

THE ATTITUDES OF THE GREEK PHILOSOPHERS
TOWARD THE INDUSTRIAL ARTS

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CHAPTER I

INTRODUCTION

It is not the aim of the writer to prove or disprove that the attitudes of the Greek philosophers toward industrial arts have any effect upon us today, but only to expose these attitudes and leave the reader to his own interpretation.

Today, the last half of the twentieth century, we find industrial arts being taught as a part of the general education program in many accredited high schools in the United States. Modern educators have recognized its value and are making it an integral part of the elementary and junior high school curriculum.

In contrast we are told by Aristotle in his "Politica" that education of Greece during the fourth century B.C. consisted of reading and writing, gymnastics, music and drawing. In order to better understand the lack of any type of mechanical arts in the schools of the Hellenic states, one must gain some insight into the general educational philosophy of the Greeks.

In theory and in practice, Hellenic education aimed at producing the best possible citizen. Perfection of body,

extensive mental activity, culture, and irreproachable taste were necessary characteristics. To produce a young man who would be charming in person and graceful in manners, that is, a beautiful soul housed in a beautiful body, was the aim of the Greeks. To them the beautiful and the good were identical.¹

The body of the young Athenian was developed through their system of physical training. Beautiful figure, artistic posture and graceful movement were the result. Games and physical exercises were meant to develop pluck, fortitude and endurance. The condition as well as the treatment of the body had a very important effect upon the mental activities and upon character. It was for this reason that physical training formed at least half of every system of education practiced in the Hellenic states or was recommended by the Hellenic philosophers.²

However, even in regard to this type of training, there must be moderation. Since there must be balance and proportion in the human personality, professionalism was avoided. On one occasion young Alexander the Great was

¹ Frederick Eby and Charles F. Arrowood, The History and Philosophy of Education Ancient and Medieval, p. 228.

² Kenneth J. Freeman, Schools of Hellas, p. 279.

rebuked by his father because he played the cithara too skillfully. "You play like a professional," said the father.³

Civic duty or service to the state was an outstanding feature of Greek training. A good citizen functioned efficiently in war and in peace. Qualities of a good soldier were courage, endurance, strength, spirit, determination, fortitude, pluck, energy and self-control. In time of peace he must be just, manly, dignified, wise in judging proposed policies, and submissive to the laws.

Next to duty to the state, good manners and morals were the chief end of Athenian training. Reverence for the gods, respect for parents, politeness and good form were included. In this connection it must be emphasized that a small upper class, not the whole state, was exposed to this philosophy. As aristocracy, the duties of the upper class were not to accumulate riches, but to govern and to fight. They composed the electorate of the state, were members of public assembly and were the only citizens eligible for office. This citizenship through their criticism, shaped the art of the vase-makers, the sculptors, architects and tradesmen, the style of the orators, the dramas and music.

³ Eby, op. cit., p. 231.

Since the Greek conception of a citizen was an aristocrat, his excellence was thought to devote the greater portion of his energy and time to public activity. Hence, the existence of such a privileged class involved the existence of a class of producers to support them, and the producers, by the nature of their vocation, were excluded from the life of the perfect citizen. They did not have the necessary leisure to devote to public business; neither did they have the opportunity to acquire mental and physical qualities which would enable them to transact it worthily. For this reason, they were regarded by the Greeks as an inferior class. In some states they had no political rights at all and even in Athens, though they were admitted to citizenship, they never appear to have lost the stigma of social inferiority.⁴

Aristotle, the most balanced of all Greek thinkers and the best exponent of the normal trend of their ideas, excluded the class of artisans from the citizenship of his ideal state on the basis that they are debarred by their occupation from the characteristic excellence of man. Plato, in his insistence on the gulf that separates the citizen from the mechanic and trader, was in sympathy with the general current of Greek ideas. His ideal state was

⁴ G. Lowes Dickinson, The Greek View of Life, p. 74.

one which depended mainly on agriculture and in which commerce and exchange were reduced to the smallest possible dimensions. Every citizen was a landowner, forbidden to engage in trade, and the productive class was excluded from all political rights.

In contrast to the Greek citizen, who realized in the state his highest life, was an inferior class of producers who realized only the means of subsistence. Within this class was a distinction, the distinction between free men and slaves. In the majority of the Greek states the slaves were the greater part of the population; they were employed, not only in domestic service, but also in the fields, in factories and in mines. They performed a considerable part of the productive labor in the state; they existed simply to maintain the aristocracy of citizens.

Statement of the Problem

The problem is a study of the attitudes of the Greek philosophers toward industrial arts.

Delimitations

The problem is limited in the main to the study of the attitudes of Socrates, Plato, and Aristotle toward industrial arts. It was not possible to include all the Greek philosophers, but a brief biographical sketch was given of the more important philosophers beginning with Thales, the father of philosophy, and ending with Aristotle.

Method of Procedure

In Chapter II a study will be made of the background and general philosophy of the more important Greek philosophers from Thales through Aristotle. In order to better understand the attitudes of these philosophers it was necessary to acquire a better knowledge of their education, manner of living, and general philosophy.

A study will be made of the general philosophy of Socrates, Plato, and Aristotle in Chapter III.

The effect of this philosophy on industrial arts will be considered as the main issue of the thesis in the next to the last chapter.

Chapter V will include the summary, possible conclusions and recommendations.

Sources of Material

The sources of material used in this study were historical books on education, books on Greek civilization, and books on the works of Plato and Aristotle secured through the library of Eastern Kentucky State College and the library of the University of Kentucky.

Definition of Terms

"Industrial Arts" is the study of changes made by man in forms of material to increase their value and the problems of life related to these changes.

"Tradesman" refers to a person skilled in a particular trade.

"Craftsman" refers to one who has become skilled in any particular craft.

By "artisan" is meant a person trained in some mechanic art or trade.

"Hellenic civilization" as used in this thesis refers to Greece from the time of Thales through Aristotle.

Related Studies

The writer was unable to find any dissertations or theses related to this study.

CHAPTER II

THE BACKGROUND AND GENERAL PHILOSOPHY OF THE GREEK PHILOSOPHERS

When mythology and the religious beliefs of the contemporaries of Homer and Hesiod were unable to survive criticism, the result was the birth of philosophy. Toward the end of the seventh century the statesman, Thales, often referred to as the father of philosophy, a native of the great commercial center, Miletus, opened the way to a rational explanation of the great phenomena of nature. His interests were geometry, physics, astronomy and cosmology. He traveled widely and is reputed to have taught the Egyptians how to calculate the height of a pyramid by its shadow; also, that he foretold the eclipse of the sun and calculated the distance of ships at sea.¹ Through his observation of vapor, dew, hail and snow, he concluded that all matter was derived from water. This was indeed the stimulus of research.

It may seem strange that Thales could have reached such a conclusion, but the importance to science and philosophy was the question he raised and not his answer to it. The answer reveals the influence of traditional

¹ Eby, *op. cit.*, p. 296.

mythologies on these early intellectual radicals. How could one be led to such a theory that the world is made of water? He could have observed in his Egyptian travels that crops, land and people depended on the course of the Nile or he could have heard it from the Babylonian sages who recited the epic of the beginnings, of the primeval being Apsu, and of Tiamat, the all-encircling flood and streaming dragon of the deep, the primeval ocean, Teamtu, which Marduk split in two, separating the upper waters of heaven from those of regions below the earth.² Thales was also naturalistic in his view of existence. He thought that all things were full of gods and had a soul-like character. Apparently, he gave a lot of thought to the primal matter out of which things arose, as well as to the basic substance and principle of nature.

Anaximander and Anaximenes

Two other Milesians of the sixth century, Anaximander and Anaximenes, were devoted to the same research. Anaximander, born about 611 B. C., adopted and developed Thales' conception of nature. He was known for his practical inventions. His interest in astronomy and geography probably was the underlying cause of his being the first scholar to construct a map. In quest of a first principle to account

²

Radoslav A. Tsanoff, The Great Philosophers, p. 13

for substances and events actually discoverable, water, air and other things seemed to him to be limited in amount; hence, there would not be enough to explain mutations and occurrences in the total cosmos. The primary substance must have various qualities, to be the basis of water, air, and other forms of matter; hence, it must be described in more general terms as Boundless--not the infinite in the modern sense, for it was still a physical something. The Boundless, indestructible, eternal, never growing old, was regarded as surrounding and imbuing all worlds, determining all being and generations, the sole cause and ground of all change.³ He thought that man sprang from fish and in scientific speculations he contended that the earth hung free, supported by nothing and kept its place because it is equally distant from all things.⁴

Anaximenes was born approximately 588 B. C. and died about 524 B. C. His ideas united the conceptions of Thales and Anaximander. Like Thales, he thought the world was flat like a table top, suspended in a cosmic vapor. Anaximenes considered the problem of transformation: how the world of various things arose out of matter. His answer to this problem is free of mythology, and expounds the mechanics of existence. Air may be condensed, yielding

³Horatio W. Dresser, A History of Ancient and Medieval Philosophy, p. 25.

⁴Tsanoff, op. cit., p. 14.

winds, clouds, liquids and solids. These three Ionian philosophers were devoted to scientific research as opposed to mythology or theology in an effort to explain the development of the ordered nature of things.

Pythagoras

Pythagoras, another philosopher of nature, was born on the island of Samos between the years 580 and 570 B.C.-- the exact date of his birth is not known. Pythagoras left home when still quite young and traveled extensively through Egypt, Phoenicia, Chaldaeaa, and India. During these travels he received a great part of his education by learning from the Phoenicians the nature of numbers, their significance and proportions, and astronomy from the Chaldaeans.

The historically important part of the career of Pythagoras begins with his migration to Croton, located in southern Italy, about the year 529. Here he was the founder of an organization which was, in its beginning, a religious brotherhood for the moral reformation of society rather than a philosophical school. The school was really a secret fraternity of the strictest order, aristocratic in its social and political outlook, morally austere, with rigid regulation of diet and daily conduct.⁵ Although the school flourished for a while, about the year 500 B.C. it was

⁵
Ibid., p. 16.

attacked and burned because of political entanglements. Pythagoras and many of his colleagues were slain.

The scientific doctrines of the Pythagorean school have no apparent connection with the religious mysticism of the society or their rules of living. Their discourses and speculations all connect themselves with the idea of number, and the school holds an important place in the history of mathematical and astronomical science. Aristotle tells us that the Pythagoreans applied themselves to the study of mathematics and were the first to advance that science and that having been reared in it, they thought its principles must be the principles of all existing things. The Pythagoreans find measure, order, proportion everywhere as their guide to the nature of things. The idea of mathematical relations suggests obedience to law, therefore a uniform system. Number must then be the basic principle of the cosmos, implied in the structure of reality--the true substance of things.⁶ Pythagoras is notable for having taught philosophy as "a way of life" which his followers endeavored to realize in its fullness.

