

and soil. To perpetuate themselves, they must eat grass or one another. The plant can turn inorganic chemicals into living tissue. No one can deny, then, the importance of plant life to continuance of the human race. Without that silent, endless manufacturing process which goes on in the green leaf under the influence of chlorophyll, sunshine, air, and moisture—the world's primal industry—we should surely die.

Every spring, nature's factory starts again to produce food, harnessing the sun's energy and combining it, with elements from air, water, and rock, into living tissue. From the roots, through the fibres, the sap runs up, carrying water and nourishment to every part of the plant, and in the inside part of the bark it flows down, bringing the foodstuffs which the leaves have manufactured.

Forests are living societies of trees, shrubs, and other forms of plant cover. Although more than forty per cent of Canada's surface is covered by trees, our people are becoming conscious of the need to conserve and expand our forest resources.

**Most industrial countries pass through the same three stages of forest history. The first is marked by energetic and often ruthless exploitation of virgin forests. This is generally followed by a period of increasing dependence on foreign supplies. Then the third chapter begins: the effort to rehabilitate or partially restore the domestic forest resources.**

Violation of the laws governing the extent of necessary forest cover is one of the most tragic examples of human folly in the face of nature's well ordered system. But it does us no good to place all the blame upon the pioneers. They did the thing that seemed right to them under their circumstances. If they denuded our watersheds with axe and fire, if they used the hoe and the plough where only trees could grow, they paid the price in their own lives through blasted hopes and abandoned farms and niggardly living. It is our part, knowing more of the interrelationships of all nature, to repair the damage where we can, and to make sure that such things do not occur again.

#### *Importance of Environment*

What is environment, in the sense of "natural environment"? It includes all factors,

natural and artificial, which affect the development of living things. Life is correspondence with environment. Different creatures seek different environments, but everything exists at a specific place under specific circumstances. As human beings, our greatest psychological asset is a sense of confidence in our environment.

The carrying capacity, which is the measure of the amount of life any area of land or water will support under given circumstances, may be altered from time to time by changes in conditions caused by nature or by man's use of the area. It sometimes happens that these changes lead to a precarious existence. The creatures in the area may seem to be leading a static life, but our environment is not a museum display case in which petrified groups are forever removed from contact with nature. Something is always happening, and just a little change, a little more severity, a little more depletion, may bring to an end the existence of groups or all the population. No one knows how many species during the ages failed to meet the challenge of their environment. George L. Clarke, of Harvard University and Woods Hole Oceanographic Institution, says in his textbook *Elements of Ecology* that about 21,000 species of extinct vertebrates and an even larger number of extinct higher plants have been described.

Today it is necessary for mankind to adjust its usage and to manage the earth's remaining resources more creatively if it is to survive. We see the warning in the life history of every forest. Trees such as oaks grow so big that their own seedlings cannot survive in their shade; the oak forest perishes, and is replaced by shade-tolerant trees like the beech, the maple, and the hemlock. Then, as long as the present climate continues, this will remain a beech, maple, or hemlock forest—a climax forest—because these trees have the ability to reproduce under their own shade.

#### *Effects of Human Acts*

**It is a curious commentary on our sense of values that though we think of mankind as being the highest form of life, the other forms of life almost invariably go into decline wherever we take possession of a piece of the earth.**

Civilised man has been more ruthlessly wasteful in his attitude toward the natural world that has served his material interests.