonetheless do give some idea of numbers. In recent years estimates of past population growth have been compiled on the basis of such old records, and while the demographers
are apologetic about the high percentage of error involved in their calculations, the figures at least indicate general magnitudes for the century.

In 1650, we now believe, the population of Europe was about 100,000,000. During the following hundred years there was an increase of 40,000,000, raising the total to 140,000,000 in 1750. In the course of the second half of the eighteenth century occurred the first sharp acceleration of population growth in modern times, a jump to 187,000,000 by 1800. This was largely the consequence of a decline in the death rate, it is supposed, and not of any extraordinary increase in fertility. It may be of interest to set these figures beside the even more hazardous conjectures about the movement of population in Asia, which rose from 330,000,000 to 600,000,000 during the same period. Thus by the year 1800 the number of human beings in the whole world was approaching 1,000,000,000, about a fifth of whom were white Europeans in origin, living on their own continent and in the colonies.

The spectacular growth of the latter half of the eighteenth century was a novel phenomenon the like of which had not occurred in Europe since the Middle Ages. Of itself, the impact of this sudden multiplication of persons inhabiting a small area of the world, the European peninsula, was forceful enough to disrupt stable relationships in many spheres of economic and political activity.

A few rough estimates will indicate the relative population weights among the major states at the close of the century. France was preponderant in western Europe, by far the largest single nation-state, with a population of 24,-
000,000. England and Wales were still under 10,000,000, and Prussia under 5,000,000. The combined state areas of
Austria and Hungary had only about 8,000,000, though the dispersed pieces of their whole continental empire gave the Hapsburg rulers access to total man power comparable to that of the French monarchy. The vast unexplored frontier of Russia in Asia makes it impossible to rely on any single number for that empire. In 1797 a figure as high as 36,000,000 was used in an official registry of persons on crown and noble lands. Other contemporary estimates, restricted to those portions of Russia which could effectively bear weight in the European balance of power, ran as low as 9,000,000. Farsighted calculators were already aware of the military importance of this enormous reservoir of population reaching to the Pacific.

The Movement to the Cities

In the late seventeenth and early eighteenth centuries, a group of “political arithmeticians” in England, France, and Germany undertook the first studies of what we would now call vital statistics. They discovered that in the cities of Europe they had sampled, the annual number of births fell below deaths. Consequently, they reasoned, had there been no migration from rural to urban areas, the cities would be suffering a steady population decline. Since it was a commonplace of observation that, contrariwise, towns were increasing in size, they could not but conclude that the cities were in fact attracting a regular flow of persons from the countryside large enough to more than compensate for the natural loss. Thus, without any positive statistical proof of population movement to the city, they deduced it from their analysis of burial and baptismal records. Despite the “fetid atmosphere” of the eighteenth-century town, the ravages of disease in congested quarters, the weakness of man’s “vital
forces” in the city, and the evils of debauchery, the early statisticians reported that men and women continued to be drawn to these centers of vice and luxury, abandoning the soil with its “constant, parsimonious, and contented inhabitants.”

In England, where the development was most striking, the growth of the city was the consequence of both industrial and agricultural revolutions, the allurement of urban luxury based on commercial prosperity, the increased employment opportunities for artisans, maids, and lackeys, and the improvement of the transportation system, which made the escape to London town a somewhat less perilous undertaking. The speeding-up of the enclosure movement sent into the cities rural agricultural workers and cottagers whose labor was not required for the farming of consolidated estates. During the course of the eighteenth century the independent yeomen of ancient England began to disappear. They were either bought out by the new rich merchant class who had gone to the country to accumulate landed property for respectability’s sake, or they were forced out when their commons were enclosed by the Whig gentry who seized the land through manipulation of the procedures of local justice and through acts of Parliament. Bought out or driven out, the yeomen and agricultural laborers became industrial entrepreneurs, workers, or servants in urban areas. As the industrial revolution got well under way in the second half of the century, whole areas of England witnessed a new concentration of population, especially the textile centers of Lancashire and West Riding, the pottery centers of Staffordshire and Warwickshire, and the coal fields of Durham and Northumberland. There seems to have been
a general shift of population from the south and the southeast to the midlands and the north. By 1801 England and Wales were by far the most urbanized areas in Europe; together they had more than a hundred cities and towns, each with a population of 5,000 or over, and these “urban” agglomerations accounted for 2,300,000 inhabitants out of a total of about 8,900,000.

