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Natural History Notes

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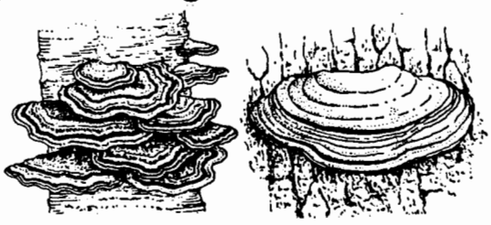
There's A Fungus Among Us

A fungus is an undifferentiated plant, meaning it has no distinct roots, stems or leaves. It also lacks chlorophyll, which is the green pigment necessary for the energy producing process called photosynthesis to take place. It belongs to the division of plants technically called *Thallophyta* and can be one of over 100,000 living species. They are found all over the earth and may very well be one of the first indicators of life found in outer space. The term fungus (plural fungi) includes mushrooms, puffballs, mildew, molds, rusts, smuts and yeasts. Because fungi do not contain chlorophyll they are unable to produce their own food. For fungi to live, nourishment must be obtained from other sources. Some are parasitic, meaning they live off living organisms, and some are saprophytic, meaning they live off dead organisms. Fungi reproduce by spores; others, such as yeasts, reproduce by budding.

Some fungi are unpleasant, some harmful, and some are downright deadly. The mold growing on an orange, loaf of bread or jar of jam is a fungus. Fungi are the most important single cause of plant disease. They are responsible for Dutch elm disease, white pine blister rust, potato blight, wheat rust, apple scab, fusarium wilt, etc. There are over 3,000 kinds of rusts, 1,500 of mildew and 1,000 of smuts. During World War II more soldiers were sent home from the South Pacific because of fungal skin infections than battle injuries. A fungus is responsible for ringworm and athlete's foot. A mushroom of the genus *Amanita,* the Angel of Death or Death Cup, is deadly if eaten, but only after an agonizing illness. It was a fungus, *Phytophthora infestans,* that decimated the Irish potato crop in the 1800's. Thousands of people starved to death during that time. Also, in medieval Europe many people suffered from a disease called St. Anthony's Fire. This was caused by a purple-black fungus which grew on their grain and eventually infected their bread. St. Anthony's fire is characterized by vomiting, weak pulse, twitching of limbs and convulsions. If a person survives that he may develop gangrene of fingers and toes.



But for all the harmful and annoying varieties, fungi would be sorely missed if all were somehow completely eliminated. It is a fungus that is responsible for bread raising, penicillin, wine, beer and other alcohol, and certain cheeses. A fungus is used in the study of genetics. Certain fungi are used to make citric, fumaric and oxalic acids — all used in paints, food, medicine, vitamins, dyes, inks, photography and cleaning. Fungi are even used to kill other fungi.

And let us not overlook possibly the most important function of a fungus: its role in decomposition. A fungus causes a dead organism to rot away. Imagine what it would be like if all the things that had ever died were still laying around! During decomposition a fungus will reverse the processes used in building an organism; it breaks down the complex compounds into simple chemicals, utilizing some for itself and leaving plenty left over to enrich the soil.

At any season of the year a great variety of fungus species can be observed. For example, many kinds of bracket fungi can be seen growing on stumps and on dead and dying trees. Often the species of bracket fungi is specific to a particular species of tree. Those that grow on the white birch are often soft and very light colored, on the hemlock grows a dark red colored fungus, and on the maple you'll find a light brown fungus. Some of these bracket fungi grow large enough to sit on, so they are more than just toadstools.

Fungi are an often ignored — but most essential — part of our life, from the tiny yeasts to puffballs six feet in diameter; from the brilliantly colored scarlet-crested British soldier lichen to the drab old man's beard. They are just another example of the diversity of nature.