Xenophanes

Xenophanes was born about the year 570 B.C. in Colophon of Asia Minor. Because of the central idea of his teaching

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Dresser, op. cit., p. 32.

the conception of being, Xenophanes is said to be the pioneer of the Eleatics and he occupies a place among the thinkers and poets of Greece. In a poem written at the age of ninety-two he tells of his wanderings about Greece as a minstrel for sixty-seven years, finally settling in Elea, a Greek city in southern Italy, where he founded a school in which he did most of his teaching and writing. He was both a critic and a reformer, believing that he had a mission in opposing the national mythology and proclaiming the unity of the God-head.⁷ His interpretation of God is similar to the Ophic emphasis of divine unity in Zeus. Xenophanes conceives of God as the One and the All, being so far removed from the ordinary mortality as to be devoid of the frailties commonly attributed to the gods.⁸ He spoke out against myths of Homer and Hesiod, which ascribed everything of sinful nature of the gods by celebrating the morality and truthfulness of God.⁹ So far as Xenophanes attempted to explain the nature of things, he seems to have been in complete agreement with the Ionians. Xenophanes denounced such things as luxury, effeminacy, and drunkenness.

⁷ Ibid., p. 37.

⁸ Ibid., p. 38.

⁹ La Rue Van Hook, Greek Life and Thought, p. 221.

Xenophanes was reported also to have been a scientific observer. He made a study of shells and other impressions of marine life found on hills and in the midland districts, the inference being that men and animals were developed from life in the sea. He advised his listeners to have intercourse with tyrants as little as possible, or as agreeably as possible. It is true that Xenophanes was very much aware of human defects, and was always eager to provoke thought even though he had no system to offer.

Parmenides

Parmenides, successor of Xenophanes, was born of a renowned family approximately 539 B. C., and seemed to have enjoyed all of the advantages of his time. As a man of wealth and learning, he was esteemed highly by the magistrates of Elea where he took some part in political life, contributing a new series of laws.

Parmenides carries to the fullest extent Xenophanes' conception of the One uncreated, external Unity, apart from which no other reality exists: even the many would be a sign of illusion, hence would be Non-Being.¹⁰ Unlike Xenophanes, who denounced error and superstition, Parmenides gladly gives the opinions of men in his works. Not only are impressions cited in his verses, but also the traditional beliefs of mythology.

¹⁰ Dresser, op. cit., p. 47.

Empedocles

Empedocles was considered to be among the first of the pluralists. He was born in Agrigentum about 490 B.C. and died in exile about 435 B. C. He was not only a philosopher, but also a pioneer in chemistry and biology. It might also be said that he was a political reformer, a mystic and a healer. Empedocles seems to have conceived a period when love was predominant and all the elements were one great sphere. Since this period, discord began to enter, and the world became full of contrasts and oppositions. This theory attempted to explain the separation of elements by strife, the formation of earth and sea, of the sun and moon and the atmosphere.

Some of his most interesting views dealt with the physiology of man and the origin of plants and animals. As the elements combined through the work of love, there appeared quaint results: heads without necks, arms without shoulders. As these structures met, there were horned heads on human bodies, oxen with heads of men and figures of double sex. Most of these complex structures disappeared about as quickly as they arose; only in rare cases, where the several parts were adapted to each other, did these structures last. Various influences reduced the creatures of double sex to male and female, and the world was replenished with organic life. He thought that man, animal and plant were composed of the same elements but in different

proportion. They all have sense and understanding, the mind of man being always dependent upon the body. According to Empedocles, the heart and not the brain is the organ of consciousness. In Aristotle's opinion Empedocles made no distinction between perception and thought. These theories, though far-fetched, mark the beginning of Greek Pluralism as it continues toward its culmination in the theory of atomism.

Anaxagoras

Born about 500 B. C. in Ionia, Anaxagoras renounced a political life and wealth to devote his life to reflection. When still a young man he moved to Athens where he received both recognition and hostility. He remained in Athens approximately thirty years and during this time he won the love and admiration of Pericles and Euripides. Euripides derived from him an enthusiasm for science and humanity. In some accounts young Socrates is listed as one of his disciples. Anaxagoras is given credit for bringing philosophy and the spirit of scientific inquiry from Ionia to Athens. The observations by Anaxagoras of celestial bodies led him to expound new theories of the universal order, which was in contradiction with the popular faith. He attempted to explain scientifically the eclipses, meteors, rainbows and the sun which he described as a mass of blazing metal. The heavenly bodies, he described as being masses of

stone which had been torn from the earth and ignited by rapid rotation. This explanation was not in line with the Polytheism of the time and the enemies of Pericles used the superstitions of their countrymen as a means of attacking him. Anaxagoras was arrested and charged with contravening the established dogmas of religion. Although Pericles finally secured his acquittal, he was forced to retire from Athens to Lampsacus where he died in the year 428 B. C.

Leucippus

Leucippus is known as the author of the Atomic Theory. Very little is known of his life except that he was born in Thrace approximately 465 B. C. It is likely he settled at Elea where he might have been influenced by Anaxagoras and Empedocles in formulating his theory of cosmic elements. Although Leucippus was said to have written a book on the Order of the Universe, nothing remains to prove it. It is likely that he was the author of such a book and other writings which could have been incorporated in the writings of his disciple, Democritus, who receives most of the credit for the formulation of atomism.

Democritus

Democritus, a disciple of Leucippus, was born of wealthy parents approximately 460 B. C. He, like Leucippus,

was also a native of Thrace. Democritus received a wonderful education which included travels through Greece, Egypt and the Orient. Upon his return to his native land he was highly honored as a man of science by the erection of commemorative statues. He was a great writer and had written numerous books which were compiled by a later scholar under fifteen heads, covering all branches of philosophy. The loss of these writings was probably the greatest loss of works in ancient philosophy. Democritus' works have been compared with the works of Plato. He is regarded as having the greatest genius for knowledge of any philosopher since Aristotle, and his desire was not to gain fullness of knowledge but fullness of understanding. By this philosophy he aroused others to research.

Plato does not make mention of Democritus in his works, although his theory of the cosmos was entirely different. Aristotle, on several occasions, mentions Democritus with a great deal of respect, but usually to attack his ideas.

Democritus' theory of atomism were those of Leucippus on which he expanded. He taught that there existed the Atoms and the Void, the Void being the empty space or vacuum inside of which are the atoms constantly moving and striking each other in a rotary movement which forms bodies and worlds. If the atoms are formed close together, the body is said to be hard; otherwise, it is soft. The Atomic Theory of Leucippus and Democritus did not receive

favor in the fifth and fourth centuries B. C. Much later, Epicurus adopted it to support his antagonistic views toward current theology.

Protagoras

Protagoras, the first and greatest of the Sophists, was born in Thrace about 485 B. C., and was considered the first philosopher to teach for financial gain. He went to Athens about the middle of the fifth century where he became an intimate friend of Pericles and won a great reputation as a teacher.¹¹

Unlike the theory of atomism, which taught the nature of things in the outer world by means of concepts, the chief interest of Protagoras was in the inner world of percepts. "Man is the measure of all things: of those that are that they are; and of those that are not that they are not."¹² This statement is not taken to mean man in general but man as an individual, having sensations, being able to think, feel, and note appearances, responding to what is given.

Protagoras is reported to have said of the gods: "Of the gods I can know nothing neither that they are nor that

¹¹
 "Protagoras," The Home and School Reference Work, V, 2359.

¹²
 Windelband, History of Ancient Philosophy, p. 118.

they are not."¹³ This belief brought a charge of atheism against him which resulted in his being banished from Athens. He later met his death by drowning while en route to Sicily.

Georgias

Georgias, also a Sophist, was born about the same time as Protagoras or a few years later. He traveled to Athens about 427 B. C. where he made quite an impression with his eloquence. He was influential in the development of the rhetorical style and tried to prove that every statement is equally false, that it cannot be known that anything really exists, and even if we did possess science, we could not communicate it.

Heraclitus

Heraclitus was born approximately 540 B.C. at Ephesus and was of distinguished parentage. Not much is known of his early life, but that he seemed to lead a lonely life. From this and his contempt for mankind, he was known as the dark philosopher. Heraclitus might be said to be the founder of metaphysics. Starting from the standpoint of the Ionian school, he accepted their idea of the unity of nature but denied their theory of being. He believed that all things are one. Hot and cold, good and evil, night and day are

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Dresser, op. cit., p. 75.

the same in the sense that they are inseparable halves of
 one and the same thing.¹⁴

These two ideas, universal flux and continual strife in nature dominate the thought of Heraclitus, but they do not lead him to conclude that nature is chaos. All things change, but they do not change in just the same way. There is a law of change, and there is a wisdom, a reason in the behavior of nature, which the wise man can perceive through understanding if he does not merely trust his senses, which are bad witnesses.¹⁵ Though much popular theology pervades his ethical teaching he attacks the ceremonies of popular religions. After his death the chief disciple of his teachings was Cratylus.

Socrates

Socrates was born in Athens about 469 B. C. His parents, from all accounts, were very poor. His father gained his livelihood as a sculptor and his mother was a midwife. There is no record as to his early life or education, but it is a well known fact that Socrates as a young man had a great love for knowledge and took advantage of whatever opportunity was at hand. He adopted his father's occupation as a sculptor, but later came to believe that he had a divine

¹⁴"Socrates," Encyclopedia Britannica, II, 455.

¹⁵Tsanoff, op. cit., p. 20.

vocation to examine himself through questioning other men. In his eagerness for knowledge, Socrates would search out anyone who claimed to possess truth and ply him with penetrating questions. He was not particular in choosing someone with whom to converse, talking with all sorts and conditions of men, in the market place or gymnasias, on the street or any place where an opportunity presented itself. The topics of discussion covered such things as war, politics, marriage, friendship, love, housekeeping, poetry, the arts, trades and sciences, and especially moral questions. He was very much interested in everything human, but cared very little for nature or for the speculations on the nature of things. Profoundly reflective in type, he possessed exceptional powers of concentration, and is reported to have stood upon one occasion for twenty-four hours absorbed in thought. He is the ideal representative of those who look within for truth. Discerning the fallacies of those with whom he argued, he turned the conversation toward the truth of the matter, in quest of what is universal.

Always good natured and serene, and indulging in witticisms, without taking anything or anybody too seriously, he was undoubtedly an ideal man to know. Consequently, he had many friends, including some men, such as Alcibiades, who were not always in public favor. He associated at times with those who drank heavily, and attended banquets,

but always kept sober, manifesting a high degree of self control. He was, indeed, a man of remarkable composure and moderation, temperate in all things. He lived a simple life, had few wants, and maintained that anyone could support him. Socrates did not write, nor did he directly teach in the sense of propounding a system, yet he was one of the greatest teachers of all time. He met his obligations in peace and war with the same constancy of character which he manifested in his divine vocation. By living a life of equanimity coupled with moral courage in meeting life's vicissitudes, he exemplified ethical insight amid recognition of the realities for which it stood, and so set the standard. By doing what he believed was right, regardless of any consequences likely to come upon himself, he put ethical principle above expediency.

Socrates was described in all accounts as lacking the features of physical beauty, being short and stout, with thick lips and bleary eyes. He was clumsy, uncouth and careless in dress. These imperfections of physique were overshadowed by his great charm of character, his love of humanity and his sincerity of speech. The work he wrought upon two diverse types such as Xenophon and Plato profoundly shows the impression of his life and character.

