

A. TREES AND FORESTS

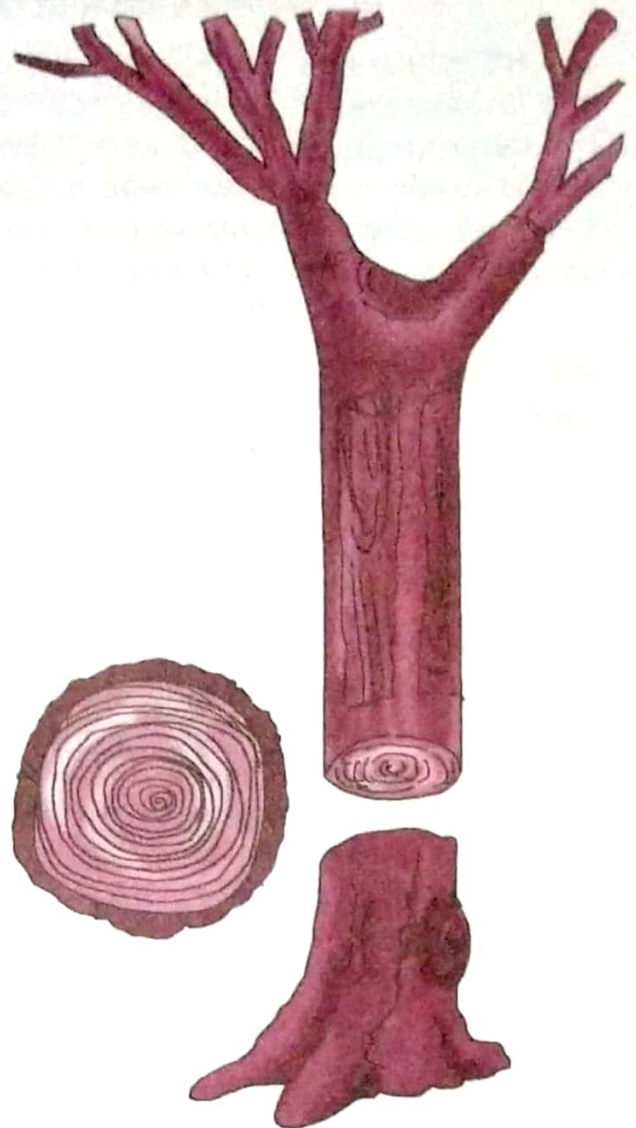
5 A tree is a woody plant usually with a single stem. A large area well covered with woody plants is called a forest. Shrubs and bushes are also woody plants but they are smaller than trees and usually have more than one stem.

10 Trees are the largest living things on the Earth, and they live longer than any animal. The tallest trees are mountain ashes which have grown to well over 330 feet. The oldest trees are the Californian pines, some of which are more than 4,500 years old. The age of a tree can be told by counting the rings in the trunk. In most kinds of temperate trees (i.e. grown in neither very hot nor very cold climates), new wood is formed each year in the form of a layer outside the wood of the previous year. The layers of wood, as seen on the cut end of a felled tree, are circular and are called annual rings. Each ring in the trunk of the wood represents one year of the tree's life. In a year of good rainfall, the ring formed is wider than one formed in a drier year. A record of rainfall can thus be read in tree rings.

30 Value of Trees for Man

Without trees the world would be bleak. Without them life as it is known would be impossible.

35 From earliest times man has employed wood for such purposes as homes, rafts, canoes, fuel and weapons. In addition to wood, he has been dependent on trees for many other materials. Fruits and nuts of many kinds have been important foods both for man and animals. Leaves of



