



Discipline Courses-I

Semester-II

Paper III: Mycology and Phytopathology

Unit-II

Lesson: Zygomycota

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RELIGION, SCIENCE, TECHNOLOGY, ART AND LITERATURE IN CLASSICAL GREECE (480-322 BC)

The period from 488-322 BC has been referred to as the Classical period in Greek history. Regarded as the founders of world civilization, the Greeks were the first to undertake free enquiry, theoretical research, and rational knowledge and to produce forms of art work which are celebrated till this day. It was a period which witnessed the developments in the field of various branches of sciences and humanities. It is also for this reason that we witness the attempts to re-invoke this chapter of past by subsequent periods in history such as the Renaissance revival of early modern Europe and the French Revolution of 1789-1799. With the establishment of democracy in Athens and the emergence of polis, wealthy individuals also emerged on the scene while state and the nobles continued to be the main patrons of art. Some of the fields in which this period witnessed exemplary achievements for its time, include religion, science, technology, literature, art and sculpture, to be discussed in that order.

GREEK RELIGION:

There are two sources of our knowledge and understanding the religion of the ancient Greeks. Firstly, information is collected from Greek mythology with tales of gods and heroes who has come down to us from the past. Secondly, religious literature and monuments also shed light on religious practices and ritual acts. They are a reflection of the piety of the people which seems to be more closely reflected to the performance of rite and rituals rather than religious faith.



Preparing Bulls for Sacrifice

http://atheism.about.com/library/FAQs/religion/blgrk_rituals08.htm

Greek religion was not dogmatic and was not contained in any Holy Book either. In other words, it was not a religion revealed to the Greeks. Instead, Greek gods were beings endowed with special powers and were hence believed to play a variety of important roles such as the guardian of property *ktesios*, of lightning *Ketabaetes*, protector of the household *Herkeios* etc... all together constituting the Olympian pantheon. The defining feature of this divinity was the immortality of the gods.

The gods were believed to be an embodiment of all the important functions of the daily lives of the Greeks, public as well as private. Religion in the private domain centered on the various landmarks in the life of the citizen such as birth, transition from childhood to adolescence, marriage and death. All these occasions were marked by distinct ceremonies, rites, sacrifice and offerings to the gods. An important focus of these ceremonies was the domestic hearth and the associated goddess Hestia. The newborns were carried around the hearth and consecrated to Hestia. Even the marriage rites conducted the bride to the hearth in the bridegroom's parent's house. The funerary rites of domestic religion were equally elaborate: the body was either buried or burned and offerings were left at the tomb or the

vase containing ashes as also the sacrifices and libations which were left here.



Council of the Gods on Mt. Olympus

http://atheism.about.com/library/FAQs/religion/blgrk_rituals08.htm

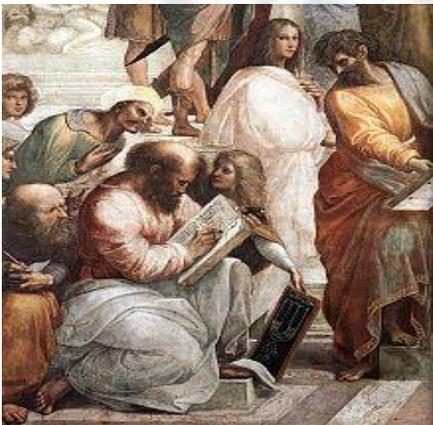
In civic life also, Greek religion played an important role. Every city had a patron divinity of its own that watched over and guarded every manifestation of city life. Infact, in Athens, all popular assemblies and other official functions were preceded by a sacrifice and all officials of the state had to take a solemn oath to the gods upon taking office. Interestingly, in the Greek Classical society, there was no distinct clergy to perform the sacerdotal functions; religious duties were as a matter of fact, part of the official agenda of the city magistrates and other officials. In principle, all citizens could perform these functions. Only a few rites, bound up with particular cults were reserved for certain sacerdotal families. Furthermore, it was the civic institutions which prosecuted all offences against religion and impiety.