Although Socrates was a grotesque individual, he was a great lover of beauty. He was a great joker, ever playful,

and a great moral force, so that his earnest things were all jests, and all his jests in earnest, a combination of characteristics which have led people to compare Lincoln with him.¹⁶ When talking on the most important of themes, he tried to do so in a simple fashion, beginning and ending with common life. From reading the works of Plato and Aristotle one would naturally come to the conclusion that Socrates was a worldly man, but he seldom left the city of Athens. He found all human nature in one city. He not only addressed his countrymen, but all humanity. Through his disciples, he reached mankind throughout the world.

In the study of the general philosophy of Socrates we have to rely entirely upon secondary sources, from the works of Plato, Xenophon, and Aristotle. No attempt will be made to elaborate on Socrates' philosophy in full on the wide range of subjects which he covered, but only to give a general idea of some of his teachings with emphasis being placed on his educational philosophy. The subject that gained the most attention for Socrates was the art of living or human relations. The virtues, such as justice, temperance, courage, gratitude, and friendship, also the nature of wealth, statesmanship and questions concerning the government, the practical arts and crafts and household

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Dresser, op. cit., p. 81.

economy exhausted the range of his inquiries.¹⁷ In the words of Xenophon, a great admirer of Socrates, a fitting description is given.

He never wearied of discussing human topics. What is piety? What is impiety? What is the beautiful? What the ugly? What the noble? What the base? What are meant by just and unjust? What by sobriety and madness? What by courage and cowardice? What is a state? What is a statesman? What is a ruler over men? What is a ruling character? and like problems. 18

Physics and biology did not have much attraction for Socrates. The nature philosophers had so contradicted themselves and confused their students in regard to nature that Socrates came to believe that the secrets of nature were hidden from the knowledge of man by the gods. Being primarily an educational philosopher, Socrates was interested in subjects pertaining to the education of youth. Recognizing education as one of the great problems of man, Socrates attempted to clarify the virtues which made up the aim of education.

According to Xenophon, Socrates had definite views of the curriculum. He believed that gymnastics was a necessity for the sake of health, mentality, and military efficiency. The development of the personality was to be accomplished through poetry, dancing and music. Socrates

¹⁷Eby, op. cit., p. 323.

¹⁸H. G. Dakyns, The Works of Xenophon, III, 5.

had no place for theology in his curriculum but believed that practical religion played a great part in the growth of youth. Arithmetic was to be taught for business reasons, and geometry, only as far as it had practical application. He believed that self-knowledge was essential to happiness and could be realized through study of psychology. The last and most important in the opinion of Socrates was the study of ethics.

Although the thirst of Socrates for knowledge was great, he was not interested in knowledge for its own sake, but believed in the freedom of inquiry. Only subjects that had to do with practical living found favor at all with Socrates. The necessary knowledge was that type which would enable man to handle his own affairs, run the state, produce goods in an efficient manner, and live a just, temperate and happy life. The introduction of clear thinking into the intellectual life of Athens was his objective.

In the field of ethics Socrates expounded the belief that no man would do wrong of his own free will but only through ignorance. If a man has the intelligence to know right from wrong he will do what is right. This thought is brought out in Plato's "Protagoras."

O Protagoras and Socrates, what is the meaning of being overcome by pleasure if not this? Tell us what you call such a state--if we had immediately and at the same time answered 'ignorance' you would have laughed at us. But now, in laughing at yourself: for you also admit that men err in their choice of pleasures and pains: that is, in their

choice of good and evil, from defect of knowledge; and you admit further, that they err not only from defect of knowledge in general, but of that particular knowledge which is called measuring. And you are aware that the erring act which is done without knowledge is done in ignorance. 19

Socrates came to accept this conception for several reasons: first, he was a man possessing an ideal justice and independence, and as far as we know, lived up to this ideal. Second, Socrates was a man whose personality is seldom equaled. Third, Socrates regarded morals and practical technique or art as alike in character. ²⁰ Regardless of whether it is a carpenter building a house, an artist painting a portrait or a pilot flying his plane, they all, alike, wish to produce the best result. Knowing what is the best procedure to follow to attain the desired results determines the technique. Fourth, Socrates believed the principle of unity in the virtues must exist.

Socrates had a very unique method of teaching. He conducted investigations instead of reaching conclusions, and always tried to challenge each student to think consistently for himself. Unfortunately, Socrates wrote nothing. He preferred talking and remembering to reading and writing.

19 Benjamin Jowett, "Protagoras," p. 200.

20Eby, op. cit., p. 327.

Plato

Plato was born in Athens in 427 B. C., two years after the death of Pericles. He was indeed of a noble family; his father was a descendant of Codrus, the last king of Athens, and his mother of Solon, the famous Greek law-giver. His original name was Aristocles and possibly was called Plato, a derivation from the Greek word "platon" meaning broad, because of his broad athletic shoulders. The fact that Plato was born in the center of Greek thought and activity, he doubtless received the usual education of the aristocratic Athenian youth in music, gymnastics and general culture. At the age of twenty he was a successful writer of poetry and had distinguished himself as a wrestler in the Isthmian games at Corinth. Related by descent and living kinship to men actively engaged in politics, he nevertheless decided to devote himself to the pursuits of the scholar, influenced in part by the growing decay of the Athenian state.

In 407 B. C., after having already studied the Heraclitic philosophy, he met Socrates. This determined his future course of life. With the great master he spent the next eight years in intimate companionship and became his most appreciative and influential disciple. Immediately after the death of Socrates in prison, the disciple went to Megara where, with his friend Euclid, he studied the Eleatic

philosophy. Further travels extended into Cyrene, Egypt, Italy and Sicily. In Sicily he formed an intimate friendship with Dion, brother-in-law of Dionysius, the ruler of Syracuse. In Cyrene he visited the mathematician Theodorus, and in Italy he came in contact with Pythagoreans, from whom he gained an interest in practical life and public affairs.

After these ten or twelve years of travel, Plato returned to Athens and in 387 B. C. established his Academy. In this quiet retreat he surrounded himself with an interesting circle of pupils and until his death, forty years later, was engaged in teaching and writing.

To present the philosophy of Plato is a somewhat difficult task because of its abstractness and the broad general principles which he formulated. He did not propound a definite system but gave some ideas and ideals and left the individual to form his own conclusions. Plato began his thinking on the educational problem of virtue and whether it could be taught, but he soon ran into difficulty. He found it was necessary to understand thoroughly the nature of mankind and the world.

To better understand Plato's philosophy it is worthwhile to consider the fact that he had two motives. First, he wished to continue Socrates' task at the point where Socrates had to leave it, to consolidate his master's teaching and defend it against inevitable questioning. His second motive was to defend the idea of the city-state

as a political unit as well as an economic and social unit. The city-state was in a state of collapse as a result of the conquests of Philip and Alexander. The writing of the "Republic" in the prime of his life and toward the end of his life, the "Laws" shows that he was motivated by the same ideal throughout, the ideal of a reformed society based on the purification and strengthening of the city-state.

On his doctrine of knowledge, Plato recognized three kinds. First was the knowledge of the senses. A second kind of knowledge given was opinion which was a matter of guessing at the truth and was not to be considered innate or positive knowledge. The third kind of knowledge was the true knowledge or that type of knowledge which cannot be denied, such as a mathematical truth. Also general concepts and abstract ideas belong in this category. These ideas include beauty, equality, justice, goodness and holiness, none of which are to be had through experience. These ideas are considered to be innate and were inherent in the mind prior to any type of experience. This brings about the problems as to why infants do not show such knowledge when born and how could such knowledge be recalled. To these problems Plato theorized that the soul contained a knowledge of reality in a former state, and when the soul joins the body at birth it is in a state of forgetfulness. This doctrine of innate ideas was very important to all of Plato's philosophy.

In his theory of government Plato created two ideal states brought out in his "Republic" and "Laws." The "Republic" was written when his mental ability was at its best and is considered one of the world's greatest masterpieces and its first Utopia. The state, according to Plato, is a personality, the same as an individual, and anything to be found in the individual is found to a greater extent in the state. People in the low class of society who did such things as production work, commerce and other menial vocations seem to find their greatest happiness in sensuous pleasures. These vocations were considered degrading to the soul and the people who indulged in such things were really considered no better than the slaves. They had no rights whatsoever in the state and were held in strict control. If an individual did not possess a high degree of moral and intellectual fitness, he was subordinated to this class, even though he might be born of the high class. Also the offspring of the low class who showed promising ability to a marked degree would be trained for service to the state. Plato held to his most fundamental principle of justice which demanded the capacity of any individual was to be recognized.

His second class was to constitute the police force and also the military for defense. The conduct of the government, which was to be no larger than the city-state, was given over to those who had the highest intellect, high

moral character and were advanced in years, which of course would be the rule of the philosophers. Plato did not believe that the best interests of the state could ever conflict with the best interests of the individual.

Plato's view on family life was in complete contradiction to the modern view on family relations. The welfare of the state was far more important than family associations. This opinion was probably brought about by the failure of parents, during the old Athenian period, to rear their children properly. He concluded that the state should have absolute control of the breeding, and training of children, because training by the family could not be trusted. The slaves were the only ones to be allowed to carry on ordinary family life. Women were to be allowed to work along side of men in all offices of state, theorizing that women had the same capacities as men but being weaker they had these qualities in a lesser degree. In his own words he gives his position:

I conclude, my friend, that none of the occupations which comprehend the ordering of a state belong to a woman as a woman, nor yet to man as man; but natural gifts are to be found here and there, in both sexes alike; and, so far as her nature is concerned, the woman is admissable to all pursuits as well as man; though in all of them the woman is weaker than man. 21

Plato's idea of marriage was that it should be state controlled and the citizens whom the state selected for marriage were brought together on occasion for the sole purpose of procreating offspring. His idea was to make application of breeding as used in pureblooded animals to produce specific traits. This method would bring forth a superior race. The children born by this method would never be permitted to know their parents, being owned by the state and nursed by state nurses.

In his ideal state, Plato would not allow citizens to own property, thereby being communistic or socialistic as far as citizens were concerned. The state would be a divine institution with a divinely ordained function. It was to be a pattern of justice, which ranked highest among the Platonic code of morals.

In two of Plato's greatest works, the "Republic" and the "Laws," education seems to be the foremost thought in his mind. In some of his other works education is considered to be a minor topic. He valued education so highly that it played the major role in everything he thought and wrote. He regarded education "the first and fairest thing that the best of men can ever have."²² Plato's definition of education as given in the "Laws" is cited as follows:

²²
Laws, paragraph 644.

Now, I mean by education that training which is given by suitable habits to the first instincts of virtue in children; when pleasure and friendship, and pain, and hatred, are rightly implanted in souls not yet capable of understanding the nature of them, and who find them, after they have attained reason, to be in harmony with her. This harmony of the soul, taken as a whole is virtue; but the particular training in respect of pleasure and pain, which leads you always to hate what you ought to hate, and love what you ought to love, from the beginning of life to the end may be separated off; and, in my view, will be rightly called education. 23

Plato's first objective of education dealt with the unity of the state, to give such training that would instil feeling of community life in each citizen. Each citizen was to be so trained in this connection that he would devote his all to the state in lieu of private gain or interests. His second objective was to instil into the youth good habits such as courage, temperance and military skill which in turn would produce virtue or civic efficiency. Plato states that reason is present in the soul of a child. To exalt the intellect above the sensibilities and the soul above the body is the most distinctive work of education.²⁴ Another objective of education was to establish aesthetic appreciation in the child, the love of what is good and beautiful, the production of an individual who is capable of intelligently controlling himself in conduct. The school was also to be a socializing agency. In Plato's own words:

23 Ibid., paragraph 653.

24 Eby, op. cit., p. 369.

Through education, whatever that may be, will have the greatest tendency to civilize and humanize them in their relations to one another and to those who are under their protection. ²⁵

He believed there were two kinds of education, one for preparation in practical affairs which was to be received by the trade classes and the other was education for devoted service to the state. In his "Laws" he explained that this first type of education was really not education at all, that it was mean and illiberal and was apart from intelligence. The only real education was education in virtue which gives training in how to rule and obey.

