CONCEPT OF ECOLOGY:
PAST AND PRESENT
ANCIENT CONCEPT
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2.1: ANCIENT CONCEPT

In Indian writings, right from the Vedas, epics and puraṇas etc. we find many references to ecological thought. Many an ancient writer in Sanskrit described the importance of various natural elements like, Vāyu (gasses and air), Jala (water), desa (topography) and time in the regulation of life. Similarly, the concept of Pañcatattva (five elements) namely-earth, water, fire, air and sky reflect the idea of circulation of materials.

If we think of the origin of the man's awareness about ecology, we should go back to the ancient literature where we get ample references to the same. Ever since the time of the RV, we find that man has established very close relationships with various natural elements. He has treated himself as just one part, small part of the whole cosmos.

If we go through various types of literature, that was produced here in ancient times, we find that man is never treated as the suprime-being. Even if human being is blessed with very many faculties of intellect, still he is aware of the fact that his well-being is totally dependent upon the natural elements that surround him.
If we look into the early civilization and their attitudes towards environment, then we can get some idea about the past concept of ecology. The attitude of the people of Mesopotamia toward nature, from the early Summerian writings down through the Akkadian and Assyrian literature, is marked by a strong feeling of battle. Nature herself was represented in Mesopotamia mythology as monstrous chaos, and it was only by the constant labours of people and their patron gods that chaos could overcome and order established. The order of heaven was quite apparent to the Mesopotamians, who developed both astrology and astronomy to a high degree and noticed that the motions of the Moon, and the Sun, Stars and Planets are constant and predictable.¹

If we look at the Egyptian civilization, we find the certain amount of similar feeling to the Indian civilization. Egyptian attitudes toward nature reflect the dependable periodicity of their natural environment. Their gods were deities of nature, intimately sharing the characteristics of the animals and plants which were their attributes. Ra, the sun god, was worshipped beyond the others. His movements were regular and all nature responded to them. When he

rose, day came and life flourished and when he set, the Egyptians associated the failing light with death, but a new dawn inevitably followed. The Egyptian calculated the solar year of 365 days and noticed that the Nile’s flood depended on the sun’s cycle. All Egyptian gods represented various aspects of the natural world, and most of them were conceived as friendly to mankind.  

So far as the Persian civilization is concerned, we may observe that the Persian religion based upon an Indo-european pantheon of nature deities, developed a strong sense of reverence for the elements of the natural world. Earth, water and especially fire were regarded as sacred in themselves, and much of Persian religion was concerned with the need to keep them free from ritual pollution. The Persians had many rules concerning cleanliness and those who broke them could be severely punished. Water was to be kept in a state of pristine purity, whether it was flowing or standing in a lake or well. Sewage of any sort, whether urine or excrement, or even hair or fingernail prings, was not permitted to enter water, although water might itself be used as an agent of purification. The worst sort of pollution in Persian eyes resulted from contact with dead bodies of human beings or animals, and any one seeing one of these in the water was duty bound to

remove it and perform the necessary purifications. The earth was also sacred, and burinal of dead bodies was considered the worst possible violation of the will of the gods. Since fire, an object of great veneration, could not be polluted either, bodies were simply exposed in rocky places or in special towers to be eaten by "unclean animals" such as wolves and vultures.

Along with the elements, the Persians worshipped sacred plants, animals, and stars etc. Certain human activities, such as agriculture, were regarded as acts of reverence to the earth which made the earth happy and fruitful. Domestic animals were given reverent care. 3

Another ancient civilization, namely: the Greek civilization also is to be seen in breif that reflects the Greek attitudes toward nature. The Greeks were the worshippers of 3 nature. J.D.Hughes observes: "perhaps the most important Greek attitude towards nature was a certain curiosity which combined with a willingness to depend on reason, led to the first strides of science." 4

The Greek writer Herodotus, whose interest in natural history was wide-ranging and who some times ---

repeated fantastic stories about animals and plants without necessarily believing them, also pondered the problem of the relationship between predators and prey. He noticed that timid animals which are eaten by others produce young in great abundance, while the predators bring forth only a few offspring. Thus, a balance of numbers is achieved. This idea, now recognised as a basic ecological principle, was repeated by Plato, who put it into the mouth of Protagoras in his dialogue of the same name. Protagoras is made to say that the gods have given fur, claws, wings, and the like to animals, so as to compensate them with defenses against one another. This is an early statement of the idea of the balance of species.5

The prominent Greek writer Aristotle's teaching about animals are the foundation of much of western thinking about the relationship of mankind to the whole natural environment. His reasoning was teleological. All things have a purpose or end for which they are formed. When a thing fulfills its end, it is useful and beautiful. Therefore, no animal lacks beauty, because all animals are formed for their proper ends. And what is their end? Aristotle says it is the service of mankind. All animals, and indeed all other -

things, exist for human good. Therefore, they are fit instruments for human beings to use, as in domestication. 6

The Roman strides towards nature had obtained a unique position which, reflected through their religion, who believed in the cosmic order of nature. The world is directed by it's own principle of reason, and everything in it has a rational purpose. Plants exist for the sake of animals, animals for the sake of mankind, and mankind exists to contemplate and imitate the perfection of the world.

