

A Foe of the Potato Beetle.

Editor "The Farmer's Advocate":

I have received from my esteemed correspondent, Mr. Richard Gibson, of Middlesex Co., Ont., a specimen of a kind of ground beetle which he had found upon his potatoes when he was spraying them. This beetle was devouring the grubs of the potato beetle, and was very actively engaged in this work. Mr. Gibson found several other specimens in the same field, and thinking that an account of the beetle would be of interest to your readers, he asked me to write a short account of it for publication.

This useful beetle belongs to a group of the predaceous ground beetles which have their bodies very much flattened, and, as a rule, frequent flowers, feeding upon the insects which are attracted to them by their nectar. These insects are frequently red and blue, or even brilliant metallic green in color, with the wing-covers squarely cut off behind so as to expose the tip of the body. Among these we find Mr. Gibson's good friend, whose name is *Lebia grandis*. It is a moderate-sized species for the group to which it belongs, has a yellowish-red head and thorax, and dark-blue wing-covers. This insect is a well-known predator upon the eggs and grubs of the Colorado Potato Beetle, and seems to be rather more abundant in the London district than elsewhere in Canada. Dr. William Saunders, in his annual address for 1878, before the Entomological Society of Ontario, and again in 1881, spoke of its frequent occurrence near Hamilton and in potato fields near London. Mr. Moffatt also spoke of its frequent occurrence near Hamilton in the latter year. Unfortunately, this active and elegant little beetle, which is a little less than half an inch in length, is not common enough to affect the abundance of the Colorado Potato Beetle, which it preys upon. There are, besides, several other insects which prey upon the Colorado Potato Beetle, such as the Spined Soldier-bug, the Belted Soldier-bug, the Many-banded Robber-bug, several kinds of Ladybird beetles, and many members of the Carabidae, or Ground Beetles, besides the *Lebia* above mentioned. One particular enemy of this troublesome enemy of the farmer should be mentioned. It is a kind of fly somewhat resembling the house fly, named *Lydella doryphora*, which lays its eggs on the grubs, and of which the maggots destroy many before they become beetles. Anyone spraying their potatoes with the poisoned Bordeaux mixture to prevent the injuries of the potato beetle and the fungous disease, potato rot, need have no fear of destroying these friends at the same time, because they would not eat the Paris green, nor would they devour the dead grubs after they had been killed by the poison. The maggot of the fly, which is a parasite inside the grubs of the Colorado Potato Beetle would, of course, die with the grub, but, unfortunately, these friends are too few in numbers to make it worth while to give up spraying on their account. J. FLETCHER.

Central Experimental Farm, Ottawa.

Tent Caterpillars — Oyster-shell Bark-louse — Pear Blight.

The June crop report of the Fruit Division, Ottawa, contains the following notes on insects and fungous diseases:

INSECTS.

The presence of the Tent Caterpillar is reported in many parts of Canada. In Nova Scotia it has defoliated many orchards, which will undoubtedly affect the volume of the crop. The best orchardists are holding it well in check by spraying and by hand-killing. A reference to last year's reports shows that Tent Caterpillars were noted in considerable quantities in the Annapolis Valley, after a series of years during which they were not numerous. The conditions in Nova Scotia last year are duplicated this year in several places in Ontario. Orchardists should therefore watch very carefully to destroy the nests and, later, the egg-cases, even if they have not been troublesome for some years. The Tent Caterpillar can be readily controlled by early spraying with arsenical poisons.

The Bud Moth is again reported very frequently, more especially on the younger trees. The best treatment for Bud Moth is arsenical poisons, applied very early.

The Tussock moth is causing much damage to orchards in the neighborhood of towns and villages, the shade trees of which are permitted to be breeding places of this insect. Hand-pick egg-clusters when the leaves have fallen, and spray early with Paris green.

From the apple district north of Lake Ontario a correspondent writes: "The oldest inhabitant has never seen anything like the swarms of young Oyster-shell Bark-lice that are now moving on the trees. The habits of this insect and the remedies for it are being studied for the first time. Many different mixtures are being used." This insect will probably seriously injure the trees this year. Trees affected should be sprayed with kerosene

emulsion while insects are moving, and with lime whitewash when the trees are dormant.

