

A Basidiomycete Which Sporulates in Artificial Culture

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In the spring of 1957, we received a fungus culture from Mr. Paul Everett, a graduate student in Agronomy. He requested that we attempt an identification of it.

As we received it, it was growing on wheat stems in a Petri plate. No fruiting structures were present at the time; only a dense, white, felt-like growth. The plate was set in a 25° C incubator and forgotten. Several days later when the plate was examined we found that fruiting had occurred. The sporocarp was so appressed against the plate top that it was distorted. Transfers were made to potato dextrose agar (Baltimore Biological Laboratory) slants using the sporocarp as well as the vegetative growth for inoculum. Microscopic examination showed an abundance of clamp connections in the vegetative mycelium. Later transfers were made from the tube slants to large Fernbach flasks containing nearly one liter of potato dextrose agar. These showed only a few sporocarps after several weeks. Vermiculite was suggested as a base instead of agar. Using an entirely organic medium, except for the addition of phosphate, with vermiculite, we obtained a culture which sporulated continuously in great abundance for several weeks. As many as six to eight sporocarps matured in a single stand and as many buttons were already in evidence at this time. The characteristics of the sporocarp have led us to place this fungus in the genus *Paneolus*.¹

We were desirous of obtaining more exact information concerning the source of this fungus and the conditions under which it was isolated. An interview with Mr. Everett did not yield any specific source except by inference. His work involves studies of the decomposition of organic materials in soils of varied composition. The fungus first appeared in a soil mixture containing alfalfa meal and later in the mixture containing wheat straw. A soil suspension was used as inoculum and seems to be the most logical choice as a source. However, the alfalfa meal cannot be ruled out entirely, although the plants were subjected to 65° C for 24 hours before grinding.

This fungus would seem eminently suitable for physiological and nutritional studies of reproduction in the Basidiomycetes. There is at present, I believe, only *Agaricus campestris* available for such experiments as can be conducted with a compost medium.

Another point of interest is its drug producing potential. This genus has at least one species which has been described as producing a substance in the sporocarp that induces hilarity and intoxication, while another has been described as producing a substance poisonous to guinea pigs.

¹ Professor A. H. Smith of the University of Michigan Herbarium at Ann Arbor, Michigan, has subsequently identified this fungus as *Coprinus fimitarius*. (*C. macrorhizus* sensu Kühner & Romagnesi).

Obviously, it may be used successfully as a teaching aid. Its ease of cultivation and sporulation insures this.

For convenience of access, we have deposited a culture with the American Type Culture Collection where it has been assigned the code number 12890.