Plato had much to say about the curriculum and seems to have forecast it for fifteen centuries. He, like Socrates, believed in the gymnastics as a part of the formal education but would have nothing to do with that type of training which solely prepared young men to win prizes. The organization of Plato's ideal educational program consisted also of a nursery which was to include children from three to six years of age. This part of education was to consist mostly of play, fairy tales and other simple amusements. The most important part of education is right training in the nursery. ²⁶ The elementary school was to begin at the age of six. The boys and girls were not to be allowed to mingle, and would live in state dormitories. In this period Plato thought something should

²⁵ Republic, paragraph 416.

²⁶ Laws, paragraph 643.

be introduced to control the spontaneous wild and uncoordinated movements of young boys and girls. In teaching the boy or girl music, poetry and dancing would bring control and order into the youngster for the first time. Young boys of ten were to start their beginnings of military training. The middle school, which was the training at time of puberty, was given over to instrumental music which lasted until the age of sixteen. In his old age, Plato wavered from the idea of too much intellectual training, and in his "Laws," he cuts literary instruction to the minimum and does not make mention of the higher music.

At the age of sixteen came the rigid military course and gymnastics which lasted until the age of twenty. At this time the most promising were to be given a ten-year course in the sciences. From thirty to thirty-five years of age some who had been selected for higher officers were to study dialectics and higher philosophy. From thirty-five to fifty they were to serve the state and after fifty they were to be relieved from service to the state to study true being.

Aristotle

In about 384 B. C. not far from the Macedonia border in the Greek colony of Stagira in Thrace, Aristotle was born. Nicomachus, his father, a physician in good standing with the King of Macedonia, was an author of medical works. His mother, Phaestis, was a descendant of the early settlers of that place.

Since the medical profession was hereditary in Aristotle's family, the scientific and medical atmosphere to which he was exposed no doubt influenced him in habits of accuracy and exactness. When he was orphaned at an early age, he became the charge of Proxenus of Atarneus. In 367 B. C. Aristotle, then eighteen years of age, entered the school of Plato, the Academy in Athens, where he remained for twenty years; that is, until Plato's death. During this time, he had become renowned for his scholarship, outstanding writings, as well as for his public lectures on rhetoric.

After Plato's death Aristotle returned to Atarneus where he resided at the court of the ruler Hermias, a former member of the Academy. There he married Hermias' niece or sister, as some accounts give it. When Hermias was murdered by the Persians, Aristotle and his wife withdrew to Mitylene.

At the request of Philip of Macedon in 343 B. C., Aristotle assumed the tutorship of Alexander, the future conqueror of the world, then a youngster of thirteen. This position he held for three years. During the later part of this period Aristotle had the opportunity to rebuild the town of Stagira. Philip gave him permission to reassemble the inhabitants of this captured town, draw up its laws, and to build at nearby Mieza a gymnasium and park, and an imitation of the Academy. It was named the Nymphoeum, and it was probably here that Aristotle formed the habit of walking while imparting

instruction.²⁷ It is interesting to note that this institution existed even in Plutarch's time, over four hundred years later.

Aristotle, five years later, made his second move to Athens, at which time he founded the Lyceum. This school he directed for twelve years. The fact that he was an alien, coupled with the fact that he was a friend of the victorious Macedonian who had three years previously subdued Greece at Ahaeronea, resulted in his having many enemies. It is thus assumed that most of his pupils were foreigners. He spent his days writing and teaching. In a formal and scientific manner he would lecture in the mornings upon the higher branches of science. Themes more popular to an audience of lesser training were discussed in the afternoon. It was during this twelve-year residence in Athens that Aristotle composed most of his works. However, only a portion of these have come down to us. In fact, it is believed that his works, written for general circulation, on which his reputation was based, have perished entirely and that which did survive was a mass of material designed for the study and instruction of the Lyceum. In logic, metaphysics, ethics and politics, his conclusions were of great and permanent significance. In subsequent development of psychology, zoology, physics,

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Thomas Davidson, Aristotle and Ancient Educational Ideals, p. 156.

astronomy, aesthetics, as well as in historical investigations, Aristotle's writings were of the greatest value and importance.

After the death of Alexander the Great, the Greek states with Athens at their head, attempted to free themselves from the Macedonian power. Aristotle's former relation to

Alexander, and his friendship for the Macedonian governor, made him an object of attack. The charge of atheism was brought against him, as had formerly been brought against Anaxagoras and Socrates, and he retired to Chalcis in Euboea, where in the following year, 322 B. C., he died.

It is not possible in a short paper to give the philosophy of Aristotle on the many specific branches of knowledge with which he dealt. It is the purpose here to deal with the general development of his thought, and opinions which have influenced subsequent thought. Aristotle accepted the Platonic tradition until the death of Plato, but during the last twenty-five years of his life he followed a distinct method of his own. Whereas Plato had studied reality as a whole, Aristotle broke it down into several distinct divisions of physics, biology, ethics, politics and psychology, and studied the observable facts of reality in each of these fields, using concrete individual substances. His procedure in each field of inquiry was observation of data with the view of determining the data more exactly. The purpose of this type of approach was to discover some general theory without doing violence to

the data observed. He drew lines of division between the various sciences and gave them names which some of them still bear. If the essence of his method and teaching had been followed, there would have been a great period of scientific investigation and discovery, but his method was not followed, the reason being that his treatises seemed to have been lost or hidden away for a couple of centuries after his death. According to a tradition of antiquity, the library and treatises of Aristotle passed on his death to Neleus, the son of Coriscus of Scepsis and continued in the hands of descendants of Neleus, being completely forgotten until they were recovered for the world from the cellar of a house in Scepsis about 80 B. C.

Aristotle had great respect for given facts, and respectfully classified these facts according to their character. After reaching this scientific stage of his development, he was no longer interested in the ideas as conceived by Plato, but was interested in the common attributes which can be observed in the same kind of things which enable one to classify such things in terms of genera and species.

One of the general views which ran through Aristotle's thought is his view on evolution. The conception of growth is what distinguishes his thought from that of Plato. Plato had been more interested in being than in becoming. He tried to interpret permanent being in the light of permanent truths of mathematics by making number the basis of the universe

and identifying matter with space. His universe was static, but the universe of Aristotle is dynamic, being engaged in becoming. The nature of each thing moving through a process of development which is also nature, and what each thing is when fully developed we call its nature. The movement which he sees at work is a movement toward an end, imminent from the first in the subject of movement, and determining all its growth; for the process of evolution is for the sake of the thing finally evolved and not this for the sake of the process. Aristotle not only applies this conception to organic nature but also constructions in the sphere of art. The works of man, whether building a house, writing a tragedy, or establishing a state is the activity of realizing a plan or form and of causing materials used to move toward the form which is also its end. Nature and art are no different, in this regard, both moving on parallel lines toward the form or the end.

Of all the works of Aristotle it might be said that his treatises on politics and ethics have had the most continuous and deepest influence on subsequent thought. The "Nicomachean Ethics" is considered one of the world's great books. Its application of the doctrine of the mean to the various virtues; the relation between external goods and the inward happiness of the spirit; and its doctrine of habits which are all among the permanent possessions of humanity--all these things add to the greatness of the "Ethics."

In studying Aristotle's political philosophy we find that he tried to find the best type of government through the study of political life. He studied the histories and constitutions of one hundred and fifty-eight states, after which he wrote the "Politics" and also the constitution of Athens. He concluded that the state originated as a creation of nature, man being naturally a social or political animal. He recognized three main forms of government: monarchy, aristocracy, and democracy. He concluded that democracy was probably the best under most circumstances, but it also is likely to degenerate.

As the relation of the individual to the state, the state is necessary for the development of the individual, because the good of the individual is identified with the good of the whole state. According to Aristotle's own statement: "Since the end of individuals and of states is the same, the end of the best man and of the best constitution must also be the same."²⁸ According to this idea, the state receives the benefit from the development of the individual's rational nature. The individual is not an end in himself.

Neither must we suppose that any of the citizens belongs to himself, for they all belong to the state, and are each of them a part of the state, and the care of each part is inseparable from the care of the whole. ²⁹

²⁸ Benjamin Jowett, Politica, X, Book VII, p. 1134 a.

²⁹ Ibid., p. 1337a.

The inhabitants of the state were divided into two classes: citizens and slaves. This division was justified on the ground of nature:

But is there anyone thus intended by nature to be a slave, and for whom such a condition is expedient and right, or rather is not all slavery a violation of nature? There is no difficulty in answering this question on grounds of both reason and of fact. For that some should rule and others be ruled is a thing not only necessary, but expedient; from the hour of their birth, some are marked out for subjection, others for rule. 30

He specified why certain men are slaves. The slave has no faculty of deliberation and therefore certain men, because of lack in intelligence, are doomed to slavery.

In Aristotle's opinion the size of the state should be very small, small enough that each citizen would know the character of every other citizen which would enable public affairs to be conducted in a more harmonious manner.

Aristotle deals with the practical problems of education in Books VII and VIII of his "Politica" and the moral aspects in his works on ethics. Ethics and education are a part of the field of politics which makes it a function of the government. An intelligent and definite educational policy should be followed for its citizens in order to insure welfare and security for the state, and this can be true only when those who are responsible for conducting government affairs are trained to be wise in judgment and happy in conduct.

30
Ibid., Book I, p. 125⁴a.

Virtue and goodness in a state are not a matter of chance, but the result of knowledge and purpose. A city can be virtuous only when the citizens who have a share in the government are virtuous, and in our state all citizens share in the government. 31

In Aristotle's ideal state, the political life controls all social and moral affairs.

It is this that ordains which of the sciences should be studied in the state, and which each class of citizens should learn and up to what point they should learn them. 32

He believed that the young should be trained for the purpose of national ends.

The citizen should be moulded to suit the form of government under which he lives. For each government has a peculiar character which originally formed and which continues to preserve it. 33

His ideal was a very small city in which individuals were subjected to the interest of the state, and for this reason he taught that education should be the same for all youngsters.

The training in things which are of common interest should be the same for all. Neither must all suppose that any one of the citizens belongs to himself, for they all belong to the state, and are each of them a part of the state, and the care of each part is inseparable from the care of the whole....That education should be regulated by law and should be an affair of state is not to be denied. 34

³¹ Ibid., Book VII, p. 1332a.

³² W. D. Ross, Ethica Nicomachea, Book I, Vol. IX of The Works of Aristotle, p. 1094B.

³³ Jowett, op. cit., Book VIII, p. 1337a.

³⁴ Ross, op. cit., Book I, Vol. IX, p. 1094 B.

