

Aristotle, Greek Aristoteles, (born 384 BCE, Stagira, Chalcidice, Greece—died 322, Chalcis, Euboea), ancient Greek philosopher and scientist, one of the greatest intellectual figures of Western history. He was the author of a philosophical and scientific system that became the framework and vehicle for both Christian Scholasticism and medieval Islamic philosophy. Even after the intellectual revolutions of the Renaissance, the Reformation, and the Enlightenment, Aristotelian concepts remained embedded in Western thinking.

Aristotle's intellectual range was vast, covering most of the sciences and many of the arts, including biology, botany, chemistry, ethics, history, logic, metaphysics, rhetoric, philosophy of mind, philosophy of science, physics, poetics, political theory, psychology, and zoology. He was the founder of formal logic, devising for it a finished system that for centuries was regarded as the sum of the discipline; and he pioneered the study of zoology, both observational and theoretical, in which some of his work remained unsurpassed until the 19th century. But he is, of course, most outstanding as a philosopher. His writings in ethics and political theory as well as in metaphysics and the philosophy of science continue to be studied, and his work remains a powerful current in contemporary philosophical debate.

This article deals with Aristotle's life and thought. For the later development of Aristotelian philosophy, see Aristotelianism. For treatment of Aristotelianism in the full context of Western philosophy, see philosophy, Western.

## Life

### The Academy

Aristotle was born on the Chalcidic peninsula of Macedonia, in northern Greece. His father, Nicomachus, was the physician of Amyntas III (reigned c. 393–c. 370 BCE), king of Macedonia and grandfather of Alexander the Great (reigned 336–323 BCE). After his father's death in 367, Aristotle migrated to Athens, where he joined the Academy of Plato (c. 428–c. 348 BCE). He remained there for 20 years as Plato's pupil and colleague.

Many of Plato's later dialogues date from these decades, and they may reflect Aristotle's contributions to philosophical debate at the Academy. Some of Aristotle's writings also belong to this period, though mostly they survive only in fragments. Like his master, Aristotle wrote initially in dialogue form, and his early ideas show a strong Platonic influence. His dialogue *Eudemus*, for example, reflects the Platonic view of the soul as imprisoned in the body and as capable of a happier life only when the body has been left behind. According to Aristotle, the dead are more blessed and happier than the living, and to die is to return to one's real home.

Another youthful work, the *Protrepticus* ("Exhortation"), has been reconstructed by modern scholars from quotations in various works from late antiquity. Everyone must do philosophy, Aristotle claims, because even arguing against the practice of philosophy is itself a form of philosophizing. The best form of philosophy is the contemplation of the universe of nature; it is for this purpose that God made human beings and gave them a godlike intellect. All else—strength, beauty, power, and honour—is worthless.

It is possible that two of Aristotle's surviving works on logic and disputation, the *Topics* and the *Sophistical Refutations*, belong to this early period. The former demonstrates how to construct arguments for a position one has already decided to adopt; the latter shows how to detect weaknesses in the arguments of others. Although neither work amounts to a systematic treatise on formal logic, Aristotle can justly say, at the end of the *Sophistical Refutations*, that he has invented the discipline of logic—nothing at all existed when he started.

During Aristotle's residence at the Academy, King Philip II of Macedonia (reigned 359–336 BCE) waged war on a number of Greek city-states. The Athenians defended their independence only half-heartedly, and, after a series of humiliating concessions, they allowed Philip to become, by 338, master of the Greek world. It cannot have been an easy time to be a Macedonian resident in Athens.

Within the Academy, however, relations seem to have remained cordial. Aristotle always acknowledged a great debt to Plato; he took a large part of his philosophical agenda from Plato, and his teaching is more often a modification than a repudiation of Plato's doctrines. Already, however, Aristotle was beginning to distance himself from Plato's theory of Forms, or Ideas (*eidos*; see form). (The word Form, when used to refer to Forms as Plato conceived them, is often capitalized in the scholarly literature; when used to refer to forms as Aristotle conceived them, it is conventionally lowercased.) Plato had held that, in addition to particular things, there exists a suprasensible realm of Forms, which are immutable and everlasting. This realm, he maintained, makes particular things intelligible by accounting for their common natures: a thing is a horse, for example, by virtue of the fact that it shares in, or imitates, the Form of "Horse." In a lost work, *On Ideas*, Aristotle maintains that the arguments of Plato's central dialogues establish only that there are, in addition to particulars, certain common objects of the sciences. In his surviving works as well, Aristotle often takes issue with the theory of Forms, sometimes politely and sometimes contemptuously. In his *Metaphysics* he argues that the theory fails to solve the problems it was meant to address. It does not confer intelligibility on particulars, because immutable and everlasting Forms cannot explain how particulars come into existence and undergo change. All the theory does, according to Aristotle, is introduce new entities equal in number to the entities to be explained—as if one could solve a problem by doubling it. (See below Form.)

## Travels

When Plato died about 348, his nephew Speusippus became head of the Academy, and Aristotle left Athens. He migrated to Assus, a city on the northwestern coast of Anatolia (in present-day Turkey), where Hermias, a graduate of the Academy, was ruler. Aristotle became a close friend of Hermias and eventually married his ward Pythias. Aristotle helped Hermias to negotiate an alliance with Macedonia, which angered the Persian king, who had Hermias treacherously arrested and put to death about 341. Aristotle saluted Hermias's memory in "Ode to Virtue," his only surviving poem.

While in Assus and during the subsequent few years when he lived in the city of Mytilene on the island of Lesbos, Aristotle carried out extensive scientific research, particularly in zoology and marine biology. This work was summarized in a book later known, misleadingly, as *The History of Animals*, to which Aristotle added two short treatises, *On the Parts of Animals* and *On the Generation of Animals*. Although Aristotle did not claim to have founded the science of zoology, his detailed observations of a wide variety of organisms were quite without precedent. He—or one of his research assistants—must have been gifted with remarkably acute eyesight, since some of the features of insects that he accurately reports were not again observed until the invention of the microscope in the 17th century.