The Aphis is, apparently, one of the most troublesome insects in British Columbia. A lime spray when the trees are dormant, and kerosene emulsion very soon after the first leaves show, will hold this insect in check.

The Cutworms have been doing considerable damage to the tomato crop.

The Codling Moth and Curculio are beginning to attract attention.

The cherries are remarkably free from the cherry worm the present year.

Rose bugs are reported very prevalent on light soil.

FUNGUS DISEASES.

Pearl Blight is developing somewhat seriously, unfortunately, in the best-cared-for orchards. A correspondent in the Niagara District reports that he had to cut out and burn seventy-five twelve-year-old Clapp's Favorite pear trees affected with this blight. Another correspondent has taken out fifty Dwarf Duchess, and the disease is still progressing. Blight does not yield to spraying with the Bordeaux mixture. The best treatment is to cut out infected twigs and limbs, taking care to cut back well into sound wood at any time when the disease is noticed. In practice, this cutting is usually begun soon after midsummer, and continued so that all infected branches are cut out and burned before the opening of the following spring. It is important that this should be done the first year the blight is noticed, as this early removal may prevent a serious epidemic later on. Unfortunately, the disease is more liable to attack orchards making a vigorous wood growth; hence, if there is any serious damage, the cultivation and fertilization should be withheld, and pruning should not be done in such a way as to induce strong wood growth.

Only a few correspondents have noted the apple scab, but this may be expected later.

W. A. McKinnon, Canadian Commercial Agent Bristol, Eng., formerly Chief of the Fruit Division, Ottawa, writes that, from all accounts, a fair crop of apples may be looked for in England. "On the whole," he says, "unless exporters have reliable advices, they should be sparing in their shipments of early apples, as I am inclined to think this market will be well supplied with the common sorts of apples until Christmas."

The Department of Trade and Commerce, Ottawa, is advised by its Australian representatives that a strict inspection be exercised of Australian fruit-landing in British Columbia, in order to exclude the Queensland fruit-fly.

THE FARM BULLETIN.

Pursuant to a vote of the directors of the Ontario Entomological Society, the headquarters of that body will be moved from London to the Ontario Agricultural College, Guelph, some time in the latter part of August.

The Toronto Exhibition.

The Canadian National, Toronto, the greatest of all the annual agricultural and industrial exhibitions in America, this year claims the dates August 27th to September 10th, and promises to be better and greater than ever. Entries for live stock close August 4th. Dairy and grade-dairy cattle will be judged Friday and Saturday, August 31st and Sept. 1st; beef breeds, Monday and Tuesday, September 3rd and 4th; horses, in breeding classes, Monday, Sept. 3rd and following days. It is announced that a splendid consignment of Shire horses from the King's Sandringham stud will be on exhibition. The horse show in all classes will be the strongest ever seen in Canada. With a \$4,000 prize-list, and the noted Scottish breeder, Mr. Wm. Duthie, as judge, the grandest display of this breed ever seen at Toronto is assured. All the cattle, sheep and swine classes will be exceptionally well filled. Many new buildings have been added this year, and among these one of the most interesting will be that devoted to process manufacturing, in many lines. The Toronto Exhibition is a great educational institution for farmers and their families, which they cannot afford to miss; and the excursion rates on all railway lines are so low that none need miss the opportunity for a pleasant and profitable outing after the stress of the harvest is over. A well-earned recreation should be taken by all after the toil of the season, and no better opportunity is offered than that of the Toronto Exhibition.

The King's Shires for Canada.

A Canadian Associated Press despatch states that the Yorkshire Post says the King will send representatives of his famous Shire horses, from his stables at Sandringham, to the Toronto, Ottawa, London, and American exhibitions this fall. Lord Rothschild, at the request, it is said, of the King, is also sending exhibits from his stud at Tring.

Denatured Alcohol in Canada.

