REPRODUCTION

LIFE sustains life. Without food no form of life can continue to live. Every living creature feeds upon some form of life. It is not only the power to reproduce its species which marks a distinction between organic and inorganic life, between living and dead substances. The food value of the organic life to all forms of life marks a striking distinction with the inorganic. It is true, however, that living bodies contain water, iron, calcium, and other non-living materials. But the real nourishment of living bodies is derived from other living substances. Food which sustains the life of man is derived from lower forms of life, whether vegetable or animal. And there is not enough living material in the world to maintain the life of the world for very long. Transmutation, and especially reproduction, are demanded if the world's food supply is to be maintained.

In the physical world, non-sentient or vegetable life transforms inorganic materials into organic substances. Sentient or animal life, including man, depends a great deal on non-sentient life for its food supply. In the upward scale of evolution higher forms of life prey upon lower forms of life. In this way, all sentient life is parasitic. Man, the highest form of life, has a more widely varied diet than any other living creature.

Without reproduction in nature, much of the beauty of the world would perish. Scenery would become dull and drab. Many of the richest colors in nature would vanish. Motion would be diminished to a great extent. Sunsets would still be glorious, waterfalls would continue to soothe and charm, deserts would have a splendor of their own, and the ocean would continue to roll and toss. But there would be no forests, no bright flashes of darting birds, no lovely flower-gardens, no music, and no love.

The lowest form of life, the amoeba, reproduces itself by simple division. It grows to the right size and then divides itself in two, each part having its own life. Potatoes may be artificially propagated by planting cut-off pieces. In a sense, human life is also arrived at by division, the separation of the child from the mother at birth.

Plant life derives from seeds in most cases. The exception is where a slip is cut from a growing plant and, stuck in the ground, sends forth roots and continues to grow, in which case the principle of simple division is still carried out. But the rule is the plant produces seed which germinates plants of its own kind. It is not the size of the seed but its kind which determines the size of the full grown plant. But seed will not grow unless it is fertilized. In the center of the flower is the pistil. At the base of it are tiny eggs or seeds. These do not have life of their own until they are touched by pollen. Bees, butterflies and wind, help to carry pollen from one flower to another. Many are hermaphrodites, in which the same blossom contains stamens bearing pollen and a pistil containing the seeds. Other plants have sexes, the males bearing pollen and the pistil and seed-bearing kind being females. When pollen falls on the end of the pistil it is carried down to the tiny eggs or seeds at its base by little canals which run through the stem. Then the seeds come to life and begin to grow. Even great oak trees have flowers, though it takes a keen observer to notice them.

In some flowers there is a suggestion of the human sex organs, especially those of a number of tropical plants.

The term hermaphrodite comes from the names of two Greek deities and refers to Hermaphroditus, the son of Hermes and Aphrodite, who was united in one body to the nymph Salmacis. The word is now used of creatures having both male and female reproducing organs in one body, as some of the fishes. The earthworm produces in one of its segments ova or eggs, and in another segment, at another season, sperm which fertilizes the eggs. Sea-squirts contain the male and female glands in the same body. The hag and the sea perch are true hermaphrodites. In human beings and the higher vertebrates the condition is rare and abnormal, and both sets of organs are never fully developed.

In many fishes nature takes a different course in solving the problem of reproduction. Ocean fish such as the salmon are seized with an impulse at certain seasons of the year to swim up freshwater rivers.