

Class: B.Sc. Home Science

Semester: II

Subject: English Language and Communication Skills

Unit: II (Prose/Stories)

THE ELIXIR OF LIFE

C.V. RAMAN

About the Author:

Chandrasekhara Venkata Raman was born at Tiruchirappalli in Southern India on November 7th, 1888. His father was a lecturer in mathematics and physics so that from the first he was immersed in an academic atmosphere. He entered Presidency College, Madras, in 1902, and in 1904 passed his B.A. examination, winning the first place and the gold medal in physics; in 1907 he gained his M.A. degree, obtaining the highest distinctions.

His earliest researches in optics and acoustics – the two fields of investigation to which he has dedicated his entire career – were carried out while he was a student. Since at that time a scientific career did not appear to present the best possibilities, Raman joined the Indian Finance Department in 1907; though the duties of his office took most of his time, Raman found opportunities for carrying on experimental research in the laboratory of the Indian Association for the Cultivation of Science at Calcutta (of which he became Honorary Secretary in 1919).

Raman's doctoral thesis on the Molecular Diffraction of Light, published by the University of Calcutta, won him worldwide acclaim. The Royal Society elected Raman to its fellowship in 1924 and in 1930 bestowed on him the Hughes Medal. In the same year, he was awarded the Nobel Prize for Physics for the discovery of the effect on monochromatic light when passed through a transparent medium. This discovery now famously known as 'Raman Effect' was useful in obtaining information about the structure of molecules.

Raman sponsored the establishment of the Indian Academy of Sciences (1934) and has served as President since its inception. He also initiated the Proceedings of that academy, in which much of his work has been published. In 1949, Raman moved to an independent scientific institution which is now known as Raman Research Institute. Late in life, he was venerated as the father of Indian science, and the Indian Government bestowed on him the first of its National Professorships.

Synopsis of the Essay:

Undermining the significance of the colourless and tasteless liquid i.e. water, throughout the ages, the man has wasted his time and energy in the search of a divine *Amrita* (an imaginary elixir of life) to get immortality. Emphasizing water as the true elixir of life, C.V. Raman underlines the importance of water in human and plant life. Further, he also talks about innovative techniques, both traditional and modern, for the conservation of water. He justifies his argument by citing an example of the Libyan Desert and the Nile River. There is a lot of difference between the climatic and geographical area of the Libyan Desert (in which we find no signs of vegetation and living atmosphere) and the Valley of the Nile in Egypt in which we can notice the most fertile and densely populated areas. The green plant, fertile lands and vegetation make it a densely populated area. From ancient civilization to the present times, the land and its vegetation are created and sustained by the life-giving waters which come down to the valley year after year with unflinching regularity. Through this example, C.V. Raman presents water as the most potent and wonderful thing on the face of the earth.

Furthermore, he talks about how water adds to the scenic beauty of the countryside. A little stream, a little pond and the rain-fed tanks in the countryside look very beautiful. One can enjoy looking upon the sun rising or setting over them. Water in a landscape may be compared to the eyes in a human face. The water tanks, especially in South India, play a vital role in agriculture. For instance, the water in the tanks is utilized in Mysore for the production of the paddy crop in the region. Water in a landscape also reflects the mood of the hour as being gay in the sunlight and gloomy when it is covered with clouds.

Keeping in mind the remarkable power of water to carry the silt in suspension, C.V. Raman advocates that the process can be utilized in the formation of the fertile lands. Swiftly flowing water can carry fairly large and heavy particles. The finest particles, however, remain floating within the liquid in spite of their greater density and are carried to great distances. In this manner, large areas of fertile land have been formed by the silt that was deposited. Such land, consisting of fine soil is very fertile for agriculture. He also advised keeping a check on the process as the running water can wash away the topsoil essential for the agricultural activities.

The problem of soil erosion is of major significance in various countries and especially in many parts of India. Occurring in a successive pattern or steps, sometimes the earlier phase of soil erosion goes unnoticed. In the later stages, the cutting up and washing away of the earth is apparent results in the formation of deep gullies and ravines, which make all agriculture impossible. In addition, the excessive rain in a large run of surplus water turns out to be the major factor in causing soil erosion. Other than the abovementioned reasons, the slope of the land, removal of the natural protective coat of vegetation, the existence of deep narrow marks made in the ground, and the absence of any checks of such flow are also causes of soil erosion. The precautionary measures such as the construction of bunds, terracing of lands, contour cultivations and the planting of appropriate cultivations are essential to control the destructive power of soil erosion.

Talking about the conservation and utilization of water in India, he explains how the proper utilization of water is directly linked with human welfare. In India, most of the agriculture is dependent on seasonal rainfall. The depletion in the rain is directly going to hamper agricultural activities. So the conservation of rainwater is of utmost importance for us. In the countries like India, much of the rainwater flows down into the streams and the rivers and ultimately finds its way to the sea. Thus incredibly large quantities of the precious fluid are lost to the country. The collection and utilization of the water should be taken into serious consideration to tackle with the problems of soil erosion as well as inadequate or irregular rainfall in the country.

Identifying the problem of afforestation, C.V. Raman suggests that the systematic planting of suitable trees, development of civilized forests along with the differentiation of wild and untamed jungle is one of the most urgent needs of India. The trees would check soil erosion and conserve the rainfall of the country from flowing away to waste. Vast areas of land can be turned into fertile land by courageous and well-planned action. The process will provide much-needed resources and directly or indirectly prove a source of untold wealth to the country. With the proper planning, the internal waterways can be developed in India which can become the cheapest form of internal transport in the country. Furthermore, the harnessing of water supply may also result in the development of the hydroelectric power plant which can be utilized to make the differences in the life of people living in the countryside or in a village.

In a nutshell, water is the commonest of all liquids and without having water the existence of life is impossible. The conservation and appropriate utilization of water is, thus, fundamental to human welfare. It is the most uncommon of liquids with amazing properties which are responsible for its unique power of maintaining flora and fauna. As we have numerous advantages of water, the investigation of nature and properties of water is of the highest scientific interest and is far from being an exhausted field of research.

Expected Questions:

1. Describe how water is the basis of all life? How can mankind ensure the 'conservation and utilization' of water?
2. What is soil-erosion? What is the connection between soil-erosion, afforestation and conservation of water?
3. What are the uses of water besides its fundamental role in sustaining life? How can water be used for modern civilization's commercial purposes? Add your views to those in Raman's essay.
4. What are the measures suggested to control the destructive power of water?
5. *Amrita* is a mythic idea. What is the real 'elixir of life' available on earth?