Throughout the century the continent of Europe remained overwhelmingly rural. In France the urban movement was far less intense than in England. The peasantry was attached to its native soil, though the rising demand in Paris for artisans and servants and, on a lesser scale, the attractions of the flourishing and expanding commercial cities of the provinces drew the foot-loose and the adventurous. There are no precise statistical data for each city, but the rapid eighteenth-century growth of Nantes, Marseilles, Nancy, Lyons, Bordeaux, and Le Havre is shown by the number of buildings which have survived from that epoch. French textile centers in the northern provinces also expanded, although the concentration of workers was at no time comparable to the English factory towns. By 1800 France had ninety cities with a population of more than 10,000, which accounted for at least 10 per cent of the total population. In rather turgid moralistic excursions, a number of contemporary French economists deplored the abandonment of the countryside where, they believed, the nation’s true prosperity lay in the treasures of the earth. Most physiocrats, as this school was called, denounced urban luxury as destructive of the national wealth. The political philosopher and writer, Jean-Jacques Rousseau (1712–1778), with more style and passion, joined in bewailing the loss of the simple
virtues of natural man in the corruption of the city. The countrymen nevertheless did not cease their steady trek to the towns.

Germany remained predominantly rural and poor. It has been estimated that at the end of the century only a fourth of the inhabitants lived in agglomerations of more than a thousand persons. The numerous German ducal courts which aped the splendour of Versailles were tiny establishments located in what would now be considered mere towns. The Weimar of Goethe’s day had about 8,000 inhabitants.

As one moved east across the European continent the urban units became smaller and rarer until they vanished in the Russian steppe.

The Capitals of Europe

Among the cities of Europe, there were some hundred magnificent islands of urban culture on which massive stone structures had been raised by successive centuries of Christian civilization. About a dozen of these larger cities had achieved eminence as the capitals of great states and empires. From these few cities the rulers of men ordered the destinies of a continent still overwhelmingly agricultural.

Contemporary city plans and guidebooks have left us a fair notion of the dimensions and population density of the major cities, symbols of the wealth and prosperity of the European nations.

The outstanding metropolis was London, eighteen miles in circumference and inhabited by nearly 900,000 persons. “No City can boast of more Conveniences,” wrote an Englishman proudly in 1771:

It is encompassed with a vast Number of Fruit and Kitchen Gardens; for many Miles there are Roads to it, kept in constant
Repair; every House almost is supplied with Water by Pipes from the Thames, and New-River, or the Ponds at Hampstead. There is in every Street, a Common-Sewer to carry off the Filth; and when the Pavement is finished, which is now in very great Forwardness, there will be no Town better paved and lighted.¹

Paris was estimated at 700,000 persons, crowded into four-to-seven-story houses along a thousand crooked streets. The circuit of Rome was nominally ten miles around, but half the area, where noble edifices had once stood, was now returned to wasteland and open fields. Amsterdam, though it had lost its trade supremacy to the overseas companies of London, was still a banking center with 200,000 inhabitants. Vienna, seat of the Hapsburg Empire and long the last outpost of European civilization, was primarily a bureaucratic center, no more populous than the Dutch capital. The Russians had two capitals: ancient Moscow, with its 1,600 churches and 150,000 people, and new St. Petersburg, constructed on a rational plan with broad straight streets—Peter the Great’s “window to the west,” which was fast developing also as a key trading mart for the Far East. Constantinople, the capital which the Turks had wrested from the Byzantine Empire, was the equal in size of any in Europe. Berlin was the fastest-growing capital on the continent; it more than trebled its population in the course of the century, attaining about 180,000 in 1800, a barometer of the astounding growth of the new Prussian monarchy. The free cities of Germany, the capitals of the electorates of the

Holy Roman Empire, and the Italian cities of Renaissance
grandeur were no longer expanding significantly; they had
fallen behind the nation-states and empires.