Aristotle was in agreement with Plato on the definition of education as to the art of making children love what they ought to love and hate what they ought to hate. "We ought to have been brought up in a particular way from our very youth, as Plato says, so as both to delight in and to be pained by the things we ought; for this is the right education."³⁵

He held that the aim of education should be the same for the state as for human life in general, and should include the following: health, numerous family members, fame and honor as a citizen, wise use of leisure, good moral character, and the development of the intellectual faculties. This view of the aim of education might be compared with the seven-point aim of the Commission on Reorganization of Secondary Education of 1918. The Commission listed them as health, command of the fundamental processes, worthy home membership, vocation, citizenship, worthy use of leisure time, and ethical character. There were only three important differences: the Commission would give everyone the chance for an education while Aristotle would educate only the citizens; the Commission had a broad view of vocations and Aristotle believed the only vocation was service to the state. The Commission did not place as much emphasis upon intellectual culture as did Aristotle.

³⁵
Ibid., Book II, Vol. IX.

Educational problems of Aristotle's day existed as they do today, especially in regard to subject matter. In Aristotle's own words he gives some of these problems:

"There is disagreement about the subjects....For mankind is by no means agreed about the things to be taught."³⁶

"The existing practice is perplexing. No one knows on what principle we should proceed--should the useful in life, or should virtue, or should the higher knowledge be the aim of training?"³⁷

36

Jowett, op. cit., Book VIII, p. 1337a.

37

Ibid., p. 1337a.

CHAPTER III

THE GOLDEN AGE

The period in Greek history (480-400 B.C.) when this nation reached its zenith in pursuits of an artistic nature such as in the fields of architecture, sculpture and painting, is often referred to as the Golden Age. It was in the fifth century B. C. that Hellenic civilization appeared in its full perfection. In achieving this realization Athens played an exceptional role. Athens was the city in which the great traits of Greek civilization, those which have left their imprint upon humanity, became so prominent and most illustrious. It is true that other cities produced remarkable men at that time, but no other could claim so great a number.

The Persian Wars ended in 479 B. C. and the material side of their influence was by no means insignificant. In many Greek towns the ruin made by the Persian invader was complete and the inhabitants on their return found all their temples destroyed and the sculpture, vases, and other dedications thrown down and broken.¹ These wars gave Greece a sense of its own moral force and the firmest confidence

¹
Ernest Arthur Gardner, A Handbook of Greek Sculpture, p. 241.

in its future. Full of grateful recognition towards its gods which had saved it, Greece set about to restore her ruined sanctuaries and to build new ones.

The art of the fifth century thus became national and patriotic as well as religious in theme. It was the victory over the Persians that made the Greeks realize their true superiority. Hence the struggle between light and darkness, between freedom and tyranny, between Europe and Asia, is the true subject of all the battles between gods and giants, or Greeks and Amazons, or Lapiths and Centaurs, and all are regarded as antitypes of the great struggle from which the Greeks themselves had emerged victorious.²

Never in all the world's history was there such a leap of civilization as in Greece in the fifth century. From approximately 460 B. C. the leader of the democracy was Pericles. He was an aristocrat who succeeded in securing the allegiance of the masses and his aim was to make Athens free, powerful and glorious.³ Athens became an empire and its treasures were devoted to the monumental decoration of Athens. This period of achievement, in reality a bequest of the Greeks to the world, is well summarized by Plutarch as follows:

²
Ibid., p. 242.

³
J. C. Stobart, The Glory That Was Greece, p. 162.

So then the works arose, no less towering in their grandeur than inimitable in the grace of their outlines, since the workmen eagerly strove to surpass themselves in the beauty of their handicraft. And yet the most wonderful thing about them was the speed with which they rose. Each one of them, men thought, would require many successive generations to complete it, but all of them were fully completed in the heyday of a single administration. 4

Architecture

The accomplishments of the Greeks in the field of architecture are truly admirable and the supreme achievement was the temple. Before any analysis of the artistic features of the temples which were used as a place of residence for the image of a deity and for the protection of religious offerings, it would be worthwhile to consider the building materials which a Greek architect had at his disposal and his methods of putting them together. Greece had an abundance of good building stone, limestone, both hard and soft, generally called poros. The island of Paros, one of the Cyclades, and Mount Pentelicus in Attica were sources of a plentiful supply of white marble, suitable not only for the builder, but also the sculptor. Crude, sun-dried brick was used also. A hard stucco surface was often coated over the brick. Roof tiles of terra-cotta were commonly used.

In the walls of the temples and in other buildings an elaborate system of bonding by means of clamps and dowels

⁴ Van Hook, op. cit., p. 36.

was resorted to.⁵ No use was made of lime mortar for this purpose. The clamps and dowels were usually of iron and they were fixed in their sockets by means of molten lead.

The arch played no part in architecture of this age. Only the flat ceiling was known. In Greek architecture of the fifth century B. C. there were two orders: the Doric and the Ionic.

In the Doric order the rather sturdy pillar rests without a base on the stylobate. A series of sections or drums make up the shaft of the pillar. The shaft is usually channeled with twenty flutes or channels which intersect at sharp angles. The diameter is slightly less at the top than at the bottom. The slightly swelling or curving outline of the shaft is called the entasis. The Doric capital consists of two parts: a lower curved portion or cushion, the echinus, and on top of this, a square block, the abacus, completing the capital. A super-structure, the entablature, consisting of architrave, frieze, and cornice, rests upon the capital. The architrave is composed of squared blocks which reach from column to column. The frieze is made up alternating triglyphs and metopes. The metopes were usually filled by stone blocks, sometimes decorated by sculpture. Generally, there is one triglyph over each column and over each intercolumniation. Below each triglyph is a small

⁵ F. B. Tarbell, A History of Greek Art, p. 78.

cleat, the regula, and under the regula are six drops. The function of the projecting cornice above the frieze was to throw off rain water. The cella, or chamber of the temple, had a roof of wood and rafters covered with tiles of terracotta or marble. The triangular gable, also called the pediment, formed at either end might contain sculpture.⁶

The Ionic order differs from the Doric in that the Ionic column has a base consisting generally of an upper and lower convex torus separated by a concave trochilus. The shaft is more slender than the Doric and the twenty-four channels do not intersect, but each channel is separated from the other by a narrow, flat surface. The capital has a volute or roll on either side and between these is a pattern, the so-called egg-and-dart ornament. Above the Ionic capital is an entablature, having an architrave which may be divided into two or three slightly projecting bands. Above this the frieze is continuous and may be ornamented above with carved members. The dentils, a row of projecting tooth-like ornaments just below the cornice are characteristic of the Ionic order.⁷

The Acropolis was the chief scene of action during the Golden Age. Here the Parthenon of Athens is considered its highest development. It was between 450 and 430 B. C., under

⁶Harold North Fowler and James Rignall Wheeler, A Handbook of Greek Archaeology, p. 113.

⁷Ibid., p. 126.

the auspices of Pericles, that this edifice was erected upon the isolated rock of the Acropolis. It was the joint work of the architect Ictinus who drew the plans and of the sculptor Phidias who not only adorned it with his masterpieces but also directed the work on it and supervised the execution of it in all its parts.⁸ This temple of the Doric order was built in honor of the goddess Athena Parthenos. The foundation was of poros and all parts above it were of Pentelic marble. There were eight columns at the ends and seventeen on each side. Each pillar, slightly over thirty-four feet in height, was channelled in the Dorian manner, each with twenty grooves.

This temple consisted of four parts: the Pronaos, the east portico, the Opisthodomos or west portico, and the Cella or Hecatompedos which was one hundred feet in length and contained the statue of Athena. Back of the Cella and separated by a wall was the Parthenon proper which was used as a storehouse for the treasures of the goddess. Thus, the temple was divided into two parts: one entrance from the west and the other from the east.⁹

In addition to the Parthenon there was another temple on the Acropolis, the Ionic temple Erechtheum. Its dimensions are approximately seventy-four by thirty-seven.

⁸ Maurice Croiset, Hellenic Civilization, p. 151.

⁹ Evelyn Abbott, Pericles and the Golden Age of Athens, p. 296.

feet. There are three porticoes: one at the eastern end fronted by six Ionic columns, one at the northwest corner with coffered ceiling and ornamented doorway, and the southern Porch of the Maidens. This last porch has six statues of maidens instead of columns to support on their heads the roof of the portico. The Erechtheum was begun in 420 B. C. and not entirely completed until 409 B.C.¹⁰

The only entrance to the Acropolis was at the western end. After the Parthenon was completed Pericles began to build the Propylaea to guard and adorn the entrance. The architect, Meneclès, began the work in 437 B.C. and construction ended in 432 B.C., after the sum of 2012 talents¹¹ (over \$2,000,00) had been expended. The entrance was formed by two porticoes facing east and west and separated by a wall. The western portico had six massive Dorian pillars, three on each side of a broad path, surmounted by a gable. The pillars were approached by steps. On either side of the approach at right angles to left and right were other porticoes, each with three Dorian pillars. The portico on the north was large and formed a picture gallery. On entering the portico there were three Ionic pillars on either side. These pillars supported the decorated marble roof and in there was a wall pierced with five openings. Through the

¹⁰ Ibid., pp. 300-301.

¹¹ Van Hook, op. cit., p. 33.

door, one found an inner portico, a repetition of the outer, but not so deep and without the Ionic pillars on either side.

On the western slope of the Acropolis can be seen on the right the temple of Wingless Victory which honors Athena as goddess of victory. This temple, of about the same date as the Parthenon, is of small proportions. The cella is approximately twelve by fourteen feet and the columns are not quite thirteen and a half feet in height. Its construction is of Pentelic marble of the Ionic order with four columns at the front and four at the back.¹²

Northwest of the Acropolis stands one of the best preserved Greek temples in existence, the Theseum. It is a Doric temple forty-five feet wide and one hundred and four feet long and built almost entirely of Pentelic marble. It has six pillars at either end and has a continuous colonnade on all four sides. Thirteen columns are placed on either side. The date of the temple is uncertain, although it is believed to be a little later than the Parthenon.¹³

Sculpture

The years 480-400 B.C. witnessed many developments in Greek civilization. Likewise, many masterpieces of sculpture

¹²
Abbott, op. cit., p. 302.

¹³
Van Hook, op. cit., p. 28.

were produced. Three of the greatest sculptors of the fifth century B. C. were Myron, Polyclitus, and Phidias.

Myron was famous for his statues of athletes. His most famous work was the statue of the Discus Thrower.

Polyclitus won renown through his bronze statues of athletes. Two of his works are the Doryphorus, representing a youth of massive physique who carries a spear over his left shoulder, the the Diadumenus, a youthful athlete who stands with both arms upraised to bind the fillet of victory about his head.¹⁴

To Phidias Pericles entrusted the general superintendence of all artistic undertakings. The two most famous works of Phidias were the chryselephantine statue of Athena in the Parthenon and the statue of Zeus in the Temple of Zeus in Olympia. Our ideas of the statue of Athena, originally of ivory and gold, must be derived from the copies of the great original. In 1879 a marble statuette was found at Athens which is thought to be a copy. From this statue a fairly accurate description has been made. The goddess is heavily draped in a tunic which is open at the side and stands with her left leg bent a little and slightly pushed to one side. The girdle, whose ends take the form of snakes' heads, is worn outside the doubled-over portion of the garment.

