

The female lays her eggs chiefly in autumn in the ground, or on its surface, or on damp grass close to the ground. These eggs are very small, black and shiny, and as many as three hundred have been found in one female.

In spring, the grubs or worms hatched from the eggs appear, and begin to feed upon the plants at hand. They are legless, cylindrical, of a dirty greyish colour, wrinkled across, and when full-grown about an inch to an inch and a-half in length. The tail of the grub ends abruptly, as if cut off; the head is protruded as a blunt point, armed with two strong black jaws. Though legless, the grub has such power of contracting and expanding in length, that it can readily pierce the ground or wriggle itself forward. It is often found at night on the surface of the ground. From the toughness of its skin the grub is sometimes known as "Leather Jackets." Having reached full size about the middle of May, it becomes exceedingly destructive for a time. Those which were sent to the College passed into the pupa stage about the third week in May. The larva is exceedingly hardy. It can be frozen till quite brittle, and yet, when thawed, be active; it can be immersed in water 100 hours, and can do without food for over three weeks.

The resting or quiescent state, usually called pupa, is undergone below the surface, but sometimes under the protection of weeds. The pupa (containing the future fly) is furnished with short stout spines, pointing backwards, by means of which, when the proper stage of development is reached, it can raise itself upward through the ground. As soon as it reaches the surface and rises a little above it, the horny-like pupa case splits, and leaving the empty case standing upright, the Crane Fly comes forth and spreads its legs and two wings. The specimens developed at the College completed their pupa stage about the 29th of May. This is important to remember, because a crop sown after that date will in all likelihood escape injury by the grub. Our instructions to the correspondent were based on this observation, and, on inquiry, we found he had succeeded in getting an excellent crop of beans which had been planted on the 11th of June.

The perfect insect resembles very much in external appearance the muscivora, but is about four times as large. It has one pair of wings, and behind them a couple of slender structures, one at each side, with a knob at the end. These delicate rod-like structures are about the tenth of an inch in length. The body of the insect has a tawny brownish appearance.

REMEDIES.

1. Prevent as far as possible the depositing of eggs. The female seeks damp meadows, neglected herbage and shady spots found at the sides of cultivated fields, and under the shade of trees in open fields. Remove such conditions by drainage, mowing the neglected ground and burning the mixed grass and tops of weeds. The pasturing of sheep on affected places is good, as they eat the grass well down and trample the ground a good deal.

2. Many birds are of great help both in destroying the larva and the full grown insect; consequently a method of cultivation calculated to expose the grubs for the birds will result beneficially.

3. Deep ploughing of infected pasture is a good practice, as it prevents the hatching of the eggs, and places the grubs where many are likely to perish for want of food. Rolling the land, especially late in the evening or at night, has been followed with good results, for many are crushed and others are impeded in their progress through the soil.

4. The application of certain fertilizers, such as guano, salt and nitrate of soda, are beneficial in promoting a quick and healthy growth, thus enabling the plants to withstand an attack. Some have found an application of gas lime on the fields before breaking up serviceable.

5. Sow as soon as the larval condition is past—in the case under consideration about the first week in June. As soon as the pupa cases are seen sticking up in the soil the grub stage has ended, and the insect is fully developed. A well-drained soil, thoroughly worked and pulverized ground, and plenty of manure are very likely to keep off an attack.—*Bulletin XXII, Ont. Agr. Col., Guelph, Nov. 15, 1887.*

The Annual Ploughing Match of the County of Hochelaga.

The match was open to both Ontario and Quebec, and a number of veteran ploughmen from Ontario were not slow to avail themselves of the opportunity of trying their strength with their brethren of the east. For the best two ploughed ridges in the field, Mr. Andrew Hood, of the township of Scarborough, Ont., won the handsome gold medal presented by Mr. Hugh Paton, M. F. H., and \$75. The second prize went to Wm. Milliken, of the township of Markham, Ont., and the third to Thomas McLean, township of Vaughan, Ont. There were a number of other prizes in this class. In the young men's class the first prize was won by Joseph E. Robert, St. Laurent, P. Q.; the second by Robertson Howick, P. Q., and the third by John Andrew Scott, Cote St. Michael, P. Q. There were also a number of additional prizes in this class.

The first prize in the young men's class was donated by Mr. Thomas Irving, Petite Cote, the president of the society, and consisted of a gold medal and \$30.

The Ontario ploughmen are loud in their eulogies as to the courtesies they received at the hands of their Quebec brethren, giving unmeasured praise to the president; Mr. Hugh Brodie, the secretary-treasurer, and Mr. and Mrs. Buchanan, the host and hostess, who entertained them so royally during their stay.

The judges were Mr. Simpson R. Rennie, Milliken, Ont., the winner of the sweepstakes gold medal last year for Ontario farms, and Mr. Sharpe, the winner of forty-one first prizes in Scotland without a break.

First Prize Essay

ON "THE RELATIONS BETWEEN EMPLOYERS AND EMPLOYED IN CANADA, WITH SPECIAL REFERENCE TO THE FARM, WITH A VIEW TO IMPROVING THOSE RELATIONS."

(By the Editor.)

(Continued from November.)

