

Nature Note

Mushrooms

► THESE ELFIN umbrellas, puffballs and fleshy shelves are the larger members of pale flowerless plants known as fungi. They have no leaves or roots, and no way of making their own foods as green plants do. They must rely on sucking up food already prepared by other plants. They feed on live trees or decaying logs and rotting leaves.

Other members of the lower fungi plants include molds, rusts, mildews smuts and yeasts. These fungi consist basically of many hair-like threads, such as the fuzzy mold on a piece of stale bread. Sometimes a large structure may form such as the cool soft mushroom that pops up in pastures, lawns, woods and golf courses.

This mushroom is actually the short-lived fruiting body that bears millions of spores—microscopic rounded cells that function like seeds of the higher plants. One mushroom may produce as many as 16 billion spores on the spoke-like radiating gills under its cap. When these spores have developed enough to turn loose from the parent, they billow out like a puff of smoke, dropping to the ground or drifting in air currents. They are various colors—white, pink, purple-brown or black. Each infinitesimal spore can remain quiescent for a while, but when it lands in a properly moist area, it starts developing white branching threads that creep underground.

Nearly all poisonous mushrooms belong to families producing white spores.

• Science News, 90:45 July 16, 1966



NBS

TOUGH GLASS—Chemically strengthened glass shows a pronounced deflection, clearly demonstrated in this test made by the National Bureau of Standards. T. G. Scuderi examines a specimen of strengthened glass that is sustaining a stress of 45,000 psi.

CHEMISTRY

Chemicals Toughen Glass

► **CHEMICALLY** strengthened glass is being used in an increasing number of ways by research laboratories, aircraft manufacturers and safety glass producers.

Not only does this glass have high mechanical strength but it also can be produced in thin cross sections to achieve light weight. Glass with these properties may be used for aircraft windshields, safety lenses, and in construction of underwater apparatus.

Chemically strengthened glass is made by placing the glass surface in compression. This is accomplished by surface crystallization, ion replacement in the surface, or some combination of the two processes.

To facilitate applications of such glass, the National Bureau of Standards' Institute for Materials Research of the U. S. Department of Commerce, at the request of the Air Force Ma-

terials Laboratory, has evaluated mechanical properties of the glass at temperatures from 24 to 600 degrees C. These tests, conducted by M. J. Kerper and T. G. Scuderi, have measured Young's modulus, shear modulus and the modulus of rupture for the glass at these temperatures. In addition, its mechanical properties and delayed elasticity were compared to those of thermally strengthened glass.

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