Foothills Nature Notes

CITY OF PALO ALTO • COMMUNITY SERVICES DEPARTMENT • OPEN SPACE, PARKS AND GOLF DIVISION

Woodland Decomposers

During a recent windy day in the foothills, thousands of leaves and several large limbs and branches fell to the woodland floor. Within the next few years these leaves and branches will go through several stages of decay and decomposition, finally resulting in the formation of layers of rich humus. The decomposition of these leaves and branches will result from the activities of other plants, which are commonly missed by the casual observer. These plants are known as fungi.

Mushrooms, puffballs, and shelf fungi differ from green plants in that they lack chlorophyll and are, therefore, unable to manufacture their own foods. Fungi must depend on other plants for food, existing as parasites on living plants and as saprophytes on non-living plants. Food is obtained through chemical reactions instituted by thread-like strands of the fungus plant.

The thread-like strands or hyphae of mushrooms are attached to dead leaves or wood and release enzymes which digest the plant matter. The mushroom plant absorbs some of the nutrients and the rest return to the soil. In the same basic way, shelf fungi often attack live trees. While the fruit can be seen on the tree bark, the hyphae penetrate into the heartwood and destroys living cells. Once the tree is dead, other types of fungi play a vital role in the balance of nature by decomposing organic matter and by releasing important nutrients to the soil. This return of nutrients to the soil aids the growth of trees and shrubs. The important results of fungus activity on fallen limbs and branches is one of the reasons behind the regulation prohibiting the gathering of downed wood on most public lands.

The masses of hyphae are the main plant bodies of these types of fungi. The mushroom we pick and eat is only the fruiting body of the main plant, which is hidden beneath the soil or in a log. Each mushroom or fruiting body produces millions of microscopic spores, which will eventually develop into new strands of hyphae. In this same way

puffballs and shelf fungi reproduce themselves. When the fruiting bodies die, the hyphae continue to live as long as there is available food. During the fall and winter these fungi can be found in woodland areas, meadows and along roadsides. Since fruiting is dependent on certain moisture and temperature conditions, many mushrooms and other fungi are found only during the rainy season. Some, however, do produce fruit during the summer when their particular climatic requirements are just right. The best time to observe the widest variety of fungi is during the months of December, January, and February.

By Ronald A. Russo
Edited by Kathleen Jones
Illustrated by Virginia Kolence