Undoubtedly then, religion in Classical Greece was closely bound up with the many manifestations of social and political life. It should however be kept in mind that most of our information for this period comes from the remains, both literary and archaeological, of the city-state of Athens in which 120 days of the calendar were meant for

religious festivities. The descriptions of these religious activities also tell us of the unity amongst the citizens who participated in these civic festivities including processions, sacrifices and banquets.

PHILOSOPHY:

Origins of Greek philosophy, one of their greatest achievements, lay in the religious and mythical ways of thinking. It had begun as cosmology and a study of the universe. However, very soon, the Greek philosophical tradition became diverse and pluralist, breaking away from the fetters of mythical thought and marked by the victory of reason over irrationality. As mentioned earlier, Greek religion had lacked dogma and any systematic ideology and it has been suggested that this emptiness of religion gave philosophical speculation unusual freedom to maneuver. Scholars have also opined that empirical research suggests that it was the upheavals bound up with the crisis in the aristocratic society; the consequence of the establishment of new political order based on rule of law and to which all members of the *polis* were subjected to in equal measure. In other words, as **Claude Mosse** has suggested, "*philosophy was the daughter of the city*" wherein the intellectual and political domains no more remained distinct spheres.

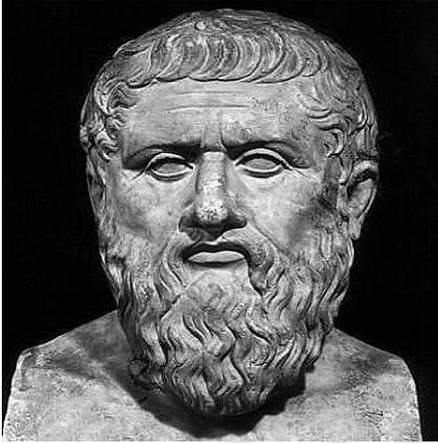


The Pythagoras

<http://en.wikipedia.org/wiki/Pythagoras>

The philosophers preferred to write in prose, suggested by the fragmentary pieces of literature that have come down to us. With time, their studies progressed from that of nature to a wider reality and to man's inner life. Athens came to embody the intellectual as well as the political center of Greek life. It was the first city to experiment with and introduce democracy, however crude in form. It was against this background that Greek philosophy increasingly shifted from concerns of the cosmos to those over the city and its inhabitants.

An important body of thinkers within the intellectual thinkers of Classical Greece was the Sophists who became the idols for many. Among many of their contributions, perhaps the most important remains their political justification for democracy by suggesting that Zeus had given equal powers to all men to express what is just. In this way, the Sophists contributed to the growth of rational thought and critical examination of the accepted truths. Nevertheless, there remains an important difference between the Sophists and the other great philosopher of the age- Socrates. The Sophists believed in the relativity of truth and justice unlike Socrates who saw them as being universal values. Socrates himself left no written works and most of the information we have on him comes from the writings of his two pupils Xenophon and Plato.



The Plato

<http://www.ourcivilisation.com/smartboard/shop/warnerr/plato.htm>

Plato's work such as the Republic and others is essentially in dialogue form and the recurrent themes found in his works are that of Goodness and Justice in man and the city.

He was writing at a time when conflicts between the rich and the poor city-states were tearing each other apart. To that end, he suggested in The Republic that the decision making powers should be in the hands of a few men, on the basis of certain criteria. In his *Laws*, he also proposes an equal distribution of property to ensure social equilibrium and social justice. He further suggested the extension of physical, musical and philosophical education to all citizens of the city-states, with slight differences in the treatment of men and women which he justified on the grounds of natural inferiority of women to men.