¹⁴

Ibid., p. 52.

The helmet is an elaborate affair with three crests, the central one supported by a sphinx and the others by winged horses. At the left of the goddess is her shield within which coils a serpent. On her extended right hand stands Victory.¹⁵

The sculptures of the Parthenon were more extensive than those of any other Greek temple. They comprised two pediment groups, the whole set of metopes of the exterior frieze, ninety-two in number, and a continuous frieze of bas-relief 522 feet and 10 inches in total length surrounding the cella and its vestibules.

The best preserved metopes of the Parthenon belong to the south side and represent scenes between the Lapiths and the Centaurs. These metopes differ markedly in style from one another and obviously must have been not only executed but also designed by different hands.¹⁶

The Parthenon frieze presents an idealized picture of the procession which wound its way from the market-place to the Acropolis on the occasion of Athena's chief festival. A variety of figures are depicted, such as, youths carrying wine-filled jars, youths on horseback, divinities and heads of chariot horses--all executed in grace and harmony of line.

¹⁵
Tarbell, op. cit., p. 186.

¹⁶
Ibid., p. 191.

The eastern pediment contained a group representing the birth of Athena. The western pediment portrayed the contest between Athena and Poseidon for the land of Attica.¹⁷

The sculptures of the Parthenon seem to have been constructed in about fourteen years. The metopes were worked between 447 and 442 B. C. The frieze was completed in approximately four years; the pediments were not completed before 433 B. C.¹⁸

Other Athenian sculptures ornamented the Theseum, the Temple of Wingless Victory, and the Erechtheum, and all attested to the artistic prowess of Athens.¹⁹

Painting

The art of painting was in as high esteem in Greece as the art of sculpture and if we may believe the testimony of Greek and Roman writers, achieved results as important and as admirable. However, the works of the great painters have utterly perished, and imagination, although guided by ancient descriptions and by such painted designs as have come down to the present,²⁰ can restore them but dimly and doubtfully.

Whereas a certain number of the most beautiful sculptures of the fifth century are preserved for our admiration, the ancient paintings have long since disappeared. It is true

¹⁷Van Hook, op. cit., p. 35.

¹⁸Stobart, op. cit., p. 168.

¹⁹Gardner, op. cit., p. 326.

²⁰Tarbell, op. cit., p. 208.

that a few painted stelae and an abundant series of painted vases contribute to our knowledge of Greek painting, but they give only an imperfect idea of the pictures executed by the great artists of that time.²¹

There was a succession of painters whom antiquity ranked with the great artists. The leaders among them were Micon, Polygnotus, Apollodorus, Zeuxis, and Parrhasius.

The greatest painter of the age was Polygnotus. In Athens he founded a school and in conjunction with his contemporaries and pupils he adorned the Painted Porch at the eastern end of the market-place, the Theseum, and the chamber in the north wing of the Propylaea.²² Polygnotus was the great painter of character or morals and depicted men as they ought to be; he idealized human nature in combination with beauty, grace, and virtue. Painting was chiefly mural and the subjects were for the most part mythological. Aristotle spoke of the idealistic treatment of his subjects which characterized Polygnotus; he said that in contrast to Zeuxis Polygnotus was a skillful delineator of character.²³

Scene-painting for theatrical performances began to attain importance in this era. Agatharchus, a scene-painter who flourished about the middle of the fifth century, wrote a

²¹Croiset, op. cit., p. 154.

²²Abbott, op. cit., p. 305.

²³Fowler, op. cit., p. 534.

treatise which stimulated two philosophers to an investigation of the laws of perspective.²⁴

A significant step in the art of painting was the technical advancement contributed by Apollodorus, a painter of easel pictures. He departed from the old method of coloring in flat tints and introduced the practice of grading colors according to the play of light and shade. Zeuxis availed himself of the innovation of Apollodorus and probably carried it further, whereas Parrhasius' genius is said to have lain in subtlety of line.²⁵

From the products of the humbler craftsmen of the brush, such as the painted vase, can be seen the artistic tendencies of this period. Many of these vases have been discovered by archaeologists and to us today they are valuable because of their painted decorations. They are particularly valuable in view of the inevitable loss of Greek mural and easel paintings. In the fifth century B. C. the principal coloring matter was lustrous black varnish. On the vases the figures appear light upon this dark background. The painter began the process of decoration by tracing with a blunt-pointed instrument in partially hardened clay the preliminary sketch. Next were drawn the outlines with a brush. These outlines were traced not inside but outside of the spaces designed for

²⁴Tarbell, op. cit., p. 278.

²⁵Ibid., p. 279.

the figures. Thus, a red silhouette in the color of the clay was formed.²⁶ The finished product was aptly called the red-figured vase. Although mythological scenes predominated in the decoration, the painters did not neglect the portrayal of scenes of a contemporary character.

Sculpture and painting to the Greeks were not merely a medium of aesthetic pleasure; they were ways of expressing and interpreting national life. To the Greek the primary end of sculpture was to make statues of the gods and heroes.

The fusion of the ideas of the beautiful and the good is the central point in the Greek theory of art.²⁷ Thus, art represented human character and human ideals. This representation of character and ideals is definitely brought out in Greek sculpture which not only represented but also idealized the human form. The excellence of man was the point about which Greek art revolved. This characteristic Greek conception is well illustrated in Plato's "Republic" by the following statement:

We would not have our guardians grow up amid images of moral deformity, as in some noxious pasture, and there browse and feed upon many a baneful herb and flower day by day, little by little, until they silently gather a festering mass of corruption in their own soul. Let our artists rather be those who are gifted to discern the true nature of the beautiful

²⁶ Fowler, op. cit., p. 430.

²⁷ Dickinson, op. cit., p. 203.

and graceful; then will our youth dwell in a land of health, amid fair sights and sounds, and receive the good in everything; and beauty, the affluence of fair works, shall flow into the eye and ear, like a health-giving breeze from a purer region, and insensibly draw the soul from earliest years into likeness and sympathy with the beauty of reason. 28

Art was not a mere means of reproduction, but a transcendency of nature. Characters superior to men, such as God and heroes, were depicted. This fact is proved by the work of architects, sculptors and painters as revealed in the statues of gods and goddesses and the temples. The tendency to idealize in painting is revealed by Aristotle when he wrote "even if it is impossible that men should be such as Zeuxis painted them, yet it is better that he should paint them so; for the example ought to excel that for which it is an example."²⁹

28
Jowett, op. cit., p. 108.

29
Dickinson, op. cit., p. 210.

CHAPTER IV

ATTITUDES OF THE PHILOSOPHERS TOWARD THE INDUSTRIAL ARTS

It is the purpose of this chapter to give the attitudes of the philosophers in regard to the industrial arts. In order that there may be no misunderstanding between the actual conditions existing in the Greek states and the theories of the philosophers, the writer thought it necessary to give those existing conditions, with emphasis being placed on Sparta and Athens, before discussing the attitudes of the philosophers.

In most writings on the nature of the Greek state, a general over-all view is given which sets forth the idea that the same conditions existed throughout ancient Greece, That is far from being accurate. To clear up this misconception we shall examine in more detail the most prominent states, Sparta and Athens, and also the states most opposite in their achievement and aim.

In Sparta was the one extreme of political development of Greece and the one which probably approaches nearest to the characteristic Greek type. The Spartan state was composed of a small body of citizens, the Spartiatae or Spartans proper, encamped in the midst of a hostile population to whom

they allowed no political rights and by whose labor they were supplied with the necessaries of life.¹ The line of distinction between what was known as the citizen class and the productive class was clearly drawn. The citizens could be classified as a band of conquerors ruling over a subject productive class, who were always on the border line of insurrection but were generally kept in order by secret assassinations. As mentioned previously, the production and rearing of children was controlled by the state and such training was given from youth up to equip them for service to the state, with more emphasis being placed on training for the military.

The currency during this time was iron which was very cumbersome, therefore practically eliminating commerce. No citizen was permitted to engage in a mechanical trade, the chief industry being agriculture. In complete accordance with the Greek ideal, it was a society of soldier-citizens, supported by an inferior productive class.²

Plutarch illustrates this idea by the following anecdote:

During one of the wars in which Sparta and her allies were engaged, the allies complained that they, who were the majority of the army, had been forced into a quarrel which concerned nobody but the Spartans. Whereupon, Agesilaus, the Spartan king, devised this expedient to show the allies were not the greater number. He gave orders that all allies, of whatever country, should down promiscuously on one side, and all the

¹
Ibid., p. 101.

²
Ibid., p. 104.

Lacadaemonians on the other. Which being done, he commanded a herald to proclaim that all potters of both divisions should stand out; then all the blacksmiths; then all the masons; next the carpenters; and so he went through all the handicrafts. By this time almost all of the allies were risen, but of the Lacadaemonians not a man, they being by law forbidden to learn any mechanical business; and now Agesilaus laughed and said, 'You see, my friends, how many more soldiers we send out than you do.' ³

This illustration from Plutarch is one of the greatest illustrations on the soldier-citizen society. Plato's ideal republic follows closely this Spartan pattern of society.

The social and political life of the Athenian state was almost entirely opposite to that of the Spartans, especially during the fifth century. Most books which deal with the Athenian state during the fifth century convey to the reader the impression that Athens was an aristocracy. The conception also exists that the elite of Athens led a glorious life of leisure at the exploitation of all the professional men, artists, traders, artisans, and slaves, and the assertion has been made that all types of work were condemned and that the workers were disdained. The citizen is supposed to have done no work. The question may be asked as to why this view is generally held, if erroneous? The reasons are given as follows:

Athenians, like other Greek states, at an early period in its history, in fact, until after Solon and Clisthenes, was, in large measure, oligarchic and

³ Ibid., p. 104.

aristocratic, both politically and socially. It is mistakenly assumed that these early conditions, particularly in social life, continued. Certain Greek states such as Sparta, Thebes, and Crete never experienced democratization. The strictly aristocratic conditions which were permanently characteristic of these states are sometimes thought of as necessarily existing also in Athens. Modern writers have the tendency implicitly to follow Plato and Aristotle as authorities and imagine that actual fifth century Athenian conditions are accurately reflected in the pages of these philosophers, even when the latter are discussing theoretical politics and imaginary and ideal societies. 4

Then what was the economic and social position of Athenian workers of various kinds? As stated, it is generally asserted that all work was degrading and activities for financial gain was condemned, and all producers and workers were branded by a social stigma. There is no adequate proof that such conditions existed, but pronouncements by Plato and Aristotle have confirmed this mistaken notion.⁵ In the "Laws" and also the "Republic", Plato insisted that a gulf should separate the citizen from the mechanic or trader, resting his ideal state upon agriculture and the landed gentry was forbidden to engage in trade.

Aristotle, in his ideal state, separates the population into the ruling class and a subject class consisting of artisans and producers. Socrates had a view quite different from that of either Plato or Aristotle. Socrates loved to visit the shops, to work and converse with the

⁴Van Hook, op. cit., p. 81.

