germination test with cereals. Aeration and drying of the soil produced only a slight improvement. The average percentage germination from twelve tests of oats in a good fresh compost soil was 86 per cent. When the same soil was used for subsequent germination tests, after being aerated and dried, the average percentage vitality of twelve tests of the same oats (100 grains of oats being used for each test) was reduced to 76 per cent.

If the theory of toxic root excretions is to be accepted as an explanation for this falling off in vitality, as would be shown by soil test, it would seem that the poisonous excretions from the first crop of oats proved to be fatal to the weaker plants from the second and subsequent crops. Since the oat plants had been left in the soil fourteen days only, the reduction in plant food would be inconsiderable.

If, as contended by supporters of the "De Candolle theory of root excretions," plants excrete from their roots substances which impair growth within themselves and render the soil less suitable to the growth of other plants belonging to the same order or having the same requirements in respect to plant food, then the necessity of crop rotation in agriculture and horticulture becomes more obvious; the reasons for the so-called clover sickness in some soils, "fairy rings" of mushrooms, and much in connection with plant relations in nature also becomes easier of explanation.

It was suggested that, in consideration of how plants feed, it would seem reasonable to expect that these toxic root excretions, if any, would be more abundant with a given species on some soils than on others, owing to the relation between the requirements of the plant and the mineral constituents in solution in the soil; also that bacterial life and the fermentation induced by it in the soil might be expected largely to overcome the effects of toxic excretions from plant roots.

A short discussion on the longevity of seeds and recent work by Dr. Ewart, of Melbourne University, Australia; Dr. Croker, of Chicago University, and Dr. Duval, of Washington, D.C., was also taken up, and the progress results of some work that is being conducted by Mr. William Bond, of the seed laboratory staff, in making periodic germination tests of weed seeds that were collected in 1902, were presented. The evidence now available would seem to make clear that weed seeds and other seeds which are buried in the soil do not retain their vitality as long as when stored in a cool, dry place. There are relatively few kinds of seeds which will retain their vitality for a longer period than, approximately, fifteen years. Ewart found from exhaustive tests that of the species which are best able to retain