The cities of Europe included within their boundaries
an imposing array of establishments—repositories of their
civilization, agencies of domination, institutions for charity
and entertainment. There were customhouses, courts, asyl-
ums, hospitals, museums of antiquities and curiosities, shops,
markets, palaces, arsenals, opera houses, theatres, colleges,
libraries, jails, and churches. In tolerant London, Amster-
dam, Berlin, and Moscow, there were churches of many de-
nominations; the true church alone could raise its cross in
Rome, Paris, and Vienna. For all this resplendence, world
travelers reported that the European cities could hardly
equal the ancient Chinese capital of Peking with its 2,000,000
inhabitants and scores of shining palaces.

The Rulers of Men

In the great realms of Europe, millions of subjects lived
out their mature years knowing only a single monarch.
England was ruled by three Georges of Hanover in direct
succession, father to son, for more than a hundred years
following 1714. Of the Bourbons of France, Louis XV
reigned for almost half a century after 1715 and Louis XVI
held his throne until deprived of it by the revolutionaries.
The domination of Maria Theresa over the Hapsburg pos-
sessions lasted from 1740 to 1780; her son Joseph II became
a participant in power in 1765 when he was crowned Holy
Roman Emperor, and after her demise he governed alone
until 1790. In Prussia two Hohenzollerns with intense fixity
of purpose, though opposites in character, encompass almost
the whole century: Frederick William I ruled from 1713
to 1740, his son Frederick II, known as the Great, until 1786. After Peter the Great's death in 1725 and a rapid succession of minor tsars and tsarinas, the Romanov empire became the heritage of two women, Elizabeth from 1741 to 1762 and Catherine II from 1762 to 1796. Monarchs who endure so long must leave their imprint, for good or evil, upon the state.

The great ministers had briefer tenures in office for sundry reasons, ranging from the vicissitudes of party government in England to the inconstancy of a tsarina's affections in Russia. But in the realm of France figures like Cardinal Fleury (1653–1743) and the Duc de Choiseul (1719–1785), and in Austria Count Haugwitz (1700–1765) and the Prince von Kaunitz (1711–1794), played such dominant roles in shaping governmental policies that, though subjects of the monarch, they were hardly his servants. In a number of the minor European states, the crowned head became little more than a Merovingian puppet, manipulated by a wily expert in statecraft and in the art of dominating superiors in status. The regime of the "Portuguese Richelieu," the Marquis de Pombal (1699–1782), is the most striking example of this ministerial dictatorship. The royal mistresses of Europe, many of them endowed with far greater longevity than is the normal fate in their profession, exerted power in a few of the petty courts of Europe and in France during the reign of Louis XV; in the other great realms monarchy was not, in fact, unduly subject to the influence of the bedchamber.

Princes of the blood and great nobles, at the apex of the social pyramid, were members of a glamorous international aristocracy. As a result of marriage or death, they were called upon to govern one or another of the continental states as
monarchs by divine right or to rule as vassals over one of the many picayune principalities into which German- and Italian-speaking lands had been chopped up. Despite language difficulties, monarchs shifted nationality with relative ease when royal succession called them to foreign thrones. Catherine II of Russia was a German princess, and the Georges of England were Hanoverians.

