

Entomology.

Grub in Spring Wheat.

To the Editor of THE CANADA FARMER :

Sir, As far as my experience went in this, and two neighbouring counties, during 1865, sod land ploughed in the spring, and sown with wheat, was an excellent crop, averaging I would say from 25 to 35 bushels an acre, and no appearance of grub. But in 1866 the case was very different. The greater part of sod which was ploughed in the spring and sown with spring wheat, was in many cases a total failure, and I neither saw nor heard of a field but was more or less affected with it. For months past I have been expecting to see something in the "FARMER" regarding it, but as I have not seen any notice taken of it, I have myself put hand to paper to enquire if any satisfactory explanation can be given. I have had but little experience in wheat growing, and should feel much obliged if you, or any of your readers who have had long experience in growing wheat, can explain how it should be so bad one year and none of it another, and if there is a likelihood of its being bad this year. I have 8 or 10 acres of old sod, the stumps coming out of it, which I would put in wheat if I had no apprehension of grub. The grub did not touch any fields that had not been sod the previous year, as far as I know.

INQUIRER.

Turnberry, Co. of Huron, 8th February, 1867.

NOTE BY ED. C. F.—We regret very much that our correspondent has not given us any particulars respecting the "grub" of whose ravages he complains, by which we might be enabled to identify it, and probably suggest a remedy. He leaves us in profound ignorance as to whether the "grub" attacks the root, the stem, or the ear of the wheat-plant; whether it is the orange larvæ of the midge, eating the grain, that of the Hessian fly at the lower joints of the stalk, the army-worm, which consumes the young plants entirely, and attacks the leaves and heads of those that are most mature, or the wire-worm, that cuts off the plants at the root. If he will be so kind as to give us some further information respecting this grub, a few particulars about its habits, the time it appears, and the part of the plant it attacks, or, better still, if he will send us in a small tin box some specimens of the grub itself, we shall be most happy to give him all the information in our power respecting the insect, and the best means of treating it. In vol. II, No. 13, of THE CANADA FARMER, (July 1, 1865,) he will find in the meantime an illustrated article on several of our wheat insects, which will assist him in determining the class to which his enemy belongs.

Noxious Insects Naturalized in America.

No. 12, (September 1866), of the "Practical Entomologist," (Philadelphia), contains an interesting article by Mr. B. D. Walsh, on this subject. From it we learn that fully one half of the worst American insect-foes have been imported from Europe. Thus the Hessian fly (*Cecidomyia destructor*), was introduced nearly ninety years since; the wheat midge (*Diplosis tritici*), about forty-five; the bee-moth (*Galleria cerasana*), at the commencement of the nineteenth century; the apple moth (*Carposapasa pomonella*), the currant clear wing (*Trochilium tipuliforme*), the meal worm (*Tenebrio molitor*), the cockroach (*Blatta orientalis*), &c., &c., at indefinite periods; and within the last few years the asparagus beetle (*Crioceris asparagi*), has made its appearance in the State of New York; finally, the gooseberry saw-fly (*Nematus ventricosus*), has since 1862 showed itself in several places, and has already proved very destructive. Mr. Walsh doubts if even the so-called American cockroach (*Blatta Americana*) be really indigenous, and suspects its importation from Asia. Probably with justice, he states that the injury inflicted on America by European insects is only reciprocated to a very slight extent; the chief insect pests for which we have to thank America being the pecan-weevil (*Bruchus pisi*), and the now too-well known house ant (*Myrmica molesta*). He argues, therefore,

that (though popularly known as the "New World,") the American continent being the older, its plants and animals mostly belong to an old-fashioned creation, and can no more stand their ground against their more vigorous imported European competitors, than the Red Indian can hold his own against the Caucasian race. Mr. Walsh's theoretical speculations always deserve earnest consideration, and in this case the facts appear to bear him out. One of our common white butterflies has already obtained a footing in Canada, and perhaps eventually may prove more destructive there than the indigenous *Pieris oleracea*. Nor is America the only land so situated, inasmuch as it seems ordained that the European race, wherever it may locate itself, shall take with it some of its natural pests. Thus it is well known that many of our common weeds flourish in Australia and New Zealand, with far greater luxuriance than in Europe.—R. McLACHLAN, in the (English) *Entomologist's Monthly Magazine*.

STATE ENTOMOLOGIST IN ILLINOIS.—We are much pleased to learn that a bill has passed the Lower House at Springfield, appointing a State Entomologist, with a salary of two thousand dollars per annum, and that there is another before it providing for an Ornithologist. This is as it should be.

The Apiary.

The Drone or Male Bee.

The drone is considerably larger than the worker bee, and is easily distinguished by his thick abdomen, his loud humming sound, and heavy motion in flight. His wings are somewhat longer than his body; the eyes are particularly prominent. The proboscis is shorter than that of the worker bee, and not designed for gathering honey; the hind legs are not provided with a cavity or basket for carrying pollen, and he has no sting. The cavity of the abdomen contains no honey bag, but is wholly occupied with the digestive and reproductive organs. The drones generally make their appearance in the hive about the middle of May, in this country, though in some instances they may be found much earlier. They are indolent and stupid. They never gather honey or food of any kind, but live upon that gathered by the workers, which they consume in large quantities. Their sole purpose is to impregnate the young queens. Although not one in a thousand performs the duty assigned them, yet the necessity of their existing in large number is easily understood, when it is known that the Queen is always impregnated on the wing; hence, if but few drones existed, she would not be likely to meet them. The drone that cohabits with a queen dies in a few hours afterwards. They are all short-lived. Coming into existence, as above stated, about the middle of May, or just at the time when the young queens are hatching, they continue until the swarming season and the honey harvest are over, when they are destroyed by the worker bees, being of no further use to the colony, but a damage, by consuming what has been stored for winter use.