It is clear from this brief overview of Plato's ideas that the intellectual thought of this time was highly evolved and was increasingly concerning itself with ideas relevant to the society and human existence. An important pupil of Plato who went on to give some of the most defining features of philosophy was Aristotle. His knowledge was encyclopedic and covered a vast field including philosophy, biology,

physics, mathematics and other social sciences. Infact, Aristotle is today regarded as the father of political science. His theory of knowledge was based on the idea that science can study only what cannot be known otherwise and it is his emphasis on communal research, observation and analysis that came to exert an enormous influence on his contemporaries as well as on the present.

SCIENCE AND TECHNOLOGY:

An important field to which Aristotle made immense contributions was that of science and technology. Science was not an independently developed field before 4th BC. It preceded oriental technology and differed in that it held up the analysis of supernatural forces for inspection. It was suggested that development came from the formation of city-states which allowed for the participation of all those composing it. The first Greek scientists came from Miletus, a flourishing city in Anatolia where theories on the origins and nature of world were elaborated. The foundations for mathematical observation were laid in southern Italy. The Pythagoreans advocated the centrality of numbers in all things that existed around us. An important and interesting theory put forward by Democritus, at the beginning of 5th BC, was the atomic theory which suggested that all natural phenomena were a result of combination of atoms moving around in a vacuum.



Ancient Greek Analog

Computer

<http://gajitz.com/gadgets-of-gears-gone-by-ancient-greek-analog-computer/>

From the mid 5th BC we also come across mention of important scientists such as Anaxagoras. Plato also made important contributions to geometry which in fact became an important concern for his school the Academy. He also tried to present the philosophy of science based on mathematical abstractions. Further, Plato had suggested that all natural substances were composed of four simple bodies: earth, air, fire and water.

With respect to medicine and astronomy, a large body of literature has been produced by Hippocrates and others. **Claude Mosse** opines that apart from the diversity of these works, what is striking is the attempt to present disease as a natural phenomenon and to base the appropriate therapy on a detailed and systematic study of case histories. Interestingly, in some writings, health has been identified

with "isonomic" equilibrium while disease was identified with a "monarchic" disequilibrium; politics thus serving as a model for science.

Observational astronomy at this time was also acquiring shape but it continued to remain limited in nature. Here too, interestingly, the Greeks endeavored to apply mathematical models to the study of natural phenomenon. Aristotle, the philosopher, was also one of the most important scientists in Greek history. To him, nature was not arbitrary but in fact functioned according to a set of rules and the business of scientists was to get these rules known. He endorsed the theory that matter was made up of four basic materials: earth, air, water and fire and the four fundamental qualities of natural beings were: hot, cold, dry and wet. His theories emphasized the need for scientists to concern themselves with the universal and not the particular and to undertake a detailed investigation in natural sciences as well as the science of governing the polis.

Consequently then, it can be said that Greek science was not as divorced from observation and practical life as has been suggested by many historians. The Hellenistic period of the following centuries took forward the foundations of science and technology lay in the Classical age.

LITERATURE AND LANGUAGE:

Like philosophy, the development of new forms of lyric poetry also emerged with the struggle for political and social power between the aristocrats and masses. Lyric poetry, unlike the anonymous epic poems, became a vehicle for personal feelings, allowing for the first biographies to be sketched out. It has been suggested that the Greeks

had a strong tradition of communicating literature through performance and this preference for talking and listening has to be kept in mind while considering their literature. So lyric poetry was normally recited and performed on ceremonial occasions such as wedding, military triumph etc...



Epic of Digenis Akritas

http://en.wikipedia.org/wiki/Greek_literature

In the Classical age, poems with social, religious and high moral themes were becoming very popular; the communal and emotional themes now occupied the center stage in Greek public life, especially in the city-state of Athens. Not surprisingly, as in other aspects of Classical Greek society, in literature also, one witnesses the employment of political ideas.