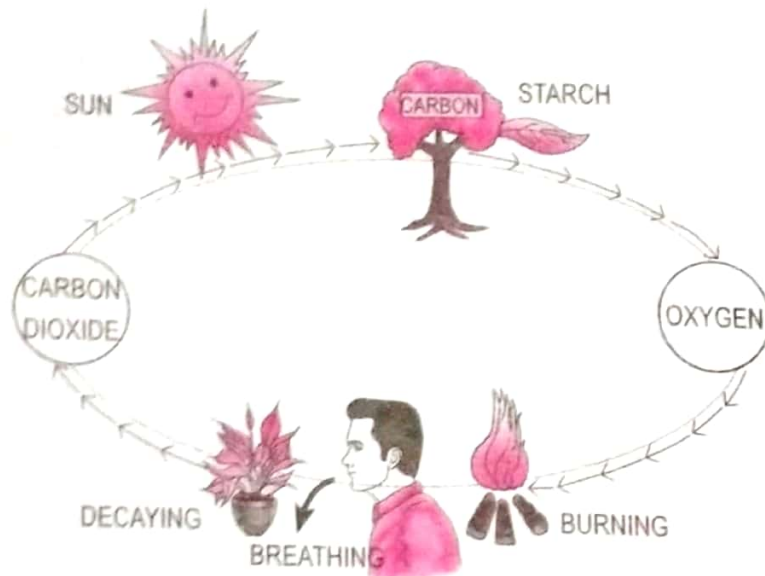
Class-notes :

palms and other trees are still used by the poor for thatching their roofs. In olden days, fabrics woven from the bark and leaves of trees were used for clothing. Seeds and other tree parts were used as ornaments. Utensils were fashioned from calabashes, coconuts, and other fruits. Medicines, including quinine, were obtained from trees, as were dyes, tanning materials, and spices.

Modern man is no less dependent on trees. He has, no doubt, invented many substitutes for tree-products. He has begun to use concrete, steel, glass and plastics in place of wood. Still the demand for tree-products has vastly increased, for example, in the manufacture of paper, cardboard and similar materials for packing goods.

Trees supply the atmosphere with oxygen, without which life would be impossible. The oxygen in the air is constantly being used up and turned into carbon dioxide when animals breathe and things burn. The green leaves of trees absorb this carbon dioxide and with the help of sunlight break it into carbon and oxygen. The carbon is used by green leaves to make starch, and the oxygen is released into the air. Thus the oxygen used up by animals is replaced in the atmosphere by plants and trees. But for this, animals would soon die due to lack of oxygen. That is why the great forests have been called the "lungs of the world". They make much of the oxygen we need to live.

The Oxygen Cycle



The starch present in the green leaves of trees and plants serves as food for animals. But for this service done by plants, all animals would sooner or later die due to lack of food. They get all their food either directly from plants or indirectly by eating animals that have fed on plants.

Class-notes :

65 Trees also help to cool the atmosphere. The leaves of trees breathe out a lot of water vapour, and this helps to cool the air. The rain clouds passing through this air condense and come down as rain. That is why there is greater rainfall over places where we have thick forests.

70 Out earth has a covering of fine soil at the surface, and under the soil lie rocks of various kinds. Nature takes millions of years to form soil an inch thick. But sometimes a single heavy shower on an open hill washes it off. This does not happen in forests and other places where there are plenty of trees. Trees stop the free flow of water, and their roots hold the soil together. Thus the soil is protected from being washed off.

75 We value trees not only for their usefulness, but also for their beauty. They have a way of refreshing the eyes and bringing peace to the mind. Perhaps that is why our ancient *rishis* were attracted to the forests. They lived in their forest homes in the company of nature. It was in these *ashramas* that they taught their pupils. When Rabindranath Tagore started a school, he also chose for his school a place full of trees. He called it *Shantiniketan* or the
80 Home of Peace.

Once upon a time, most of the hill slopes of India were covered with large forests. As the population grew, trees were cut down for fuel or for timber. That is how the wonderful forests described in our ancient poems came to be destroyed. In fact, in many parts of India there are not enough trees to supply
85 firewood. So the people are forced to burn cattle-dung which ought to be saved for agricultural purposes. Cattle-dung is very necessary to maintain the fertility of land. Chemical fertilizers cannot by themselves maintain soil fertility. In many areas where only chemical fertilizers are being used, the crop yields have started falling. If all the cattle-dung, now being burnt as
90 fuel were used as manure, about 225 million acres of farmland could be fertilized. This would result in an additional yield of 23 million tonnes of foodgrains.

There is another grave danger. Deforestation has disturbed the oxygen cycle in the air. There are now not enough trees to treat all the carbon
95 dioxide produced by man. Thus the air remains polluted which can prove very harmful for all living things. Is this not like digging one's own grave?

Trees are man's best friends; they are the invaluable wealth of a nation. It is our sacred duty to protect them and look after them well. If we do not
100 care for them, they will one day stop caring for us. And then, imagine what would happen!

Class-notes :