

CLOVER HAY PER ACRE, 1906 (FIRST YEAR).

Variety.	1st cutting,	2nd cutting,	Total.
	June 22, lbs.	Aug. 8, lbs.	
Chilian red.....	3402	2016	5418
Canadian red.....	3717	1827	5544
Canadian mammoth red.....	2756	1456	4212
English red.....	3180	2457	5637
English late flowering red.....	4788	804	5592
Silesian red.....	1890	1050	2940

From these results it will be seen that while the English late flowering red, gave the largest first cut, the second cutting was very small, and the highest total produce was obtained in the year from the English red, though it was not appreciably in advance of either the Chilian or the two Canadian varieties. The Silesian clover gave much the lowest produce of all. The largest second cut was got from the English red.

Serious Damage by Cutworms

During the past few weeks the caterpillars known as cutworms have swarmed in several parts of Western Ontario.

The infestation was investigated by Mr. L. Caesar of the Agricultural College, Guelph, who found the insect to be the Variegated Cutworm (*Peridroma saucia*), which has on previous occasions appeared in devastating numbers, the most serious outbreak having occurred in British Columbia and the neighboring Pacific coast states in 1900. Near Leamington the worms were first observed in clover fields where they soon devoured the crop and left the ground bare and black; they then marched on to the next field and consumed whatever vegetation they met with. If a fruit tree happened to be in their way, they climbed it and devoured both fruit and foliage; many peach trees were thus attacked and the fruit ruined.

Like the cutworms these caterpillars feed only at night and remain in concealment during the day, hiding in the ground where the soil is loose and under any rubbish or other shelter that they can find. When full grown the worm is about two inches long, with a yellowish stripe on each side above the legs, the rest of the body is darker and mottled with black, white or grey; the most characteristic feature is a row of yellow or white spots, five to seven in number, along the middle line of the back. Some are already changing into the chrysalis stage, for which purpose they bury themselves in the ground and form there an oval earthen cell. The moth, into

which they finally turn, has a wing expansion of about an inch and is dark blackish brown in colour, often clouded with red towards the front margin of the wings, but with no conspicuous or distinguishing markings; the underwings are white with a pearly lustre. Like so many other of our most destructive insects, this one has come to us from Europe.

Many specimens have been sent to the College for identification from various parts of the Province, the complaint being in most cases that the worms are destroying the green tomatoes by boring great holes through them; in some cases corn is badly injured and in gardens vegetables of all kinds are attacked.

REMEDIES.

The most effective remedy for these nocturnal marauders is the poisoned bran mash, which is made by mixing half a pound of Paris green in 50 lbs. of bran (the proportion for larger or smaller quantities is 1 to 100); the poison should be added to the dry bran little by little and stirred all the time till the whole is tinged with the green colour, then add water sweetened with sugar or molasses till the mixture is sufficiently moistened to crumble nicely through the fingers. If bran cannot be procured, shorts or flour may be used and for field work may be distributed dry by means of a seed drill. The mash is sprinkled about the plants at sun-down and after dark the worms come out and eat it in preference to the vegetation and then go off and die, usually in their places of concealment. Paris green, half a pound to 40 gallons of water may be used on many plants with much advantage.

When the worms are very numerous and are moving on from one field to another, their progress may be checked by ploughing a deep furrow ahead of them—two about 4 feet apart would be better—in these hot holes are bored or dug from 12 to 15 feet apart. The furrows should be made in the morning so that the sides may be dry and friable by night fall. The worms fall into them as they

march and being unable to climb up the loose sides they travel along the furrow and fall into the post holes; there they will be found in dozens or hundreds in the morning and can easily be killed. Where the soil is stiff clay, this plan will probably not be so effective, as the worms may be able to climb up the sides and go on their way; reliance will then have to be placed in the poisoned bait. Where very numerous a heavy roller may be employed with advantage, if the soil or crop will permit of its use. It must be remembered that live stock or poultry must not be allowed in any place where the poison is scattered.

The worms are no doubt attacked by parasitic insects and many will perish from bacterial diseases—this is the usual experience when outbreaks of a similar character have occurred—and therefore there is little danger of a repetition of the plague next year. Everything, however, should be done to check the visitation now before more damage is inflicted and to reduce the number that may survive for the production of another brood.—C. J. S. Bethune, O.A. College, Guelph.

Blight on Oats

That the unhealthy condition of the oat crop is not confined to the Province of Ontario appears in the reports received by the Ohio Experiment Station which indicate a general prevalence over the state of an abnormal condition of oats, shown by many of the blades turning yellow or reddish yellow, in spots or streaks, and finally dying at the tips or throughout the entire length.

A similar condition was manifested by the oat crop of Ohio and farther west in 1880, followed by a considerable reduction in yield, and such a condition is reported by the Connecticut Experiment Station as occurring in that state in 1906.

The attack of 1880 was pronounced by the Division of Vegetable Pathology, U. S. Department of Agriculture, to be due to bacterial infection. The Connecticut Station failed to find evidence of such infection last year, and we have not yet found conclusive evidence of such infection in the present attack.

In the case of the present attack, plant lice have been mentioned by many observers as being unusually abundant on oats, but we have not as yet found

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