Prose writing was an important component of Greek literature which developed over time. Herodotus is the first writer with whom elegant prose writing can be associated. Infact this period bears witness to the production of a great deal of literary prose dedicated to politics, science, philosophy, law and technology. As **M.I Finley** rightly puts it, history had fallen victim to the greatest curse of post 5th BC Greece culture, Rhetoric. The manner in which an idea was to be expressed

became more important than the idea itself. Herodotus is also credited with writing the first historiographies and is therefore regarded as the father of History. He wrote the history of Persia and his writings suggest that he was not a neutral 'historian' writer. He embraced the central idea of the Athenian propaganda which supported the supremacy of the Athenian Empire because of its merits in the struggle against the 'barbarians'.

'True' oratory was practiced in the public sphere, the popular assemblies and the courts formed the theatre where this oratory-political and judiciary- took place. The people who listened to these orators such as Demosthenes, Lycurgus were those who participated in the life of the theatre i.e. the citizens.

GREEK ALPHABET

Name	Sign	Name	Sign
Alpha	A α	Nu	N ν
Beta	B β	Xi	Ξ ξ
Gamma	Γ γ	Omicron	O ο
Delta	Δ δ	Pi	Π π
Epsilon	E ε	Rho	Ρ ρ
Zeta	Z ζ	Sigma	Σ (C) σ ζ
Eta	H η	Tau	T τ
Theta	Θ θ	Upsilon	Υ υ
Iota	I ι	Phi	Φ φ
Kappa	K κ	Chi	Χ χ
Lambda	Λ λ	Psi	Ψ ψ
Mu	M μ	Omega	Ω ω

Language in Ancient

Greece

<http://www.crystalinks.com/greeklanguage.html>

Another important development of the Classical Greeks was in the field of epics, especially the Homeric epics- Iliad and Odyssey, which capture the heritage of the Mycenaean civilization, saving it from the

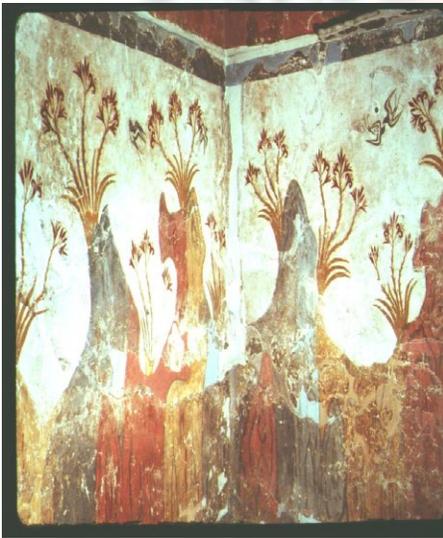
oblivion it became prone to, after the fateful migration of the Dorian's. They were some of the most important books of Greek literary canon; while children learned to read from them, people learned geography and mythology from them. After Homer, tragedy was soon given the place of honor, over all other forms of poetry. **Luciano Canfora** opines that in most probability, tragedy was linked to the religion of the state, right from the start. **A. Hauser** on the other hand regards it as the characteristic creation of the Athenian democracy in which the conflict of the inner structure is clearly noticeable. The tragedy treated questions of politics and centered directly on the most important issue at hand.

Festivals were an important of Athenian life and tragedy continued to maintain its vital association with these festivals. The audience sat in rising tiers in open air theaters, looking down upon the stage. The chorus, which had provided much entertainment to the rich families, was now gradually and persistently reduced to being merely a musical interlude. The cost of production was borne by the public treasury and wealthy individuals.

Just as the tragedy, Classical comedy also continued to be Athenian monopoly. It was fundamentally a-religious in nature. Old comedy was a phenomenon that lasted for about half of a century. It was quieter in tone, less pungent and hard hitting and on the whole, less immediate in its social and political content. By the middle of 4th BC, it transformed into an altogether different form. It abandoned current affairs, political ideas and broad social issues. New comedy, as it came to be called became a comedy of manners, restricted to fictitious characters, retaining its popularity over the old comedy.