Travelers, Migrants, Exiles

Men began to travel more frequently as the centralized states of Europe constructed better highways to ride on and made them safer from brigandage. Noble Englishmen's sons and their tutors took the Grand Tour and dashed through the capitals of the continent. An impoverished poet like Oliver Goldsmith (1728–1774) made his way in more humble fashion, playing his flute for his supper in peasant huts. Russians appeared in Paris; the *philosophes* Diderot (1713–1784) and Grimm (1723–1807) braved the Russian snows to visit Catherine II; Voltaire (1694–1778) accepted the hospitality of Frederick II in Berlin; French writers crossed the Channel to admire English liberties; English philosophers journeyed to France and Switzerland; the young Goethe (1749–1832) was dazzled by the beauties of Italy. The man of letters, like the military commander of parts, was made at home in any one of the enlightened courts of the continent. The intermittent wars of the century did not significantly impede the movement of persons across state boundaries, and since war was usually restricted to the battlefield, an enemy alien was not necessarily suspect nor did he run any great risk of forfeiting his life or his liberty. Monarchs themselves traveled, and when they visited other countries they did not restrict themselves to polite conversation at the royal courts, but sought out artisans and manufactur-
ers at work and studied experimental farming. Students from Russia were sent to the more advanced countries of the west to learn the newest agricultural methods—a dubious personal opportunity; for, as the British agriculturist and traveler Arthur Young (1741–1820) reports, they were fearful lest failure to comprehend the novelties bring exile to Siberia as punishment for their obtuseness. There were voluntary expatriates who established colonies in each other's countries and taught foreign languages. The French teacher, male and female, appeared as a fixture of genteel society throughout Europe. Great adventurers made their entrances and exits leaving havoc in their train. It was the age of Casanova the lover (1725–1798) and of Cagliostro the magician and impostor (1743–1795).

Apart from these individual wanderings, there were mass migrations on an international scale whose volume it is difficult to estimate. Perhaps as many as a million persons, including transported criminals, sailed from England for the colonies during the century. A steady migration to England from across the Irish Sea was accentuated during the famine of 1782–1784. In 1750 about 100,000 Serbs, angered by Hapsburg decrees which subjected them to Hungarian rule, passed across the border into Russia. And there was an irregular movement of artisans defying national boundaries, even though most European states enforced police restrictions on their emigration in order to protect the supply of laborers in time of peace and of recruits for the army in time of war. England was especially worried about the foreigner's enticement of skilled artisans who might bear away with them treasured industrial secrets, and in 1782 a law was passed prohibiting their emigration. Nevertheless a small number of skilled artisans from industrially advanced Eng-
land continued to find their way to France by clandestine means. From France in turn there was a trickle to other parts of Europe. These men became agents in the diffusion of the new technology.

The only great religious expulsion of the century struck the Jesuits, who were driven from Portugal, Spain, Austria, and France, seats of their former power, and were, ironically enough, received by the atheistical king of Prussia. Occasionally a philosopher or a writer was banished from one of the Catholic countries for his heretical pronouncements, only to be hailed in triumph in a neighboring land.

Jews, traditional victims of mass expulsions in Europe, were allowed to remain at peace in those states where they had infiltrated, though they continued to suffer disabilities. Catherine II of Russia (1729–1796), however, did establish a limit to their penetration eastward into her territory. In the eighteenth century the trend of Jewish migration from west to east began to reverse itself: a few stray Jews moved from the ghettos of Poland into the urban centers of Germany and Holland, where they hoped to enjoy the tranquility of western European tolerance and enlightenment; others ventured as far as Bordeaux.

A European Consciousness

Improved facilities for travel and the relatively easy exchange of ideas helped to develop among the upper classes a European consciousness. The term "cosmopolitan" had a positive connotation in literate eighteenth-century circles, and cosmopolitan meant European. The intellectuals often referred to themselves as Europeans and were aware that the Enlightenment was a European movement sweeping
through all the nations of the continent. However, the formal culture and manners of one nation, France, tended to impose themselves upon all others, and stamped the Age of Reason with a Gallic imprint. French was the common international language of intellectual converse as well as of diplomacy, and the “Europeans” and “Cosmopolites” looked to Paris as their capital.

Simultaneously with the spread of a European consciousness there was a literary renascence which gave expression to the national spirit and national patriotism of many individual European peoples. But modern nationalism was not a powerful ideological force before the French Revolution and Napoleon. Romantic nationalism—the idea of the unique genius and superiority of the Englishman, Frenchman, German, Russian, or Spaniard—was an intellectual tendency which, though it had its roots in the eighteenth century, flowered extravagantly only in the nineteenth.