The agitation pending the consideration of the bill recently passed by the American Congress, freeing from internal revenue tax denatured alcohol (i. e., ordinary alcohol which has by some process been rendered undrinkable), suggested the question to leading Canadian newspapers and periodicals, why should not Canada adopt a similar measure, and thus reap the advantages claimed for tax-free alcohol as a fuel, source of light, and generally useful commodity in manufacture and arts? One of the advantages claimed for tax-free alcohol on the strength of the findings of American Congressional and British Parliamentary Committees, was that alcohol manufactured from corn, potatoes and waste products of various kinds, and denatured by the addition of a small proportion of the more expensive but bitter and pungent wood alcohol, could be produced cheaply enough to reduce by one-half the present cost of lighting with kerosene. In Germany, denatured alcohol (made chiefly, we believe, from potatoes) is used extensively to run alcohol engines, as well as for many other purposes. It is also employed to a considerable extent in Great Britain. There seemed good reason to anticipate substantial benefits to the United States from removing the excise tax, which hitherto has made the price several times what the mere cost of production would be, and the natural conclusion was that Canada would gain by a similar move. "The Farmer's Advocate," believing that anything likely to reduce the cost of light and power should be welcomed, lent its assistance to the demand (which was favorably commented on by Hon. W. S. Fielding), although we were inclined to question the optimistic predictions made by some of our contemporaries. For instance, we did not see how agriculture and industry were to be revolutionized by alcohol made from refuse apples, to assemble and distill which would seem likely to cost a large proportion of the value of the alcohol produced. Nevertheless, tax-free alcohol promised, and still promises, to be well worth while. However, after our leading journalists had delivered themselves on the subject, an anonymous correspondent came out with an assertion indicating that we were better off than we thought we were, there having been in force in Canada for the last ten years a provision whereby the Department of Inland Revenue, Ottawa, manufacture two grades of denatured alcohol, by mixing with ordinary grain alcohol two different percentages of wood alcohol, the cost in each case being such as to bear only a small profit to the Department. To ascertain the facts of the matter, we wrote to the Department of Inland Revenue, and received from the Deputy-Minister, W. J. Gerald, the letter appended to this article. It appears that the American legislation was to some extent adapted from ours, and our manufacturers have been for years enjoying the boon of comparatively cheap alcohol, though not nearly so cheap as, rightly or wrongly, anticipated in the United States, where manufacture and denaturation are now to be permitted to private enterprise; nor have we heard of alcohol being used to any extent in this country for lighting. On the whole, it is possible we might, with advantage, go further than we have done in freeing from restrictions the manufacture of and trade in denatured alcohol for fuel and lighting purposes. The matter will be considered, no doubt, at the next session of Parliament. Meanwhile, the Secretary of the Association of Manufacturers in the United States warns the people not to expect a millennium after January 1st, 1907 (the date when the removal of the tax goes into effect), but promises that after two or three years of experimental work, alcohol will be applied successfully to many uses, and the anticipated benefits will be realized. American distillers claim the denatured spirit can be distilled for 20 cents a gallon. If so, the present prices charged in Canada should be capable of great reduction.

Following is the Department's reply to our letter:

"Prior to 1889, the manufacture of methylated spirits (denatured alcohol) was carried on in licensed establishments, and under the supervision of officers of this Department. It was believed, however, that the interests of the revenue required that the Department should take over the production of this article, in order that the denaturing might be thorough.

"The Department supplies two grades, one consisting of 25% of wood alcohol and 75% of grain alcohol, and which is sold to the trade at \$1.10 per gallon; the other grade consists of about equal proportions of wood and grain alcohol, and is supplied the trade at \$1.50 per gallon.

"The first-mentioned grade, containing a much larger percentage of grain alcohol, is supplied only to manufacturers who use it in the production of a certain line of articles approved by this Department, and its use is under a bond that it shall be employed only for the purpose specified and on the premises described in the application.

"The manufacture of denatured alcohol is a very simple one, as it consists solely of the admixture of spirit produced from grain, potatoes, etc., with alcohol resulting from the destructive distillation of wood, and the object of such admixture is to render the spirit unfit for potable purposes, and to enable the trade to procure a solvent at a price much less than that of duty-methylated spirit (denatured alcohol) is used free of excise duty.

"Respecting its manufacture by private enterprise, and the lowering of the price thereof, I do not see how