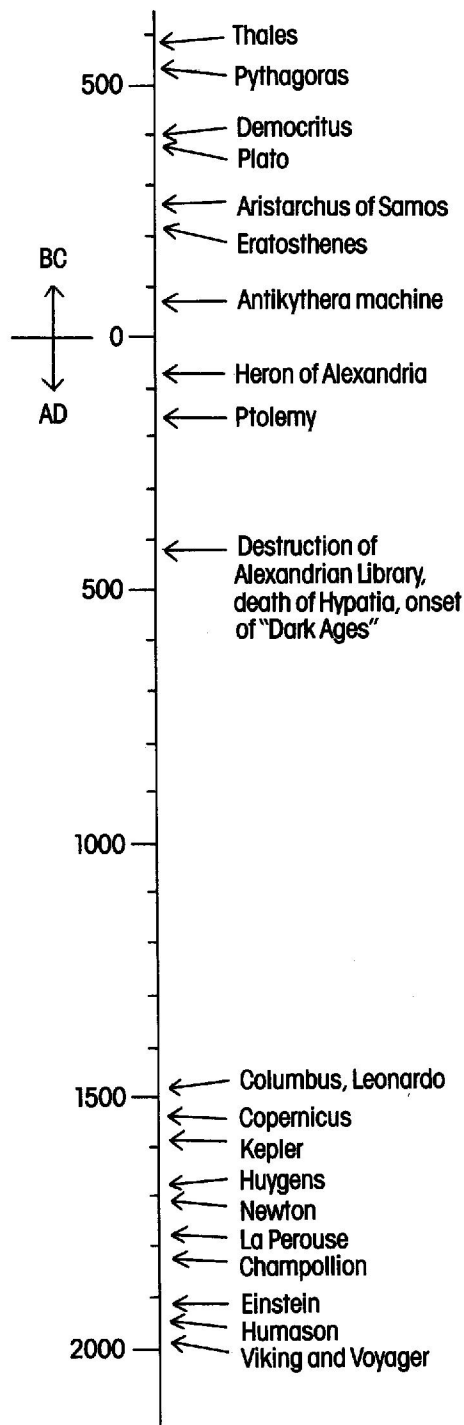


ing—citizen, not just of a nation, but of the Cosmos.* To be a citizen of the Cosmos . . .

Here clearly were the seeds of the modern world. What prevented them from taking root and flourishing? Why instead did the West slumber through a thousand years of darkness until Columbus and Copernicus and their contemporaries rediscovered the work done in Alexandria? I cannot give you a simple answer. But I do know this: there is no record, in the entire history of the Library, that any of its illustrious scientists and scholars ever seriously challenged the political, economic and religious assumptions of their society. The permanence of the stars was questioned; the justice of slavery was not. Science and learning in general were the preserve of a privileged few. The vast population of the city had not the vaguest notion of the great discoveries taking place within the Library. New findings were not explained or popularized. The research benefited them little. Discoveries in mechanics and steam technology were applied mainly to the perfection of weapons, the encouragement of superstition, the amusement of kings. The scientists never grasped the potential of machines to free people.† The great intellectual achievements of antiquity had few immediate practical applications. Science never captured the imagination of the multitude. There was no counterbalance to stagnation, to pessimism, to the most abject surrenders to mysticism. When, at long last, the mob came to burn the Library down, there was nobody to stop them.

The last scientist who worked in the Library was a mathematician, astronomer, physicist and the head of the Neoplatonic school of philosophy—an extraordinary range of accomplishments for any individual in any age. Her name was Hypatia. She was born in Alexandria in 370. At a time when women had few options and were treated as property, Hypatia moved freely and unselfconsciously through traditional male domains. By all accounts she was a great beauty. She had many suitors but rejected all offers of marriage. The Alexandria of Hypatia's time—by then long under Roman rule—was a city under grave strain. Slavery had sapped classical civilization of its vitality. The growing Christian Church was consolidating its power and attempting to eradicate pagan influence and culture. Hypatia stood at the epicenter of these mighty social forces. Cyril, the Archbishop of Alexandria, despised her because of her close friendship with the



A time line of some of the people, machines and events described in this book. The Antikythera machine was an astronomical computer developed in ancient Greece. Heron of Alexandria experimented with steam engines. The millennium gap in the middle of the diagram represents a poignant lost opportunity for the human species.

* The word *cosmopolitan* was first invented by Diogenes, the rationalist philosopher and critic of Plato.

† With the single exception of Archimedes, who during his stay at the Alexandrian Library invented the water screw, which is used in Egypt to this day for the irrigation of cultivated fields. But even he considered such mechanical contrivances far beneath the dignity of science.