

FARM AND FIELD.

NEW INSECT PESTS.

The following are extracts from a paper read by Mr. W. Brodie, President of the Natural History Society, at a recent meeting of that body:—

The *Pegomyia bicolor*, noticed by Rev. T. W. Fyles, in the April number of the *Canadian Entomologist* as a "leaf mining fly new to Canada," occurring in *Rumex* leaves in South Quebec, has already been reported to the Society, as occurring in leaves of mangolds grown in the Township of Scarborough. Since then I have found it common everywhere around Toronto, the Hamber, Ashbridge's Bay and marsh, on a native dock, *Rumex obtusifolius*. I have also found it at Guelph, Harriston, Warton, Spry, Tobermory and Horse Island, on native docks, *R. obtusifolius* and *R. verticillatus*. This wide distribution shows it to be native to Canada as well as to Europe. Out of 27 samples of mangold and beet leaves from different points in the counties of York and Ontario, I have found it in the earliest only.

But I have to report to you the occurrence of a worse enemy—an English insect, *Pegomyia betae*, closely resembling *bicolor*—almost undistinguishable from it in the larvæ form—most likely introduced into Ontario within the last five or six years. I have found it without exception in 31 samples of leaves, gathered in the counties of York, Ontario and Halton. This season the fly appeared about the first of June; by the 19th most of the larvæ were mature, many had begun to pupate. About 4th July the imagoes began to appear, and were very abundant in mangold fields about July 12th, and now, although the weather has been cold, the second brood of larvæ are maturing. There are always two broods, and there may be three or more in one season. So you see it has qualities which make it a formidable enemy to mangold culture. Out of the many samples of leaves I have carefully handled, and the many hundred flies I have bred, I have as yet not found a parasite. No doubt they are to be found in Europe or elsewhere, and should be sought after and imported.

PLATYGASTER ERROR.

I would again direct your attention to the clover midge, *Cecidomyia Leguminicola*, the very serious injury it has already done, and the difficulties in arresting its progress. Two Hymenopterous parasites have been described. In the Washington report of the Commissioner of Agriculture for 1879, Comstock, in speaking of one of them, says:—"It has been found only as yet in specimens from Yates county, N.Y." I am very glad to report to you that I have found it in nine samples of clover heads from two neighbouring counties, York and Ontario. About one per cent. of the midge pupa were parasitized. This is a good beginning, and I would urge on all observers the necessity of carefully working out the life history of this valuable little insect in this Province, with a view of aiding its increase.

In the *Canada Farmer* of July 15th, 1875, is the first record of the occurrence of *Pteromalus puparum*, Linn., *P. picridis*, Prov., in Ontario. It was then expected this parasite would destroy the butterfly, but as you know, this expectation was not realized. We now know many of the reasons for this. I now report the occurrence in this Province of an English parasite, *Heloteles melanarius*, no doubt introduced within the last few years. Its life history is such that it is protected from many of the casualties which have prevented the increase of *P. picridis*. To this species, *H. melanarius*, we owe the remarkable decrease last fall and this summer in the cabbage butterfly.

This is a sample of Alsike clover, collected by Mr. W. Rennie, seedsman, of this city, and handed to me about three weeks ago. The crop presented a sickly and weathered appearance, and on close examination it was found that the seeds were quite eaten away by some insect. It is a minute and, I think, undescribed species of trips. They were very numerous, thousands of them on a few square inches, averaging more than 50 individuals to a head of clover. All members of the group to which this species belongs are characterized by habits injurious to plants, many of them too well-known as gardeners' and fruit growers' "pests." This species if "let alone" will most likely put Alsike out of our Province.

A BRIGHT OUTLOOK.

According to the Report of the Bureau of Industries for August a good harvest of grain crops in Ontario seems to be well assured. The fall wheat gives an average yield of 21½ bushels and the spring wheat of 18½ bushels per acre—the average of both being 20 bushels, and the aggregate production exceeds that of last year's harvest by 10,360,000 bushels. Barley was a good crop in the southern and south western counties of the Province, but in the northern and north eastern counties it was affected by the summer drought. The grain, though plump and heavy, was in large areas discoloured by the rain showers of the last week of July. The accounts of the oat crop are much the same as for barley, but, being two or three weeks later in ripening, it has been greatly benefitted by the July rains, and the yield will possibly exceed the estimate. The area in rye is much less than last year, and the average yield about the same. Peas is a bountiful crop, and is ripening under the most favourable circumstances. The pea-bug has done much less harm than usual this year, and in many localities throughout the west it has hardly appeared at all.

