

come in, but most of my correspondents agree that losses by this cause are much less than they were a few years ago. This improvement is due to the general adoption through the clover seed districts of the method of feeding off their clover before the middle of June and reaping the seed from the second crop. Mr. T. Farrow of Bluevale, Ont. writes: "For the last two or three years there has been none, or scarcely any clover seed after mowing, but last season there was a little, not enough though to make it worth threshing out. The seed on the pastured fields has been exceedingly good. Alsike seed was very good and yielded well, notwithstanding the great drought of last summer."

Clover was, in the Ottawa district, considerably damaged by the larvæ of the common Clouded Sulphur Butterfly (*Colias Philodice*, Golt) which this year appeared in enormous numbers. The caterpillars were also destructive to a great number of other leguminous plants in the seed beds of the Experimental Farm, species of *Cytisus*, *Caragana* and allied plants, having to be constantly watched and kept clean by the use of Hellebore and Pyrethrum. Towards autumn large numbers of these caterpillars were found dead in the fields, bearing a cluster of the bright yellow cocoons of a small parasitic Ichneumon Fly (*Megorismus nubilipennis*, Ashm). I am indebted to Mr. W. H. Ashmead of Jacksonville, Florida, for the identification of this and many other microhymenoptera.

As usual during hot, dry, summers a large amount of injury was done to grass crops by grasshoppers, but there were no complaints of excessive injury.

## ROOT CROPS AND VEGETABLES.

Root crops all over the country seem to have suffered more from the drought than any others, the result of the absence of autumn rains being very perceptible in the gross returns.

### TURNIPS.

#### Turnip Flea-beetle "Turnip Fly," (*Phyllotreta vittata*, Fab.)

From all quarters come in complaints of injury by the Turnip Flea-beetle.

*Attack.*—Small shining black beetles, with yellow markings on the wing covers which eat the seed-leaves of turnips and all other crucifers, directly they appear above the ground.

These troublesome little beetles live in the larval state upon the roots of plants of the Mustard and Cress family, to which the Turnip belongs. The grub is described by Dr. Cyrus Thomas (Illinois Rep. VI, 159) as "a minute, slender grub, with six tiny feet on the anterior segments and an anal pro-leg; white, with a faint, dark medial line along the anterior part of the body; a horny light brown head and a brown spot on the posterior extremity. This state lasts about seventeen days when it changes into a naked white pupa in a little earthen cocoon near its feeding place, in which it remains but a short time. From the observations made, Dr. Shimer is of the opinion that they live exclusively on the roots and underground stems of cruciferous plants."

*Remedies.*—These will come under three heads:

1. Selection of varieties the least liable to attack. One variety which has been recommended is the "Grey Stone," it is claimed that this is even obnoxious to the beetles and that if sown amongst Swedes it will keep the beetle away. I have not experimented in this line.

2. Judicious management in the time of sowing the seed. This will vary in different localities. Some of the beetles appear early in the spring and attack the cruciferous plants they may find. If turnips are sown too early they will be destroyed. There is then a short time when very few of the mature beetles are to be