As far as the great mass of the peasants were concerned, they were hardly touched by a profound national consciousness, and surely not by any awareness of themselves as Europeans. They knew that they were Christian and they were bound by their familial and local loyalties. They lived out their lives without venturing further than a few miles from their birthplace and their emotional horizon was geographically limited. Territorial transfers effected by the powers in wartime did not move the peasants deeply as long as their huts escaped the firebrands of enemy troops.

The next two chapters present the main currents of new ideas which coursed through the European continent and the strip of territory inhabited by British colonials in Amer-
ica. Although the ideas were not shared by the mass of the people and the traditionalists among the ruling classes, it was precisely these novel conceptions of the intellectual innovators which marked the Age of Reason with its distinctive character.
Scientific and Theological Interactions

ISAAC NEWTON (1642–1727) had synthesized the heritage of the sixteenth and the seventeenth centuries in physics, astronomy, mathematics, and mechanics, and had added to them his own epoch-making discoveries. The whole formed a compact body of laws explaining the physical universe which was more convincing than any previous scientific synthesis attempted by man. Not many Europeans were erudite enough to comprehend his *Philosophiae Naturalis Principia Mathematica* (1687) in the original Latin, but in a popularized form this vision of the world had a tremendous impact upon men’s minds in the succeeding centuries. The vogue for simplified expositions even called forth a special *Newtonism for the Ladies* in Italian.

The reading public of Europe lost interest in theological disputations about religious dogma as they became absorbed in contemplation of Newton’s world-machine, whose rules of motion both of celestial bodies in the heavens and of objects on earth were translated into mathematical formulae. It was amazing to realize that the whole universe was subject to identical physical laws and that these laws could be expressed in mathematical symbols which no one could deny or about which there could be no substantial differ-
ence of opinion. Even the skeptical David Hume (1711-1776) expressed his wonderment at the perfect functioning of this world-machine, subdivided into an infinite number of lesser machines: "All these various machines, and even their most minute parts, are adjusted to each other with an accuracy, which ravishes into admiration all men, who have ever contemplated them." ¹

Science and Sectarian Theology

The theologians of the various Christian churches had always been divided among themselves. The new science gave men a sense of security and finitude because it seemed to produce incontrovertible propositions which would stand impregnable for all time. "Every sect, in whatever sphere, is the rallying-point for doubt and error. Scotist, Thomist, Realist, Nominalist, Papist, Calvinist, Molinist, and Jansenist are only synonyms. There are no sects in geometry. . . ." ² wrote Voltaire in his Philosophical Dictionary. Two scientists in different parts of the world, Newton in England and Leibniz (1646-1716) in Germany, had simultaneously discovered the calculus through independent ratiocination. Few men dared contradict the Newtonian system once it was published. When an advance was made in physics or mathematics it achieved the status of a generally recognized truth about the world which anyone who had studied the elementary principles of these sciences could comprehend. The theologians of the various Christian sects were eternally denying one another's premises, proving one

another’s affirmations to be falsehoods, denouncing one another as heretics. The suspicion soon dawned upon inquiring minds that either these theological quibblings were a pack of nonsense, or that they concerned themselves with matters which could not be fathomed and therefore ought to be let alone, or that they were rousing men to shed one another’s blood over issues which were intrinsically of no consequence. Science was yielding a regular harvest of new discoveries in every field. Why repeat arguments about theology which were usually circular, were of no avail, never reached a widely accepted conclusion, and only ended in civil wars, massacres, and burnings at the stake?

Science as practiced in the laboratory of the physicist Robert Boyle (1627–1691) or as propounded in the writings of Newton did not in and of itself solve the problems of man’s destiny on earth or the mystery of creation. Indeed, many of the fathers of seventeenth-century science accepted traditional religious dogmas along with their scientific view of the physical world after creation. Newton himself was profoundly religious and he wrote a commentary on the Book of Daniel. Some proceeded with their researches and experiments as if the two worlds of science and theology were quite separate and distinct. Many of them acted from conviction; others merely gave lip service to revealed religion to keep out of trouble with the authorities.