⁵Ibid., p. 90.

craftsmen, and always encouraged them to work. He was reproached by his opponents for teaching that all work was good; actually, he taught that those occupations which did not deprive a man of leisure were good. Plato gives preference above others to the inventors, poets and artists, among which he gives a place to the craftsmen who are able to maintain the liberty of the gods in production and moderation of the wise in acquisition of property.⁶

Aristotle carries still further the antagonistic view toward the crafts. He condemns every occupation which does not come directly from nature. Under natural labor, he includes mining and forestry, but disapproves of all other forms of industry because the wages make the craftsmen dependent on the employers or customers. None of the arts and crafts escape his censure:

The most mechanical are those which most deform the body, the most servile are those which take up the most time, the most degrading are those which require the least virtue, but even the most elevated are both degrading and servile. Whatever he may do, the banausos has in him 'a certain element of slavishness.' If the exercise of a paying profession is a disgrace even to the musician, the pedagogue, and the sophist, still more is this so with the occupations which warp the body and the soul. The man who takes to them is unworthy to count among the citizens, and the worst democracy is one of craftsmen and workers.⁷

The majority of the Athenians were attached to the idea of equality, and the public opinion was favorable to labor.

⁶ Gustave Glotz, Ancient Greece at Work, p. 162.

⁷ Ibid., p. 163.

The Athenian idea on labor is expressed by Thucydides in the words of Pericles:

Among us it is no disgrace to acknowledge your poverty, but more disgraceful to do nothing to escape it. Here the same men are at once concerned with their own affairs and those of the city, and those who have taken to a profession are none the less acquainted with political matters. 8

Seldom had equality been pushed to such an extreme as it was in Athens, especially in politics. Of course the class of slaves existed there as in every other Greek state, but among the free citizens which included people of every rank, no political distinction at all was drawn. They all had the privilege to speak and vote in the great assembly and were eligible for administrative positions of all ranks. Unlike Sparta, the citizenship was extended to every rank and calling:

The poor man jostled the rich, the shopman the aristocrat, in the assembly; cobblers, carpenters, smiths, farmers, merchants, and retail traders met together with the ancient landed gentry, to debate and conclude on national affairs; and it was from such varied elements as these that the lot impartially chose the officials of the law, the revenue, the police, the highways, the markets, and the ports, as well as the jurors at whose mercy stood reputation, fortune and life.⁹

There was a pact of some kind between the trades and the city and by giving part of their time to the city, the city placed at their disposal part of its resources. If it

⁸Ibid., p. 163.

⁹Dickinson, op. cit., p. 113.

was true that the building program of Pericles gave work to all types of craftsmen, it was because the assembly of the people was made up of fullers, cobblers, carpenters, smiths, farmers, retailers. This was the system which the philosophers detested and considered the worst democracy, that of workers. Manufacturers and merchants attained high posts in the state, and in order to make the offices more accessible to the poor, a salary was provided for service. Even people of foreign origin, known as the metics, could acquire citizenship after accumulating wealth. All men were obligated to work and all their trades were creditable. Upon one occasion Socrates exhorted Aristarchos to let his women folk do weaving of articles for sale:

Because these ladies are free women and your relations, do you think that they should do nothing but eat and sleep? Why, does happiness for free men consist in living in idleness rather than in following a useful occupation for which one is qualified?....Who are the wiser, the lazy ones or those who are usefully employed? Who are the more righteous, those who work or those who fold their arms and dream of means of subsistence?¹⁰

The Athenian was not humiliated by having a profession and was not ashamed to speak of it. Tombs of dead men contain inscriptions stating whether the deceased was a goldsmith, actor, teacher, or shepherd. The tools of the blacksmith or shoemaker also were carved in relief. In 401 B.C.

¹⁰
Glutz, op. cit., p. 164.

the metics were honored by the people for fighting for the democracy; the name and profession of each was given without any feeling of vulgarizing the decree. The blending together of the arts and crafts led these democrats to admire the craftsman as much as the artist, but the aristocrats were led to despise the artist as much as the craftsman.

Although the democracy had abolished legal and political distinctions, it did not prevent social distinction which brought about a precedence among the trades. Between one trade and another there existed a certain feeling of superiority. Ill feelings began to exist between the small land owner and the rich business man, the farmer and the merchant. In town, public opinion did not classify important merchants and small shopkeepers in the same class. The distinctions established were for a long time a moral nature. Respectable people were forbidden by Solon to manufacture perfumes. From the fifth century on the heads of factories were of a different class than the ordinary craftsmen. The difference was not in pay because the man who carried the scaffolding was paid the same as the architect or the sculptor. Later in the fifth century a difference was made between the skilled and the unskilled. The skilled worker received almost twice as much pay as the laborer. These differences in pay were clearly related to the consideration in which the various trades were held, and within each trade, the various classes

of workers.¹¹ Soon the citizens lost interest in their work in the fields and industry, and the Athenian tended to become a rentier by turning his industry or shop over to trained slaves. The great attraction seemed to be politics and citizens left their lands or shops to serve in the council. From the study thus far we have dealt more with the actual conditions and privileges of the working man from the standpoint of the Athenian public in general. The attitudes of the philosophers will now be considered.

The subject of the industrial arts training in ancient Greece has received little attention from writers on ancient educational theory and practice. This is mostly due to the inattentiveness of ancient writers, such as Plato and Aristotle, whose works we now have, to the craftsman and lesser tradesman. A conventional attitude toward these crafts was established by these philosophers which maintained itself throughout the history of ancient philosophic literature. This, of course, was the idea that all forms of manual labor and retail trade were banausic. Although Socrates was sometimes favorable to the craftsmen, he did consider it a degrading occupation, as indicated in the following statements:

The so-called banausic arts have a bad name, and quite reasonably they are in ill repute in the city

¹¹

Ibid., p. 166.

states. For they ruin the bodies of those who work at them and those who oversee them. They compel these men to remain seated and to work in gloomy places and even to spend entire days before a fire. While their bodies are being enervated, their souls, too, are becoming much enfeebled. More especially, also, the banausic arts offer men no leisure to devote to their friends or to the state, so that such men become base in relation to their friends and poor defenders of their fatherland. And so in some cities, especially in those which are considered to be strong in war, no citizen is permitted to work in any banausic craft.¹²

The philosophers never placed agriculture in the same class with the trades because agriculture, being an outdoor life fitted them for the military, but the life of a tradesman unfitted them for defense of the state. The philosophic convention as to the "banausic" trades is repeated through centuries and determines the supercilious attitude toward labor even in the works of Cicero.¹³

Aristotle divided occupations into liberal, illiberal, and vulgar:

Any occupation, art or science which makes the body or soul or mind of the freeman less fit for the practice or exercise of virtue is vulgar; wherefore we call these arts vulgar which tend to deform the body and likewise all paid employments, for they absorb and degrade the mind. ¹⁴

Also Aristotle thought there was a conflict between vocations or trades and service to the state.

¹² W. L. Westermann, "Vocational Training in Antiquity," School Review, XXII, 601.

¹³ Ibid., p. 603.

¹⁴ Eby, op. cit., p. 430.

The citizen must not lead the life of a mechanic or tradesman, for such life is ignoble and inimical to virtue. Neither must citizens be husbandmen, since leisure is necessary for both the development of virtue and the performance of political duties. 15

Aristotle denies to the artisan not merely the proper excellence of man, but any excellence of any kind, on the plea that his occupation and status are unnatural, and that he misses even that reflex of human virtue which a slave derives from his intimate connection with his master.

Plato, in talking about philosophy, shows his contempt for the craftsman:

I said, when you think of the puny creatures, who, seeing this land open to them--a land well stocked with fair names and showy titles--like prisoners running out of prison into sanctuary, take a leap out of their trades into philosophy; those who do so being probably the cleverest hands at their own miserable crafts? For, although philosophy be in this evil case, still there remains a dignity about her which is not to be found in the arts. And many are thus attracted by her whose natures are imperfect and whose souls are maimed and disfigured by their meannesses, as their bodies are by their trades and crafts. Is not this unavoidable? 16

Although Plato belittled the crafts as unfit for citizen participation, he did not fail to realize the necessity of training in these banausic arts.

According to my view, he who would be good at any thing must practice that thing from his youth upwards,

¹⁵ Ibid., p. 431.

¹⁶
Jowett, op. cit., p. 241.

both in sport and in earnest, in the particular way which the work requires; for example, he who is to be a good builder should play at building children's houses; those who have the care of their education should provide them when young with mimic tools, and they should learn beforehand the knowledge which they will afterward require for their art. For example, the future carpenter should learn to measure or apply the line in play. 17

Of course, this type of training was not to be accomplished in the schools, but under the supervision of the parent or other craftsmen. It was not possible for a person to receive training in crafts and also in a liberal education. Plato even recommended that a person should not try to acquire skill in more than one of the crafts.

Now of artisans let the regulations be as follows: In the first place, let no native or servant of a native be occupied in the handicraft arts; for a citizen who is to make and preserve the public order of the state has an art which requires much study and many kinds of knowledge, and does not admit of being made a secondary occupation; and hardly any human being is capable of pursuing two professions or two arts rightly, or of practicing one art himself and superintending some one else who is practicing another. Let this then be our first principle in the state; no one who is a smith shall also be a carpenter, and if he be a carpenter, he shall not superintend the smith's art rather than his own. 18

As can be seen by the above quotation, it was impossible to acquire any type of trade-training in the schools, but only through the apprenticeship method,

17

Benjamin Jowett, The Works of Plato, Book I, The Laws, p. 401.

18

Benjamin Jowett, The Best Known Works of Plato, Book I, The Laws, pp. 846-847.

usually from father to son. Plato did not consider this type of training as any part of education, as he plainly states in the following:

That education is virtue....which makes a man eagerly pursue the ideal perfection of citizenship, and teaches him how rightly to rule and obey...this is the only training which upon our view would be characterized as education; that other sort of training which aims at the acquisition of wealth or bodily strength, or mere cleverness apart from intelligence and justice, is mean and illiberal and is not worthy to be called education at all. 19

In his ideal republic Plato further condemns the craftsman as a class unfitted for scientific pursuits or even for the military.

In the ideal city it is true a life of labor can still be honorable. But in real life it is almost impossible for the craftsman to master all the wild beast element which he contains within himself. The body and soul of the craftsman bear the stamp of his gross life, and since the craftsman cannot be a good man, it is necessary that the good man should lead the craftsman. 20

It seems that Solon and Plato differed considerably as to whether or not the craftsman was fit for citizenship. Solon expressed his desire to help the craftsmen by granting them political existence and giving them representation in the assemblies and established a law that compelled fathers

19

Jowett, The Works of Plato, Book I, The Laws, p. 402.

20

Glötz, op. cit., p. 162.

to teach their sons a useful trade or else forfeit all
²¹
rights to support in old age.

Plato did not believe it possible for the craftsman to succeed even though he might become rich at some time during his career. He gives the following example to substantiate his belief:

When a potter becomes rich he will fail to take the same pains with his art. He will grow more and more indolent and careless and as a result he becomes a poor potter. But on the other hand if he has no money and cannot provide himself with the tools or instruments, he will not work equally well himself nor will he teach his sons or apprentices to work equally well. Then under the influence either of poverty or of wealth, workmen and their works are equally liable to degenerate. ²²

Aristotle's attitude toward the trades is probably the most contemptible of any of the philosophers. As quoted previously, he belittled every type of craft or trade that was not derived directly from nature and he believed that the craftsman could never be a virtuous person. Therefore, he was unfit to be a citizen. Plato and Aristotle were unlike Socrates in that Socrates, although critical of these occupations which deprived a man of leisure, was a friend of the workmen and loved to visit the shops and discuss the various crafts, often encouraging workmen to work harder.