GREEK ARTS: PAINTINGS, SCULPTURE AND ARCHITECTURE:

Our understanding of Greek painting and art is drawn from the information in literature and poetry since all color applied on the statues, paintings and pottery has worn away with time. Paintings on pottery were purely for decorative purposes and were primarily of two types – black figured pottery and red figured pottery, based on ingenious baking techniques that the Greeks had devised at this time. Development of painting was a gradual process, as the painter acquired the skills to use lights and shades and create the illusion of three dimensions.



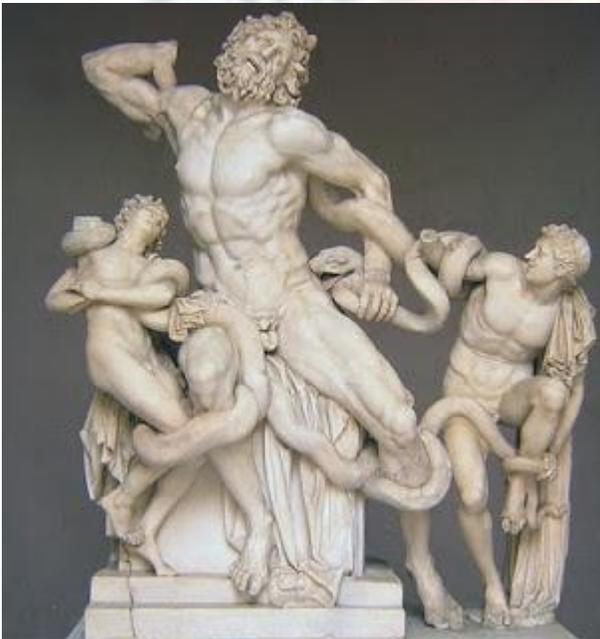
A wall painting of plants from Thera

1600 BC

<http://www.historyforkids.org/learn/greeks/art/painting/greekpainting.htm>

Sculpture is a very important aspect of Greek arts. It aimed at representing the 'Ideal', through the application of mathematical proportions. The common styles of sculpture, discerned in this period, are the naked standing male or the *kuros* and the standing draped female, *kore*. Unlike the Egyptian sculpture, these works of art are free standing and not attached to blocks of stone. The statues of athletes are idealized and it seems that their sole purpose was the preservation of the memory of victories and makes propaganda for the games.

Sculpture for the purpose of religion was also very important; in fact the first patron of sculpture was religion. Statues were required in temples, as thanksgiving for success in business or athletics or for other purposes. As wealth increased and public buildings became more important, they also came to be embellished with sculptures, which were now increasingly being made using marble and not plain stone anymore. The most important achievement of the Greeks however, was the creation of free standing sculpture which denoted fluidity and freedom of the Classical age.



Greek Art

<http://fashionarttrend.blogspot.in/2011/09/greek-art.html>

Architecture:

The architecture was also an important form of public art which was closely linked to the community i.e. it was closely meshed in with daily life and not set apart for occasional leisure time or for the special enjoyment of the rich collectors and aesthetes. The most important form of architecture was the temple and later the theatre. These monuments were built in harmony with nature including the following

features, broadly speaking: 1) combination of solid walls at the rear and sides, 2) rows of columns, open and regularly spaced along the front, 3) rectangular layout, 4) roofing over of the whole structure and 5) the abundance of sculpture in the bays.



**Akroterion of the Grave Monument of
Timotheos and Nikon 350-325 BC**

<http://www.metmuseum.org/toah/works-of-art/07.286.107>

The temples were normally a rectangular structure with a roofed center in which the statue of the divinity was placed. Temples were not places of worship but to be primarily looked at from the outside. They had three main architectural divisions- the stepped platform, the columns and the entablature. Barring exceptions, the temples were chiefly distinguished by orders- the Doric, the Ionic and the Corinthian. The Doric was more square and mathematical in its impact, marked by vertical grooves called flutes; the Ionic style of pillars were lighter and marked by elaborate decorations on the base and capitals; the Corinthian pillars were a more ornate off-shoot of the Ionic.

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Zygomycota