Science, however, was steadfastly undermining the Christian view of the world even though the scientists did not attack the church frontally, continued to render it formal obedience, and received its sacraments. Science as a form of knowledge deflected interest from a striving to comprehend the nature of God and his relationship to man to non-metaphysical researches which were discovering new laws
for the physical universe. The external world became the focus of intellectual interest. Of course there were scientists and laymen who interpreted these laws of nature as the work of Nature's God, men for whom every scientific law was but another proof of the perfect wisdom of God who had created so wonderful a world mechanism. To them, the revelation that the whole universe was subject to an identical set of laws governing motion and gravity served to point up the essential unity of the divine creation. But once they accepted God as an Original Creator or a Prime Mover the scientists did not have further need for His intervention into the workings of the laws of the universe which were destined to go on functioning in the same way forever. Men inevitably became ever more absorbed in uncovering these secret and rational laws of nature and less and less in the God who had created them. Mediaeval thought had considered excessive preoccupation with any aspect of the physical universe evil because the external world could only be a source of sin. The eighteenth century reversed the emphasis and many intellectuals looked askance upon metaphysical questions as a likely way to fall into nonsense, which in the language of the age was equivalent to evil.

*Scientific Method Applied to Religion*

While scientists in their laboratories and mathematicians in their studies did not engage in open warfare with revealed religion, in eighteenth-century France there arose a group of popular philosophers who took it upon themselves to do battle with the church and to proclaim the conflict between science and religion in a truculent manner. With a few exceptions, these *philosophes* were not scientists themselves. They were rather popularizers and transmitters to the literate
public of Europe of the scientific ideas of the seventeenth century, primarily those of Isaac Newton, René Descartes (1596–1650), John Locke (1632–1704), and Francis Bacon (1561–1626). Voltaire was the most brilliant wit in the group, and Denis Diderot the man with the greatest capacity to co-ordinate and simplify for a vast body of readers the scientific knowledge of the age. The *Grande Encyclopédie*, edited by Diderot and Jean d'Alembert (1717–1783) and published from 1751 to 1772, was the great common enterprise in which, despite individual differences, all the philosophers co-operated to present Europe with a unified body of knowledge in the new spirit.

These *philosophes* set up criteria for determining truth which by the end of the century were generally accepted by men outside the church. They allowed as truth only those facts and theories which could be arrived at by the employment of a strict rationalist or scientific method. Their basic principles they adopted from two thinkers of the previous age, Descartes and Bacon, both of whom they assimilated
despite fundamental divergences between them. The *philosophes* had an oversimplified formulation of the method of science, one hardly adequate in our own day, but it served their purpose.

Descartes had taught them to reason, to deduce knowledge by logical steps from clear and distinct ideas, the best example of which was mathematics. If in any field of knowledge a man could reason from one axiom to another with the certainty of a mathematical demonstration, he was on absolutely secure ground and nobody could doubt his assertions. His original axioms naturally had to be as well founded as his later deductions. "We think," explained Diderot, "that the greatest service to be done to men is to teach them to use their reason, only to hold for truth what they have verified and proved."  

Now it was perfectly clear to an eighteenth-century intellectual that theological propositions as well as many of the theories about the origin of kingship were not derived in accordance with the principles of the Cartesian method. While the Christian apologists *appeared* to reason logically from basic premises, they were continually allowing arguments drawn from authority and tradition as embodied in the Bible and other sacred writings to be intermingled with their presentations. Moreover, the primary characteristic of the mathematical spirit, as the *philosophes* understood it, was its emphasis on consistency. After examining the Bible, the *philosophes* came to the conclusion that its revelations lacked this requirement for truth, since there were patent discrepancies between one passage and another. Both Judaic and

---

Christian commentators for centuries had made efforts to conciliate the flagrant contradictions, but when eighteenth-century German Biblical scholars and laymen like Voltaire tackled the same texts they concluded that the conciliations were artificial and preposterous. The spirit of logical mathematical consistency which cannot endure contradiction was a potent weapon in the hands of lay intellectuals who judged the documents of the church by this standard.

