NOTES.

FUNGI FOR CLASS-DEMONSTRATION.—The following may possibly be useful to others who, like myself, are concerned in the preparation of class-material.

Bunt.—To obtain material for *Tilletia*, I break up three or more bunted grains of Wheat in water in a small evaporating dish; weigh or count out the seed-wheat required and add it to the water (the amount of which depends on the quantity of seed used); stir thoroughly and carefully, and allow to dry, stirring frequently as drying proceeds, so as to get the spores well distributed instead of allowing them to settle where the film of water over the grain is in contact with the dish or with other grains. I usually do this in the afternoon, so that the grain is dry enough for sowing on the following morning.

The effect of a copper-sulphate dressing is easily shown by taking part of the Wheat thus contaminated and dressing it with copper-sulphate in the proportion used by farmers, and sowing it when dry in a row next my control row. In the past three years I have found no instance of the failure of the copper-sulphate dressing to prevent Bunt in Wheat. I keep my stock, for class-work on the spore-germination, in covered glass jars.

Smut.—The method adopted for Bunt was a failure as regards Smut. Nor did I obtain very great success by soaking and opening the seed-grain and actually placing the spores on the embryo. The plan I now follow is to soak Barley in water for about twenty-four hours: I then remove the chaff and stir up the naked kernels in a small amount of water, in which I have broken up several grains of smutted Barley; allow to dry, and sow when dry. My Barley tillers well, so to obtain

material for the early stages of spore-formation, I pull up a plant on which one ear or more is smutted, and dissect out the ears of the eight or ten or more shoots that so far have no ears visible externally. Once I found a plant with two ears smutted and six or eight sound, but this was the only time that all the ears on a plant were not equally affected; and once I found an ear with the three lowest kernels alone smutted while all those above were normal. To keep up my stock of spores for germination in class-work, I gather the smutted ears before the spores are shed, and keep them in small tin tobacco-boxes. On one occasion a small beetle got shut up too, and was imprisoned for a week or two before I found and released it. I noticed many spores adhering in short threads, really the excreta of the said insect. I tried the germination of the excretal and normal spores in a culture-cell (made by fastening a glass ring to a slide and growing the spores in a hanging drop of water on the cover-slip inverted on the ring), and found the former to germinate in about half the time required for the latter. For this summer's material I smutted some Barley with spores taken from Barley (Row 5 of my plot at the Botanic Garden), some with spores from Oats (Row 7), and some with spores from Wheat (which, however, gave no result). Omitting details, I may say that I found 70-80 % only of the grain grew, and I gathered eighty smutted ears from Row 5 and forty-six from Row 7, amounting to 37 % and 21 % respectively of the total number of ears produced.

Phytophthora infestans.—As Potatoes are not to be absolutely depended upon, and as growing and infecting successive sets of potato-tops under bell-jars involves much space and time, I have for the past three years used *Solanum laciniatum* as class-material. I can rely on finding *Phytophthora infestans* upon it and in good condition, and its petioles and midribs furnish material much superior to potato-leaves. I prefer to gather all my *Phytophthora* material before the dew is off, and I keep it in a vasculum until my class at 11.0, when I use it fresh.

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THE FUNCTIONS OF LATEX.—Although several attempts have been made to ascertain the functions of latex in plants, they have not led to any very conclusive information respecting it. Accordingly, at the suggestion of Prof. Marshall Ward, I undertook an

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