

THE MUSHROOM PROJECT

Laurie Palmer

P. ostrea'tus Jacq. --*ostrea*, an oyster. (Plate XXXV, p. 134, XXXVa, p. 142.) **Pileus** 3-5 in. broad, when young almost becoming black, *s o o n becoming pale*, brownish-ash color, passing into yellow when old, fleshy, *soft, shell-shaped*, somewhat dimidiate, *ascending*, smooth, moist, even, but sometimes with the cuticle torn into squamules. **Stem** shortened or obliterated, firm, elastic, ascending obliquely, *thickening upward*, white, strigoso-villous at the base. **Gills** *decurrent, anastomosing*

COMPETITORS

Actinomyces israelii
Bacillus subtilis
Pseudomonas putida
Aspergillus niger
Botrytis crystallina
Chaetomium globosum
Chrysosporium luteum
Cladosporium carrionii
Coprinus comatus
Cryptococcus neoformans
Dactylium dendroides
Doratomyces stemonitis
Epicoccum oryzae
Fusarium poae
Geotrichum candidum
Humicola nigrescens
Mucor pusillus



Cobweb mold
Wet Bubble
Inky Cap
Bacterial Blotch
Weepers
Lipstick mold
Bluish Green mold
Yellow Rain mold
Wet Spot
Brown Plaster mold
Confetti disease
White Flour mold
Die-back disease
Damping-off disease

behind, somewhat distant, broad, white, sometimes turning light yellow, *a n d without glandules.*

For the most part *cespitose, imbricated*, very variable, sometimes almost central. The pileus is at first convex and horizontal, then expanded and ascending.

Var. *glandulo'sus* Ag. g. Bull.--With the habit of the typical form, but larger. **Pileus** dark brown, *becoming pale*. **Gills** white, with scattered small wart-like or glandular bodies.

On trunks. A

very constant but somewhat rare variety; easily known by the dark-brown pileus. The *gland-like* bodies on the gills are due to the outward growth of the hyphae of the trama in minute patches here and there. *Massee*.

Var. *euos'mus* Berk.--strong-smelling. Strong scented, imbricate. **Pileus** fleshy, depressed, *shining*, silky when dry, at first white with a *tinge* of blue, then brownish. **Stem** short or obsolete. **Gills** decurrent, ventricose, *dingy*, white. **Spores** 12-14 x 5 u, pale *pinkish-lilac*.

Mycelia sterilia

Mycogone perniciosa

Neurospora sitophila

Papulospora byssina

Penicillium notatum

Scopulariopsis fimicola

Torula nigra

Trichoderma koningii

Verticillium fungicola



Firefang

Sour Rot

Olive Green mold

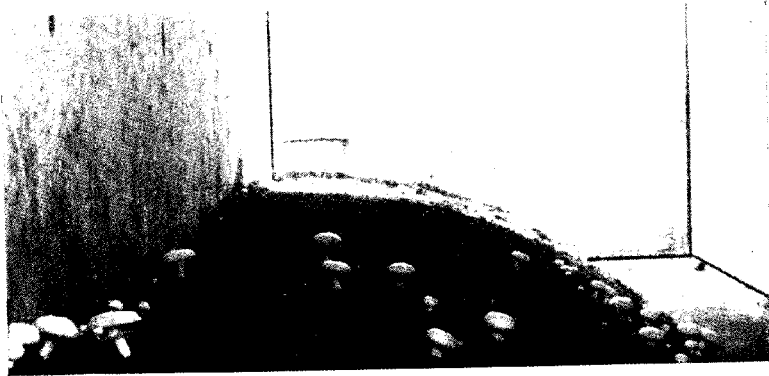
Black Whisker mold

Smokey Grey mold

Downy mildew



On elm trunks. **Pilei** very much crowded, 2 in. or more across, deeply depressed, *unequal*, at first white, invested with a slight *blue varnish*, at length of a pale brown. **Stems** distinct above, *connate* below. **Gills** rather broad; running down to the bottom of the free portion of the stem. **Spores** oblong, narrow, *oblique*, white, tinged with purple. The whole plant smells, when first gathered, strongly of tarragon. *B. and Br.*



Mushroom Bed in Air-raid Shelter

When I began this project I thought that the family name of the wild mushroom *pleurotus ostreatus* was derived from the same root as the french *pleurer* - to cry. As it turns out it comes from latin and refers to the shelflike (tiered) way the fruits grow off the vertical or sloping sides of dead trees. But my initial association ("crying oysters"), combined with the high level of humidity necessary to cultivate mushrooms indoors, contributed to this becoming for me a weeping piece.

Mushrooms are saprophytes, they live on dead matter. *Pleurotus* in particular like the lignin in wood, which means that they can also be grown on sawdust, pulpmill sludge, newspapers, or toilet paper. This crop - "gilled, decurrent, cespitose" - were grown on an integrated compost consisting of straw from Illinois and shredded computer paper found in bags outside office buildings in NYC - a balanced diet of grass and information.

Mushrooms are the fruiting bodies of a normally invisible network of tiny threads (hyphae) that grows below the surface of the soil. This network (mycelium) may survive for years without producing fruit. The mushrooms begin, when conditions are right for reproduction, as knots of hyphae which arrange themselves into organized shapes and push up through the soil by hydraulic force ("sometimes breaking through cement and asphalt"). They appear suddenly and only last for a few days at most. ("a person or family that has suddenly sprung into notice; an upstart. Also applied to a city, an institution, etc.; a contemptible person; an excrescence; a spontaneous growth; a low-crowned circular hat; 'mushroom father': an itinerant umbrella-mender".)

Fungi are considered a lower form of life; they have no vascular system; any section of hyphae will, given the right conditions, reproduce itself. *Pure cultures are grown on agar slants in sterile laboratory conditions.* Mycelium is injected into a small quantity of grain - barley, oats, rye - which is quickly colonized. Before the inoculated grain is introduced to the growing compost, the compost must be pasteurized to kill competing organisms. Contamination is the most serious obstacle to successful cultivation. Competitors will not only destroy a crop but also can be dangerous to humans - i.e., *aspergillus flavus*, common to mushroom media, produces aflatoxins, one of the most carcinogenic substances "known to man".

I got my bag of spawn through negotiations with a research arm of Campbell's Soup outside of Chicago. What would have cost \$200 through the only supply house in the country I was able to get for free after convincing Campbell's Soup that I was not a potential competitor.

The process from "innoculation" (mixing spawn into the pasteurized compost) to "pinning" (when the first organized shapes appear) took - in this case - nine days. Mushrooms require an environmental shock to spark the pinning process; the natural cycle of the gallery - being closed on weekends - provided the necessary shock.

Even the domesticated *agaricus bisporus* or "white button" has not been successfully grown hydroponically. *Meticulously followed and empirically derived procedures of a ritualistic nature take over where deterministic analysis fails.* In the process of research I was hung up on several times and messages were not returned. Every grower who would speak with me alluded to something mysterious and unknown about the process. ("Mushrooms are born of sexual intercourse between the earth and a bolt of lightning.")

Wild mushrooms are especially difficult to cultivate (although *pleurotus* is relatively easy, compared to others) and the market has not demonstrated sufficient demand to make the time and effort worth it. It may be that the unfamiliar but suggestive shapes as well as superstition about being poisoned scare potential consumers.

Those who hunt wild mushrooms in the wild seem to have nothing in common with those who might want to grow them, except for secrecy (why do most mushroom hunters tend to be, or look like, librarians?).

During the second world war the Ministry of Agriculture in England declared that mushrooms were not a food of value and prohibited their cultivation "under glass."

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