²¹

John D. Rowlette, "A Study of the Craftsman of Ancient and Medieval Civilization," Unpublished M.S. Thesis, Department of Industrial Arts, North Texas State College, 1950, p. 32.

²²Jowett, The Works of Plato, Book IV, The Republic, pp. 135-136.

How did Plato and Aristotle arrive at such an attitude toward the crafts? It was probably because they were both from very wealthy aristocratic families and were brought up from childhood in an atmosphere of contempt for the working class. Or, this attitude could have been assumed in an attempt to remedy the situation which caused the decline of the state. Regardless of the reasons for such an attitude, we know that it did exist and maintained itself throughout ancient philosophical literature. Although these attitudes existed in the writings and minds of the philosophers, they did not exist in the mind of the average Athenian.

The picture which the literature of the Greeks enables us to form of their methods of industrial education is fragmentary and obscure; however, we do know that from all accounts, no type of trade-training was offered in the schools, that the only type of trade education was through apprenticeship training. This was probably due to the controlling influence of the aristocratic philosophers and their wealthy, educated followers over the school system.

It might be well to consider other causes of the Greek attitude toward industry. First, an aristocratic attitude was natural to a well-born Greek, especially if he were a landowner. Second, the influence of the Homeric poems which eliminated the commoner by name and contained no praise for the deeds of the masses tended to encourage such an attitude.

Third, their industrial arts were closely connected with slavery and could not overcome this stigma. From such causes the economic life was held in low esteem and utilitarian education was thus restricted. This effect would probably have been a temporary one had it not received justification from the pens of Plato and Aristotle.

Until the sixteenth century, at least, the theory of Plato was not seriously challenged. Its influence upon Roman thought is evident in the treatise of Cicero. Medieval and even modern grammar schools, gymnasia, and public schools of old foundation have clung steadfastly to the separation of culture from usefulness. It was almost in vain that Locke suggested that a gentleman's son might learn a trade, such as gardening or joinery. Even the sciences, because of their economic utility, have been strenuously resisted, and relegated to a more or less secondary place in England's oldest schools. Newman's Idea of a University makes little or no advance upon the position of Plato in its exclusion of knowledge not pursued entirely for its own sake.

In England during the eighteenth century, no occupation except that of a landowner was regarded as noble. All paid occupations, including that of a teacher, were stigmatized as illiberal. The objection of the Greeks to utilitarian education is profoundly important, in that it became traditional and influenced the whole course of subsequent thought to the present day. 23.

Sir William Osler, a Canadian scientist of this century, explains the influence of Greek thought in the following statement:

As true today as in the fifth century B. C., the name Hellas stands no longer for the name of a race, but as the name of knowledge. The deep rooting of our

civilization is in the soil of Greece--much of our dogmatic religion, practically all the philosophies, the models of our literature, the ideals of our democratic freedom, the fine and the technical arts, the fundamentals of science. 24

From the above quotation it seems that the attitudes of the Greeks did have some influence on present-day attitudes, although the Greek philosophical theory was unsound.

The industrial arts have placed culture under an obligation which is still but imperfectly acknowledged. Industry has liberated vast numbers of people for a life of study or of cultured leisure. Industry has established great educational endowments and foundations. Success in industry is directly, rather than inversely, proportional to the philosophic conquest of truth. 25

24
Van Hook, op. cit., p. 294.

25
Cole, op. cit., p. 17.

CHAPTER V

SUMMARY

Today, the last half of the twentieth century, we find industrial arts being taught as a part of the general education in many accredited high schools in the United States and modern educators have recognized its value and are making it an integral part of the elementary and junior high school curriculum.

In contrast, we are told by Aristotle in his "Politica" that education of Greece during the fourth century consisted of reading, writing, gymnastics, music, and drawing. In order to better understand the lack of any type of mechanical arts in the schools of the Hellenic states, one must gain some insight into the general educational philosophy of the Greeks.

In theory, as well as in practice, Hellenic education aimed at producing the best possible citizen. To produce a young man who would be charming in person and graceful in manners was the aim of the Greeks.

Civic duty or service to the state was the outstanding feature of Greek training. Next to duty to the state, good manners and morals were the chief goals of Athenian training. Reverence for the gods, respect for parents, politeness and

good form also were included. In this connection it must be emphasized that a small upper class, not the whole state, was exposed to this philosophy. Since the Greek conception of a citizen was an aristocrat, his excellence was thought to devote the greater portion of his energy and time to public activity; hence, the existence of such a class necessitated the existence of a class of producers to support them. This class did not have the necessary leisure to devote to public business nor did it have the opportunity to acquire mental and physical qualities to transact it worthily. For this reason the class of producers was regarded as inferior. In some states the producers had no political rights at all and even in Athens, though they were admitted to citizenship, they never lost the stigma of social inferiority.

The philosophers from the time of Thales to the time of Socrates, dealt mostly with the nature of things and the universe. Education for the masses received little attention. Although Socrates was a very poor, grotesque individual, he had a personality to be admired. Socrates had definite views of the curriculum; he believed that gymnastics was a necessity for the sake of health and mental and military efficiency. The development of personality was to be accomplished through poetry, dancing and music. He had no place for theology in his curriculum although he believed that practical religion played a great part in the

growth of youth. Only subjects that had to do with practical living found favor with Socrates. The necessary knowledge was that type which would enable man to handle his own affairs, run the state, produce goods in an efficient manner, and live a just, temperate and happy life.

Socrates had a very unique method of teaching; he conducted investigations instead of reaching conclusions, and always tried to challenge each student to think consistently for himself.

Plato had a background quite different from that of Socrates in that he was from a very wealthy, aristocratic family and had all the advantages of the best education of the time. In 407 B. C., after having studied the Heraclitic philosophy, he met Socrates and this event determined the future course of his life. Plato did not propound a definite system but gave out some ideas and ideals and left the individual to form his own conclusions. Plato had two motives: first, he wished to continue Socrates' task at the point where Socrates had to leave it, to consolidate his master's teaching and defend it against inevitable questioning. His second motive was to defend the idea of the city-state as a political, economic and social unit.

In two of Plato's greatest works, the "Republic" and the "Laws", education seems to be the foremost thought in his mind. He valued education so highly that it played a

major role in everything he thought and wrote. He regarded education as the first and fairest thing that the best of men can ever have. He believed there were two kinds of education: one for preparation in practical affairs which was to be received by the trade classes and the other was education for devoted service to the state. In his "Laws" he explained that the first type of education was really not education at all, that it was mean and illiberal and was apart from intelligence. The only real education was education in virtue which gives training in how to rule and obey.

Aristotle was also of an aristocratic family, his father being an author of medical works and in good standing with the king of Macedonia. The scientific and medical atmosphere in which he was surrounded no doubt influenced him in habits of accuracy and exactness. In 367 B. C. Aristotle entered the school of Plato where he remained for twenty years, until Plato's death. Aristotle accepted the Platonic tradition until the death of Plato, but during the last twenty-five years of his life he followed a distinct method of his own. He deals with the problems of education in Books VII and VIII of his "Politics." He believed that a definite educational policy should be followed for the citizens in order to insure welfare and security for the state. Aristotle was in agreement with Plato on the definition of education as the art of making children love what

they ought to love and hate what they ought to hate. He also believed in education to prepare the individual for service to the state and also excluded the trade classes from citizenship. He held that the aim of education should be the same for the state as for human life in general and should include the following: health, fame and honor as a citizen, wise use of leisure, good moral character, and the development of the intellectual faculties. This view of the aim of education might be compared with the seven-point program of the Commission on Reorganization of Secondary Education of 1918. The Commission listed them as health, command of the fundamental processes, worthy home membership, vocation, citizenship, worthy use of leisure time, and ethical character. There were only three important differences: the Commission would give everyone an education, whereas Aristotle would educate only the citizens; the Commission had a broad view of vocations, and Aristotle believed that the only vocation was service to the state. The Commission did not place as much emphasis upon intellectual culture as did Aristotle.

In the Golden Age Athens stands out as a shining example of artistic achievement in the fields of architecture, sculpture, and painting. This magnificence was not a result of centuries of toil; it was the work of approximately fifty years. Indeed, Athens was a workshop. Every kind of craftsman

found employment and each, in his own way, contributed to the fulfillment of the plans of Ictinus, Phidias, Menecles, Myron, Polyclitus, Polygnotus, Micon, Apollodores, Zeuxis, Parrhasius, and others. All works of art further exemplified the attitude of the excellence of man, the idea of the beautiful and the good, and expressions and interpretations of national life. Thus, idealization seemed to predominate.

The earlier philosophers did not reflect their attitudes toward the industrial arts. Up until the time of Socrates the philosophers seemed to steer clear of this question, but Socrates, Plato, and Aristotle gave their opinions freely.

Unlike Plato and Aristotle, Socrates was actually a friend of the craftsman and often visited the shops to converse with the workers. He often encouraged them to work harder to prevent poverty, and was reproached by his opponents for teaching that all work was good. Actually what he taught was that those occupations which did not deprive a man of leisure were good. Upon one occasion Socrates exhorted Aristarchos to let his women folk do weaving for sale.

In the "Laws" and also in the "Republic," Plato insisted that a gulf should separate the citizen from the mechanic or trader, resting his ideal state upon agriculture and the landed gentry which was forbidden to engage in trade.

He also held that it was impossible for the craftsman to become a citizen. Although Plato belittled the crafts as unfit for citizen participation, he did not fail to realize the necessity of training in these banausic arts in order to be proficient.

Aristotle carries still further the antagonistic view toward the crafts. He condemns every occupation which is not derived directly from nature. None of the crafts escaped his censure. He divided the occupations into liberal, illiberal, and vulgar--the crafts being classified as the latter.

The philosophers never placed agriculture in the same class and with the same ridicule as the trades because the farmer while pursuing agriculture led an out-door life which also fitted him for the military; whereas, the life of the tradesman unfitted him for the defense of the state. The philosophic convention as to the "banausic" trades is repeated through centuries and determines the supercilious attitude toward labor, even in the works of Cicero.

Conclusions

1. There was no type of trade-training taught in the schools of ancient Greece. Apprenticeship training was the only type provided for the arts and crafts.

2. The theory of Plato was not seriously challenged until the sixteenth century, and even modern grammar schools,

and public schools of old foundation have clung to the separation of culture from usefulness.

3. Our present liberal arts colleges are patterned after the ideas of Plato and Aristotle to a great extent.

4. It seems that the struggle over the past fifty years to implement the industrial arts into the curriculum as a part of the general education program was probably due to these ancient philosophic attitudes.

5. The industrial arts have placed culture under an obligation which is still but imperfectly acknowledged. Industry has been responsible for liberation of vast numbers of people for a life of study through its educational endowments and foundations.

Recommendation

It would be well for a similar study to be made to determine the attitudes of present-day philosophers and leading educators toward the industrial arts.

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