Even more destructive of accepted religious doctrine was the inductive method which the French *philosophes* acknowledged they learned from the Elizabethan Francis Bacon. As a matter of fact, laboratory scientists were not much influenced by Bacon's exposition of the experimental method of science. His eighteenth-century fame was due primarily to the accident that his method of drawing generalizations a posteriori, after a set of natural experiments had been completed, impressed the *philosophes* as a sure means of arriving at truth. The Baconian emphasis on the facts of experience as the source of scientific law became a methodological bludgeon in the hands of the intellectuals, who condemned as superstitions all sorts of explanations about the physical universe sanctified only in patristic and scholastic literature. The Baconian emphasis on the experimental method led the *philosophes* to discredit anything which was not in conformity with normal everyday experience and which could not be examined for truth or falsehood by experience. For them the only kind of reality was objective and scientific, the only phenomena allowable those which could be apprehended by the senses. Miracles failed to meet the crucial test. They were strange effects which could not be accounted for by direct natural causes. The religious explanation of their origin was not in conformity
with the facts of experience and the workings of natural law in a world which was rational. Diderot argued:

You see, once one sets foot in this realm of the supernatural, there are no bounds, one doesn't know where one is going nor what one may meet. Someone affirms that five thousand persons have been fed with five small loaves; this is fine! But to-morrow another will assure you that he fed five thousand people with one small loaf, and the following day a third will have fed five thousand with the wind.⁴

At a time when the churches of Europe recognized the existence of angels and devils the *philosophes* demanded that these beliefs submit themselves to the canons of experience. Since no one could prove their existence from experience, they insisted that they were only figments of the imagination, or fabrications of priests who imposed untruths upon mankind.

There was a third set of propositions which fortified the polemics of the French intellectuals against revealed religion, and this was the doctrine of John Locke set forth in the *Essay Concerning Human Understanding* (1690). Along with Newton and Bacon he is one of the seminal thinkers whose writings the *philosophes* imported from England and disseminated throughout Europe. Locke taught that there was nothing in the intellect which had not previously been in the senses, and that the senses received their impressions directly from nature, from the external world. This thesis, in its simplified form, was as revolutionary a doctrine for the study of man in society as Newton's world-machine had been for a comprehension of the physical universe. The Christian view of the world had posited an immortal soul

which was given and taken away by God and was the center of conflict between good and evil. This soul of man could grasp divine principles which were absolute truths; it could be moved by divine intervention; unless it were corrupted it recognized the truths of religion and the foundations of authority in the state. But what if there were no soul and man’s reason were merely the result of combinations of sensations, as the French philosopher Etienne de Condillac (1715–1780) expounded in the wake of Locke? If all knowledge and the reasoning power itself originated in sensations which were mere reflections of the external world, if they were not God-given, then the absolutes upon which the state and society were presumably based would crumble. Ideas of God, the divine right of kings, immortality, and state authority derived from mere sensory perceptions, nothing more. They were not unalterable. Man-made, they could be modified or abandoned. Though Locke himself never ventured that far, his theory of the source of knowledge led men to question every basic premise of society, to try to find out how many of these ideas, no longer revered as religious absolutes, were actually based on falsehoods inculcated into man and written upon the tabula rasa, the clean slate of his mind, after birth.

The Assault on Christianity

The intellectuals leveled their guns upon organized state religions which in the first half of the century were still powerful, vital, even controlling forces in men’s lives. Unlike most previous critics of the Christian church, the philosophes were no mere heretics or deviators from true doctrine. They struck at the very roots of the church. The theological disputations of the sixteenth and the seventeenth
centuries were as nothing compared to this battle to the death between the secular intellectuals and the church. It was their avowed purpose to demolish the citadel.