The scope of Aristotle's scientific research is astonishing. Much of it is concerned with the classification of animals into genus and species; more than 500 species figure in his treatises, many of them described in detail. The myriad items of information about the anatomy, diet, habitat, modes of copulation, and reproductive systems of mammals, reptiles, fish, and insects are a melange of minute investigation and vestiges of superstition. In some cases his unlikely stories about rare species of fish were proved accurate many centuries later. In other places he states clearly and fairly a biological problem that took millennia to solve, such as the nature of embryonic development.

Despite an admixture of the fabulous, Aristotle's biological works must be regarded as a stupendous achievement. His inquiries were conducted in a genuinely scientific spirit, and he was always ready to confess ignorance where evidence was insufficient. Whenever there is a conflict between theory and observation, one must trust observation, he insisted, and theories are to be trusted only if their results conform with the observed phenomena.

In 343 or 342 Aristotle was summoned by Philip II to the Macedonian capital at Pella to act as tutor to Philip's 13-year-old son, the future Alexander the Great. Little is known of the content of Aristotle's instruction; although the *Rhetoric to Alexander* was included in the Aristotelian corpus for centuries, it is now commonly regarded as a forgery. By 326 Alexander

had made himself master of an empire that stretched from the Danube to the Indus and included Libya and Egypt. Ancient sources report that during his campaigns Alexander arranged for biological specimens to be sent to his tutor from all parts of Greece and Asia Minor.

### The Lyceum of Aristotle

While Alexander was conquering Asia, Aristotle, now 50 years old, was in Athens. Just outside the city boundary, he established his own school in a gymnasium known as the Lyceum. He built a substantial library and gathered around him a group of brilliant research students, called “peripatetics” from the name of the cloister (peripatos) in which they walked and held their discussions. The Lyceum was not a private club like the Academy; many of the lectures there were open to the general public and given free of charge.

Most of Aristotle’s surviving works, with the exception of the zoological treatises, probably belong to this second Athenian sojourn. There is no certainty about their chronological order, and indeed it is probable that the main treatises—on physics, metaphysics, psychology, ethics, and politics—were constantly rewritten and updated. Every proposition of Aristotle is fertile of ideas and full of energy, though his prose is commonly neither lucid nor elegant.

Aristotle’s works, though not as polished as Plato’s, are systematic in a way that Plato’s never were. Plato’s dialogues shift constantly from one topic to another, always (from a modern perspective) crossing the boundaries between different philosophical or scientific disciplines. Indeed, there was no such thing as an intellectual discipline until Aristotle invented the notion during his Lyceum period.

Aristotle divided the sciences into three kinds: productive, practical, and theoretical. The productive sciences, naturally enough, are those that have a product. They include not only engineering and architecture, which have products like bridges and houses, but also disciplines such as strategy and rhetoric, where the product is something less concrete, such as victory on the battlefield or in the courts. The practical sciences, most notably ethics and politics, are those that guide behaviour. The theoretical sciences—physics, mathematics, and theology—are those that have no product and no practical goal but in which information and understanding are sought for their own sake.

During Aristotle’s years at the Lyceum, his relationship with his former pupil Alexander apparently cooled. Alexander became more and more megalomaniac, finally proclaiming himself divine and demanding that Greeks prostrate themselves before him in adoration.

Opposition to this demand was led by Aristotle's nephew Callisthenes (c. 360–327 BCE), who had been appointed historian of Alexander's Asiatic expedition on Aristotle's recommendation. For his heroism Callisthenes was falsely implicated in a plot and executed.

When Alexander died in 323, democratic Athens became uncomfortable for Macedonians, even those who were anti-imperialist. Saying that he did not wish the city that had executed Socrates "to sin twice against philosophy," Aristotle fled to Chalcis, where he died the following year. His will, which survives, makes thoughtful provision for a large number of friends and dependents. To Theophrastus (c. 372–c. 287 BCE), his successor as head of the Lyceum, he left his library, including his own writings, which were vast. Aristotle's surviving works amount to about one million words, though they probably represent only about one-fifth of his total output.

## Writings

Aristotle's writings fall into two groups: those that were published by him but are now almost entirely lost, and those that were not intended for publication but were collected and preserved by others. The first group consists mainly of popular works; the second group comprises treatises that Aristotle used in his teaching.

## Lost works

The lost works include poetry, letters, and essays as well as dialogues in the Platonic manner. To judge by surviving fragments, their content often differed widely from the doctrines of the surviving treatises. The commentator Alexander of Aphrodisias (born c. 200) suggested that Aristotle's works may express two truths: an "exoteric" truth for public consumption and an "esoteric" truth reserved for students in the Lyceum. Most contemporary scholars, however, believe that the popular writings reflect not Aristotle's public views but rather an early stage of his intellectual development.

## Extant works

The works that have been preserved derive from manuscripts left by Aristotle on his death. According to ancient tradition—passed on by Plutarch (46–c. 119 CE) and Strabo (c. 64 BCE–23? CE)—the writings of Aristotle and Theophrastus were bequeathed to Neleus of Scepsis, whose heirs hid them in a cellar to prevent their being confiscated for the library of the kings of Pergamum (in present-day Turkey). Later, according to this tradition, the books were purchased by a collector and taken to Athens, where they were commandeered by the Roman commander Sulla when he conquered the city in 86 BCE. Taken to Rome, they were edited and published there about 60 BCE by Andronicus of Rhodes, the last head of the Lyceum.