A "Black Yeast" as a Cause of Mildew

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A series of yeasts or yeast-like organisms which produce a black color have been described in the literature. These have been named *Saccharomyces niger, Torula nigra, Schizosaccharomyces niger, and Monilia nigra.* The primary source of these yeasts has been dairy products, although a wide variety of other sources has been reported. Hansen, Lindner, and Henrici (see Skinner, et al., 2) independently studied cultures of these forms and all concluded that they are but yeast-like growth forms of dematiaceous molds of the type of Cladosporium. In general the group of "black yeasts" still seems poorly understood.

Source and Isolation

The "black yeast" reported on here was found as a cause of mildew in a house located in the Gulf Coast area of Texas. The house was less than six months old and the interior had been finished with an oil base titanium paint made by a well known company. The mildew was first noticed shortly after the house was occupied. It occurred as small black spots on the interior walls and soon spread to present darkened patches of growth two to three inches in diameter. The builder removed a one square inch section of the outer layer of the sheetrock which formed the interior walls and brought it to the laboratory for analysis.

Microscopic examination of the specimen revealed a sparse mycelial phase of growth which appeared green under reflected light. The mycelium was septate and some conidia were observed in branched chains. Scrapings from the specimen were plated on Sabaroud's agar to suppress bacterial growth. After three days incubation at room temperature, a number of different mold colonies developed. These were identified as species of *Mucor, Aspergillus, Alternaria,* and some forms with sterile hyphae. The predominant colonies present however were small, cream-colored, soft, and glistening. Within two additional days incubation, these colonies retained their original morphology but had become jet black in color. At this stage of growth the colonies were an average of one centimeter in diameter. The other organisms present were decided to be incidental contaminants since they are commonly isolated in air exposure plates, and probably they were not involved in this case of mildew.

Description and Identification

Microscopic examination of the yeast phase of growth revealed budding cells that were predominantly ellipsoidal, but sometimes spherical. The average size of these cells was 3.5 by 9.0 microns. Ascospores were present, thus differentiating this yeast from the *Torula nigra* described by Hansen [(1), page 328]. The cells were uniformly pigmented, and no evidence of granular pigmentation was observed.

As the colony aged, it became granular in appearance and the mycelial phase of growth was evident in six days. The mycelial structure was not well developed, but some branching was present and spherical conidia were produced. The mycelium was a dark green color in contrast to the jet black pigmentation of the yeast phase colonies. The culture was destroyed by an over-zealous janitor before physiological tests could be run.

The literature descriptions of the "black yeasts" are sketchy and in some cases contradictory. However, the organism described here appears to resemble closely the yeast described by Will (Guilliermond, 1) as Form III of a *Torula nigra* (syn. *Saccharomyces niger*). It is believed that this is the first report of any such organism being involved in paint mildew.

SUMMARY

A "black yeast" was isolated as the cause of a mildew on an oil base paint. This yeast is similar to the Form III of *Torula nigra* as described by Will.

REFERENCES

1. GUILLIERMAND, A. 1920. The Yeasts (translated by F. W. Tanner). New York: John Wiley.

2. SKINNER, C. E., C. W. EMMONS, AND H. M. TSUCHIYA—1947—Henrici's Molds, Yeasts, and Actinomycetes. New York: John Wiley.