The area and production of the foregoing crops for two successive harvests are given as follows:

	1884		1883	
	Acres	Bushels	Acres	Bushels
Wheat.....	1,586,961	31,730,341	1,682,616	21,370,069
Barley....	701,435	17,860,777	757,156	18,414,337
Oats.....	1,185,620	49,383,000	1,418,309	54,573,609
Rye.....	101,141	1,630,417	188,111	3,012,240
Peas.....	570,628	13,106,062	542,717	10,673,723

The hay crop was injured to some extent by the frosts of the last week in May, and more seriously by the drought of June. The yield is estimated at 3,044,912 tons, or 1,000,000 tons less than last year. The appearance of the corn crop is not promising, due partly to inferior seed, and partly to the low temperature prevailing throughout June and July. The fortune of the crop depends on the weather of August and September. The area planted is 174,894 acres. Beans have suffered from the drought and the cool weather, and they will mature a week or ten days later than usual. The plants, however, are strong and healthy, and being well loaded a good crop is likely to be gathered—the estimate being 2,953 bushels from an area of 24,877 acres. The reports of the root crops are generally favourable. Potatoes are excellent, and mangolds and carrots are fairly good. Turnips made slow growth at first, owing to the dry weather, but the recent rains have been very beneficial. The area in potatoes is 168,862 acres; in mangolds, 18,841, in carrots, 10,980 acres, and in turnips, 104,108 acres. The total area in roots is 302,291 acres, or about 8,500 more than last year.

Mixed husbandry is what we need. The farmer who grows something of everything adapted to his locality will be safer, and in the long run will save more, than he who devotes his energies and land mainly to one or two crops.

CARE OF NEWLY SET TREES.

While it is very important that only really good trees should be selected to transplant, and equally important to set them in the best manner, it is even more important that the best of care should be given the tree after being set, not only until it shows that it is alive, but during the entire season it should be carefully looked after; in fact as a rule, a tree is not fully established until the third year, therefore should not be neglected until it has been transplanted several years.

Soon after a tree is set it should be liberally mulched with partially decayed leaves, covering the ground a little beyond where the roots extend. To keep the leaves from blowing away, they should be covered with stones, sticks of wood or short pieces of boards. Never heap up any material about the trunk of a tree except fresh earth. The mulch should be spread evenly on the ground, and care should be taken not to let it dry through during a drought, but it should be watered as often as it shows any indication of being dry. In a very dry time not only should the mulching around a favourite tree be kept wet, but the ground a few feet beyond should be watered. On cultivated land the mulching may be omitted, if the land be light and loose on the surface. It is important to keep the whole land moist if the best results are expected, because if only a small space where the roots of the tree are to be watered, the water is very rapidly absorbed by the surrounding dry soil, and thus prevent a vigorous growth, if it does not dry the tree up entirely before the owner is aware of it.

Having properly cared for the roots of the newly set tree, the top should be the next care, especially if it be a tree with a long trunk before coming to the branches. The practice of cutting off all the lateral branches is so universal that almost every tree that is set has nothing to protect it from the direct rays of the sun for the first four to six feet, unless artificial protection be resorted to, which always should be to trees that have had the lateral branches removed. This protection may be very simple; a single thickness of coarse matting tied around the tree is sufficient, or even a limb of a cedar tree set in the ground on the south side of the tree, or a board set up so as to shade the trunk of the tree during the hottest part of the day, will do much to keep the trunk from being scorched by the sun. Many trees are lost during hot weather for the want of some protection for the trunk. This is wrong, because the expense is so slight every one who sets a tree can find the time or means to do it.—*Massachusetts Ploughman*.

THE MECHANICAL FARMER.

The farmer who is not is one-half a farmer. Not that he needs special training in mechanics, though this would not come amiss, but he should have a "mechanical eye," that is, ability to see clearly through any intricacies that there may be in machinery of the farm, and have a "faculty" for fixing things when out of fix, as often enough occurs with the mower, the rake, or the plow. The ordinary wear and tear of farming tools is very great under the most favourable conditions, and frequent breakdowns are inevitable. If he can turn his hand to both the blacksmith's hammer and the carpenter's plane he is truly fortunate. Yet how many helpless farmers there are. If a shaft breaks or draws out in a hayfield, if an axle springs, or a bolt or bar bends on a plow, cart, or other utensil, away he goes to the "Corner" to get it mended or bring it assistance, while the whole work of the farm waits. If a board or shingles are blown off the barn, or a shed door gets off the hinges, or needs to be "eased"