Among intellectuals of this persuasion Christianity came to be regarded as a pernicious plot which had been hatched in order to turn the earth over to the oppressive powers of a priestly class. The annals of Christianity were to them a chronicle of lies and crimes, and the day it was wiped out, the more sanguine philosophers believed, all the ills of suffering humanity would disappear along with it. Those worldly abuses with which the Christian church had become associated historically were judged to be the essence of the faith. The whole of revealed—as contrasted with natural—religion, in any of its forms, was nothing but an absurd imposition upon the ignorant. A French Catholic historian of thought has called this attack on the church the Trial of God, the God of the Protestants as well as the God of the Catholics. No longer did men debate the fine points of theological doctrine or the forms of religious rites; they now questioned the role of God himself. Men wondered whether they lived in a world governed by a God who was watching over their immortal souls or whether they were merely subject to laws of nature which had at some remote time been set into motion by a Prime Mover whom deists chose to call God. Discussions on the existence of God were passionate in the salons of the nobility and the bourgeoisie and in the correspondence of intellectuals and kings.

The weapons of assault of the philosophers on Christianity were learning, wit, scorn, humor, and mockery, the exposure of a tawdry reality beneath the veil of false piety.

---

5 This section follows the account by Paul Hazard, La Pensée Européenne au XVIIIe siècle (Paris, 1946), I, 38–77.
Religion was struck at because it was not rational. Even more, it was attacked as a patent fraud, the artifice of those who controlled the instruments of the cult. Most powerful of the harangues against what Voltaire called the "infamous thing" were those which depicted the thousands upon thousands of victims of intolerance among all the revealed religions of the world. Christianity was judged by simple human standards of good and evil. If its priests were hypocrites who transgressed every tenet of the moral code, if the church in the name of purity of doctrine sanctioned the bloody carnage of fellow Christians, then Christianity, far from being sacred and holy, was a wicked institution which had kept mankind in a terrible thrall dom and prevented the attainment of peace, harmony, and progress among the peoples of the earth.

Apologies for Christianity were not lacking, and all sorts of devices were employed to render religion palatable to the age. Pious polemicists identified Christianity with Reason and assumed the premises of their opponents as their point of departure; or they identified God and Nature, winding up in a sentimental pantheism which soon merged with other currents into the mainstream of romanticism. English divines were especially adept in contriving outlandish testimonials to the truth of Christianity, such as the *Trial of the Witnesses of the Resurrection of Jesus* (1729), in which a jury of Englishmen, after hearing the evidence as if they were in a court of law, formally found the apostles not guilty of false witness. As a body of polemical writing the eighteenth-century apologies for Christianity were turgid and verbose, rather trivial, wanting in grandeur of style and thought. No one crossed rapiers with Voltaire.

Through the 1760's Christian religions, enthroned in Eu-
European polities as state religions, could still command obedience through the intervention of the secular arm—get a few hundred antclerical writers imprisoned, have the public executioner make a bonfire of their books, force the hanging of a man who was accused of sacrilege, try people for witchcraft, and even burn victims in *autos-da-fé*. By the last decades before the Revolution, the doctrines of the church were no longer secure enough to permit many such persecutions. The philosophers were thoroughly aware that they had fomented a revolution in the fundamental beliefs of their fellow men. Voltaire reported on each new triumph of philosophy against the church with the exultation of a commander winning battles. When the pope, acceding to universal demand, dissolved the Jesuit order in 1773, he was awarding the philosophers the palm of victory with his own hand and leaving them the field.

Frederick II of Prussia (1712–1786), with characteristic shrewdness, had already read the signs of the times some two decades earlier. In his confidential *Political Testament of 1752* he dismissed the pope as “an old neglected idol in his niche. . . . His thunderbolts are extinguished. His policy is known. Instead of laying peoples under interdict and deposing sovereigns as of yore, he is satisfied if no one deposes him and lets him say Mass peacefully in St. Peter’s.”