By the use of properly constructed moveable-comb hives, the skillful bee-keeper may prevent a useless number of drones from being reared, by simply shaving off the caps of the drone brood with a sharp knife, or, if they are allowed to hatch, by shutting them out of the hives in the afternoon, when they will gather on the outside, and may be brushed off and destroyed. The workers are thus saved the time and labour of destroying them; and the bee-keeper will obtain several pounds of honey for his trouble.

Italian Bees.

This variety of honey bee appears to be the native bee of the Alpine regions of Switzerland and Northern Italy, and especially near the Lakes Como and Maggiore. Their graceful forms and attractive colour induced the enthusiastic German apiarian, Dzierson, to import them into Germany in the year 1853. It was found that they stored larger quantities of honey during the honey season than the common black bee; and others, stimulated by the prospect of gain, began to introduce them into every part of the European continent, and into the United States in the year 1860.

After an experience of nearly eight years, partly in Germany and partly in this country, the following

points of superiority of the Italian bees over the common black bees have been thoroughly tested by me, and the opinion formed is verified by numerous testimonials from other persons keeping the same and by articles contributed to our journals by our best beekeepers:

First, They are more constant workers, coming out sooner in the morning and continuing later in the evening, and are less inclined to rob than the common bee; on the contrary, they defend their hives against robber bees, whether black or Italian, more successfully.

Second, They gather much larger stores of honey, a fact proven by every person that has given them a trial.

Third, They swarm earlier, owing to the fact that the queens are more prolific, breeding earlier in the season and continuing later, and sometimes swarming in seasons when the common bees do not.

Fourth, In any operation with them, the pure Italians are less inclined to sting.

Fifth, They protect their combs against the depredations of the moth more effectually than the black bee.

Sixth, Their flight is more swift, by which they overcome the high winds on our western prairies more effectually.

Seventh, They roam over a larger amount of space, going almost a double number of miles, and, where forage is scarce in the immediate vicinity, only Italians would prove profitable.

Eighth, Their beauty of colour and graceful form render them attractive to every person of taste.

The queens, in their native country, are of a beautiful, bright, golden colour, which they retain until they die of old age, but if removed from their native country, they frequently change to a brown, and often to a still darker colour. All queens raised in any other than their native country are of a darker hue. The brightest queen I have seen was a bright orange-yellow, but generally they are a shade darker.

Although the Italians differ from the black bees in many characteristics, they are yet so closely allied to them as a class, that they readily mingle, and, by coition, produce a hybrid species. An Italian queen, if impregnated by a black drone, will produce pure Italian drones, but the workers are a mixture, not all alike, some are almost Italians, some almost of the black species, and some others more or less of either species. The assertion, however, that some will be pure Italians and some pure black workers is not correct. If examined more closely, it will be found that they are not quite pure; in such cases the young and just hatching should be examined, as bees sometimes join from other colonies. The difference of workers, hatching from the eggs of such bastardized queens, is probably caused by the amount of spermatozoa each egg receives. The egg receiving more spermatozoa than another, would probably produce a worker resembling nearer the bee by which the queen was impregnated; whilst those resembling more the species of the queen, probably received less spermatozoa.

E. KRETCHMER.

Pleasant Grove, Iowa.—*Western Rural*.

THE EGYPTIAN BEE.—The *American Bee Journal* says that through the agency of the "Society of Acclimatization," at Berlin in Prussia, the variety of the honey bee prevalent in Egypt, has been imported and introduced in Germany. Mr. Vogel, of Custrin, in whose charge the imported colony was placed by the Society, has been successful in multiplying stock and preserving its purity, and several young queens have already been sent to England. It is stated that arrangements have been made to bring this variety to this country at an early day. It differs from both the common and the Italian bee in size and marking, and is stated to be quite as gentle in temperament as the latter, while the breed is more easily kept pure.

PROFIT IN BEE-KEEPING.—As a proof that bee-keeping, as a business, pays as well as or better than any branch of horticulture, I would state that I am now offered for my bees, \$1,500 cash. It is not yet six years since I paid \$20 for the four stands with which I commenced the business. I have never bought a hive since. So this is the increase of my capital in five seasons, saying nothing of the bees, honey and wax sold in the meantime, or the pleasure derived from 'ho business. Now that I have so many hives, I find the profit increasing every year without requiring more time and labour than I bestowed on a few. So far from there being any danger of over stocking, I find that my bees have done better the two past poor seasons than many have done where there were but a few hives kept in one place, and I am convinced that where they are managed rightly, hundreds of colonies will do well where one will. To accomplish this, however, it is indispensable to have them strong and vigorous in Spring that they may take advantage of the whole honey harvest.—Mrs. Ellen S. Tupper, in *Iowa Agricultural Report*.