

QUESTION DRAWER.

Sweet Peas.

1970. Should Sweet Peas be planted from north to south, or from east to west; and should it be sunny or shady. What sort of soil?

Rows of Sweet Peas should run from north to south, as they then get the sunlight on both sides of the row. A sunny exposure is best. Any good loamy soil well enriched with *thoroughly decayed* stable manure will do.

Questions 1071, 1072 answered by Mr. W. T. Macoun, Horticulturist, Central Experimental Farm Ottawa.

Fertilization.

1071. SIR,—Does not the honey bee fertilize the second crop of clover?

2. Does nature abhor close fertilization?

3. Have you observed that a certain insect visits only flowers of a particular color?

4. Do different species of flowers ever fertilize each other?

5. Does a plant prefer the pollen of a flower of another species to that of one of its own kind?

6. Are experiments still being carried on in Manitoba to obtain by artificial cross fertilization of Fife wheat with Ladoga or by selection from the Fife alone to secure a variety of Fife that will ripen earlier and before frost?

1. The bumble bee plays a more important part in fertilizing the second crop of red clover than the honey bee; which in most races is unable to reach the nectar in the blossom and consequently is rarely seen in the red clover.

2. It would seem that nature does "abhor close fertilization," as most flowers are so constructed that they can receive pollen from others either by the agency of the wind or insects. Barley, wheat, and oats are among the few which are close fertilized. It has been proven that the seed from flowers, which are made to self-fertilize by preventing the admission of other pollen, do not produce as strong plants as those which are left to cross fertilize naturally.

3. Insects do not appear to have any particular color that they prefer as can be easily observed by watching a honey bee in a garden.

4. Different species are sometimes hybridized in nature, but this is not of frequent occurrence. There are hybrid willows and oaks produced in this way. The Rogers' hybrid grapes are an example of artificial hybridization.

5. A plant does not prefer the pollen of a flower of another species to that of its own; this would mean hybridization which seldom occurs in nature. If the pistil of a flower, however, receives the pollen of another flower of the same species as itself better results will follow than if it were self-fertilized.

6. The cross-fertilization of wheats was begun at the Central Experimental Farm, Ottawa, in 1888. Since that time many varieties have been originated. None, however, have been produced during the last two years. One variety, the Preston, a cross between Ladoga and Red Fife, has during the past four years given a greater average yield per acre than any other kind tested at the several Dominion Experimental Farms; selection of the cross-bred grains is being carried on yearly.

Apple Canker.

1072. SIR,—I have a lot of young apple trees, planted two and three years, that are affected with a black fungus, the Ontario particularly so.

They have made a very good growth, but the trunks and even the new wood is nearly black in some cases with the fungus.

Would you advise washing trees now with the Saunders wash, or with a strong lye wash? Will either of these washes injure the buds on young wood?

I have idle time at present and would like to prune now, but have been advised not to prune young trees until later in winter. Do you think that trees would be injured if pruned now with a pocket knife? An early reply will oblige.

C. E. SMITH.

Your trees are probably affected with the Apple Canker, a disease long known in the old orchards of Great Britain, but until recently not prevalent in America. Your best remedy is to clean the trees thoroughly of dead and decaying bark, and spray with Bordeaux mixture. We refer our correspondent to Mr. Paddock's excellent article on the Apple Canker.