It cannot be denied that there is oftentimes a tendency, painfully prevalent, on the part of the employed to *shirk duty* in the absence of the employer. It has its seat in the moral derangement of the spiritual man, and is largely the result of a neglect of training. In its essence, it is a practical ignoring of the Omnipresence of the Almighty and of the day of reckoning, when the actions of men shall be weighed in eternal balances, which never fail to give a correct weight.

The indications of this moral disease are not far to seek. Amongst the symptoms we may mention, long friendly chats between the ploughmen at the end of the furrows, a great desire to study the astronomy of the sun from ten o'clock a. m. till noon, and from four p. m. till night, a wonderful elasticity of movement when the "boss" comes in sight, and the passing of a resolution at the caucus meeting in the evening to "spot" the one who is trying to do his duty unless he desist. So grievous is this disease—which by the way is wonderfully infectious—that it practically renders *nil* successful farming in Canada, where the proprietor or his foreman are not pretty constantly on hand.

But where, we ask, are faithful foremen to be found? We have met with but few of these in Ontario, during the journeyings of the past two years, who are worthy of the name. The reasons of this rarity are not far to seek, as the ambition of our best laborers has hitherto been to obtain farms of their own. Many of the farm foremen who are here now, have been imported from Great Britain. But two things militate against them—the current of the blood does not keep pace with the quick march of our Canadian summers, and they have been used to the handling of more assistance in the accomplishment of a certain amount of labor than our Canadian farmers can afford. Relief here must rather be looked for from our farmers' sons on small farms, and from the sons of British emigrants who bring along with them all the reliability of their fathers, and graft the same with the quick-

ness of movement so requisite in this land of impatient summer seasons. We know of no better opening for any working men who desire to live in the country, than that of farm foreman. Though competent men of this class should come from the north and the south, and the east and the west, there would still be a demand for them, and at a fee practically better than that given to the teacher of the common school. Relief in stock-keeping must in the meantime come largely from Britain, where the care of good stock is, as it were, a second nature to many of the stalwart yeomen of those islands.

The hope of making a foreman out of an ordinary farm hand somewhat advanced in life, unused to the position, is a forlorn one. One of the most essential qualifications of a foreman is the faculty of keeping his mind running over his work so that nothing is forgotten or overlooked. His plans are so hinged that they may be disjointed and re-adjusted with any change of wind or weather, without serious loss of time on the part of those whom he directs. If not acquired early in life, this habit of rapidly taking in the situation comes not later. It may indeed be termed a lack of capacity, but it is a lack that disqualifies. It might prove a good plan for the farmer to look out a young man amongst the many who pass through his hands in this changing country, and train specially for the work.

The employed on the farm too often manifest a *heartless indifference* to the material welfare of the farmer. So far is this frequently carried that words cannot utter the extent of the evil. It oftentimes arises from thoughtlessness, but oftener it is to be feared, from a perversity of will, which ignores all moral obligation, other than that defined by the regulations of the civil code. The ways in which it manifests itself are legion. We mention a few as samples: In drawing manure to the field, the employed will lay it down in hollows as thickly as upon the hills, though properly instructed previously as to how it should be done; in letting down bars they will be allowed to fall upon the ground, even from the top peg, which soon either splits or breaks them; the gate has not been opened wide enough, the corner of the waggon rack catches it, and the headpiece is splintered; the barn doors are allowed to clog beneath with manure in winter, and the hinges are broken; gaps are left down to the detriment of the crops; a spade is used for a crow-bar, and an axe for a spade, and tools are left lying just where used, especially the smaller ones, as bolts, wrenches, whetstones. Talk of the effects of the tornado! Give half a dozen men full swing upon a farm for but one season, without close supervision and we have these in perfection in the broken buildings, dismantled harness, strewn fences and general havoc that abounds on every hand.

Say not he picture is overdrawn? How can it be overdrawn? We speak the words of truth and soberness when we write thus, drawn in part from the bitterness of experience, and we cannot but believe that the *morale* of workhands on the farm in Wentworth county is much the same as in the counties of Lambton or Russell. There are some noble exceptions, it is true, and we have met with some of these; but they are infrequent. A farmer with but one workhand, and he generally by his side, will have but a dim idea of the picture we have just drawn. It will be different, too, where there is but one man laboring on the place without close supervision, for he feels some sense of his responsibility. It is when half a dozen congregate on the farm, without such supervision, that the vandalism is seen in all its terrors, and every one added to the number but increases the power of the engine of destructiveness. To be sure competent foremen would do much to mend this state of matters, but where shall we find them?

One would suppose that self interest would lead the employed to do differently. Both classes are slow to learn that they best subserve their own interests when they try to promote the real interests of the other. The farmer should not forget that his employed is a man, though he may be an imperfect one, and that his lot is a hard one, though for this he may be largely responsible himself. The employed should endeavor to bear in mind that fidelity will not go unrewarded. Though one employer fail to recognize this, another will, and the faithful laborer will never have to seek a place.

One of the commonest causes of inefficiency on the part of farm servants arises from *lack of thought*, from an inherent disposition, as it were, to allow the powers of mind to lie dormant; they will not fasten those

"I would like to see the JOURNAL in every farm house in Ontario. I have taken it for three years, and would not do without it now."—Jos. Crone, Birmam, Ont.