

in the winter in razor sections of the tubes. At any rate the fact remains that spore discharge is copious up to the first hard frost, and that consequently it is inconsequential no matter how mild the weather may be.

Variations in atmospheric humidity likewise were not reflected in fluctuations in spore discharge, an observation in harmony with that of Buller (41) on *P. squamosus* who could detect no change in spore discharge when the surrounding humidity was greatly changed. Spore discharge, however, is greatly affected by one factor other than frost, and that is the moisture content of the sporophore. When this is lowered by frost, a certain minimum spore production is checked, and is not resumed until the normal rate until the necessary amount of water is restored. Fruiting bodies in unshaded positions in dry weather throw spores sparsely; no doubt the explanation of this is to be looked for in their low moisture content. It further happens occasionally that sporophores growing in unfavorable conditions produce few spores or none at all. It is not probable that such sporophores are naturally sterile—a phenomenon has been observed in *Coprinus*, *Agaricus*, and other genera.

(d) *Secondary Spores*: Although secondary spores are produced by comparatively few Hymenomycetes, *Fomes applanatus* is stated to produce conidia on the dorsal surface of the pileus. Schulzer-Muggenberg (42) was the first to make this statement in 1880. Merrill in his specific description says that the upper surface of the fruiting body is conidia-bearing and usually brownish during the growing season from the covering of conidia. This brown coating is infrequently to be seen, but examination showed that in every case it is composed of basidiospores. These are mechanically deposited by the currents of air after they fall from the hymenial tubes. This can be easily proved in such a case by covering the top with a sheet of paper which soon bears the same coating of spores. Moreover, the upper surface of such an organization as not to favour spore production, becoming heavily encrusted during its first season. Young fruiting bodies in early stages of development, as well as very many others of various ages, have been persistently examined in the field for conidia, but without success. Likewise none of my artificial cultures produced conidia.

(e) *Spore Germination*: In the germination studies the usual hanging drop method with Yeast-Fieghem cells was used. Various media were tried, including distilled and tap water, solutions of grape sugar, cane sugar, maltose, peptone, meat extract, acids, alcohol, alkalis, etc., in graded percentage strengths. Decoctions of wood and hanging drops of water containing pieces of wood were also experimented with. The greatest success was attained with two brands of domestic malt extract.