The Roman mind was marked by it's practicality, and Roman attitudes toward nature were distinctly utilitarian. The Romans generally believed that the world is here for human use, and they proceeded in a very pragmatic way to find uses for it's components. This dominant Roman characteristic is reflected in religion, literature, philosophy, and science. They sought knowledge for it's own sake very rarely, always seeming to demand a practical application for intellectual endeavor. Closely allied to practicality was a profound desire for order; this was demonstrated in their view of nature as everywhere else. 7

CONCEPT OF ECOLOGY:

PAST AND PRESENT

MODERN CONCEPT
The eminent ecologist Ernest Haeckel has defined "Oikologie" as the science of treating reciprocal relations of organism and external world.\(^1\) The term oikologie is coined from two Greek words: oikos (home or house) and logos (study of). Thus, the term "oikologie" stands for the study of home or house with its surroundings. Afterwards with a little modification, the term oikologie was replaced by the term "Ecology". Thus, ecology means the science of treating reciprocal relations of organisms and external world. Let us here see some more definitions of ecology which would make the concept more clear.

Many ecologists have defined ecology differently i.e. in different words. According to Dr. S.K. Agarwal, "ecology" designates the relationship of organism with their environment and leads to the idea of the quality of life, which could be equated in social life by the idea of comfort and well being.\(^2\)

Dr. E. P. Odum has opined that ecology is the study of the structure and function of ecosystems or broadly of nature.\(^3\)

\(^1\) See: Agarwal, S.K., 1992: p. 1
\(^2\) Agarwal, S.K., 1992: p. 1
\(^3\) Odum, E.P., 1957: p.1
Clarke has treated ecology as the study of interrelations of plants and animals with their environment which may include the influences of other plants and animals present as well as those of the physical features. 4

According to Petrides; ecology is the study of environmental inter-actions which control the welfare of living things, regulating their distribution, abundance production and evolution. 5

Macfadyen has defined ecology as a science which concerns itself with the inter-relationships of living organisms, plants and animals, and their environment. 6

Woodbury has regarded ecology as the science which investigates organisms in relation to their environment: a philosophy in which the world of life is interpreted in terms of natural processes. 7

Allect et al. has considered ecology as the science of inter relation between living organisms and their environment, including both the physical and biotic environments, and emphasizing inter-species as well as

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intra-species relations. 8

From all the above definitions of ecology, it is clear that all of them have one common factor and that is the inter-relationship between living beings and their surroundings which include plant kingdom as well as other living beings. Some of them have given some stress on the comfort and well-being of the society which is actually the aim of this science. But from these definitions one thing is clear as stated above that this branch of learning concerns itself with the study of environment of the human beings and their mutual relationship.


The ecological study from a particular angle deals with a particular branch of ecology, like the study on plants and animals is known as plant ecology and animal ecology respectively.

So, now we know what ecology is. Keeping in line with our topic, we should now proceed to see what is ecological awareness? Now that we know what ecology is, it is not difficult to know what is meant by ecological awareness. It is obvious that ecology concerns itself with various branches of studies as mentioned before, but ecological awareness is only being aware, being alert about ecology. Now to come to our topic i.e. "Ecological awareness reflected in the Atharvaveda", we should be clear that, it is not a scientific study, in the sense that this study has no claims whatsoever as to make so far as the ecology as a science is concerned. To explains: This study does not necessarily deal with the problems of imbalance etc. in the natural elements caused by various factors which are basically rooted in the ecological imbalance or it does not either give any theoritical solutions to such problems, but it is a study of human awareness and that of human behaviour towards nature at the time of the AV.

At the beginning of the civilization, man was bound to deforest the land for human-dwelling. Monoculture (cultivation of crops, vegetables, fruits etc.), destruction of wild life (flora and fauna), domestication of animals, draining of marshes and damming of rivers for irrigation and hydro-electric projects, development of rapid means of transport and
travel and passive and deliberate introductions of plants and animals, rapid industrialization and urbanization and wars. The effects of these human activities are extensive destruction of habitats, decimation and extermination of many species of plants and animals, spread of species to new areas, changes in the habits of species of animals many of which have become pronouncedly synanthropous, pollution of air, water and soil with urban and industrial wastes etc. The atmospheric pollution by the continual accumulation of carbon dioxide and sulphur compounds has reached such a level that a gradual rise of the mean global temperature is feared. 9

The rise of the civilization was dependent upon the increasing ability of man to use and control his natural environment and the down-fall of these same civilizations is due to their failure to maintain a harmonious balance with nature.

Today natural resources are being destroyed due to misuse and excessive use of the same by people who are not aware of their environment and their relationship with the nature. Now it has been the object of discussion everywhere from village to parliament about the environmental problems. Some ecologists have

been alerting people about their wasteful instinct towards environment.

Now the stride of the government towards environmental policy in India is best among the developing countries in the world. In the policy, the water pollution control act (1974), the forest conservation act (1980), the air pollution control act (1981), the environmental protection act (1986), the factories act amended in (1987) for making it mandatory for hazardous manufacturing units to submit a disaster management plan and an environment impact assessment are worth mentioning.