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TORONTO, FRIDAY, AUGUST 2, 1878.

THE HESSIAN FLY.

JUST when we were beginning to congratulate ourselves upon an unprecedented harvest, tidings come to us from a variety of sources that the Hessian fly has been busily employed in undermining the spring wheat. For our staple crop it seems this enemy has a peculiar taste. In one of the agricultural colleges of the United States the experiment has been made of sowing all kinds of wheat, with a view of testing the inroads of the Hessian fly. Some of the species he seizes upon greedily, while others he passes by without any favorable notice. The experiment merely proves that when there is a decent choice, the insect displays a *penchant* for some particular species over others. It leaves untouched the question whether in the absence of such grain as may be called its favorite food, it will not seize upon what is going. The probability is that while like all other animals he is possessed of a particular taste, he will take what comes readily to hand. For one thing we may be thankful, that the fall wheat is now happily beyond the power of the insect to destroy. The crop of fall wheat is pretty well garnered, and those farmers who have been fortunate enough to sow largely of the fall wheat are now rejoicing in well-filled barns. But the spring crop remains. It was a most promising crop until a few days ago. The sifting wind and rain of last week came, and the farmer is horrified to find that his fields have been fairly riddled by this enemy. The stalk with its vitals eaten out gives way before the force of the wind. There is now reason to believe that the spring crop is very much damaged by the insidious attack of the enemy.

It was what might be expected considering the peculiar nature of the past year. We had a winter remarkable for its openness and its freedom from snow and frost. It was an open season, allowing growth to go on at a prodigious rate, and it has so far proved itself favorable to the winter growing crops. At the same time, the absence of cold has failed to check the wonderful incubations of insect

life. Flies of all descriptions have literally revelled in the favoring climatic conditions. We question whether there was ever a year in the memory of the living that was more suitable to the development of all kinds of parasites. The Hessian fly among the others has seemingly prospered. He has been working his way without notice. He has been luxuriating in the midst of abundance. He has done his work effectively. The returns of the crop will undoubtedly be affected by his inroads.

The whole subject of insect enemies is not without its wholesome lessons. For one thing it teaches us about the uncertainty of any and every harvest. Not until the crop has been gathered in, are we sure of successful results. Fields that are full of promise to-day may be blighted to-morrow. It is the lesson of all life. Just when we are rejoicing in the prospect our hopes may be blasted. Then again we are taught that on the part of man toil and skill and watching are needed to overcome unforeseen difficulties. Man must labor for his bread by the sweat of his brow. He must watch and plan. Not only must he engage in arduous toil in ploughing and managing the land, in resisting the inroads of weeds, and in sowing the soil with suitable seeds; but he has to struggle against the inroads of innumerable foes. He must take the insect life into account as a part of the economy of nature. What a strange inscrutable enemy is the potato bug to a certain industry. This insect has lived and grown and flourished in spite of all we can do. Picking him off the vines seems only to act as an incentive to his growth. He evidently holds Paris Green in contempt, and while for the time driven back by this poison, he holds his own until he triumphs in covering every green thing in the shape of potatoes with his presence. A Yankee philosopher says that once a stray potato seed found its way to a forest, and the moment a single leaf of this succulent appeared above ground, there was the familiar potato bug found sitting in solitary glory. Now, the husbandman has nothing for it but to search out this enemy. He must care for every plant. He must destroy the larvæ. He has to pick off the insects one by one. He must be instant in season and out of season with his Paris Green brush. It is the only way to overcome the enemy. Crying will do no good. Tears will accomplish nothing. Complaints end in smoke. He must resist the enemy's approach by careful watching. This is the case with every other foe of the agriculturist. Clouds of grasshoppers are found doing their disastrous work. Man must invent. He must overreach. It is necessary to undermine the enemy. The grasshopper plough is the result. It is a large sheet of iron covered with tar. Drawn by horses over the field, it compels the enemy to hop from his hiding-place. There is no help for it. He has to jump upon the tar. There he is caught by the million, and thus the destructive foe is brought under subjection. The potato bug must be met with similar inventions of genius. The true remedy has not yet been found. The Hessian fly up to this moment revels in his freedom. He roams over the crops at large. He must be met with counteracting forces. What is the solution of the problem? With what

advice can we comfort our agricultural friends? We know not, except it be this, that there is some bird of prey that is suited for this special work of destruction. Perhaps we have been too unfriendly to the feathered tribe. They have been too frequently shot down ruthlessly. There must be some bird that would have a particular liking for a dish of Hessian flies. What is the bird? That is for farmers to find out. What about trees? Have they not been too much cut down? Has the natural shelter of birds not been taken away? Has not an indiscriminate slaughter of the feathered tribe been going on? The Americans found the sparrow a sufficient enemy for the worm that was destroying all their green trees. May there not be a bird which we have driven away and that would take especial delight in dealing with the Hessian fly in much the same way as the Russians dealt with the Turks? These are serious questions. They require attention. The perfect balance of nature may have been foolishly destroyed. There is certainly some remedy. There is some way in which the balance of nature may be regained.

It is matter of rejoicing that notwithstanding the inroads of myriads of insects, there is yet left a crop which taken all in all will compare favorably with the harvests of many years back. The husbandman is now returning, bearing in place of the seed sown many sheaves with him. It is a time of universal gladness. The Lord is crowning the year with His goodness. There is plenty in the land. And while recuperation from dull times may yet be slow and uncertain, no reflective person can doubt that the crop of this year is destined to lay the foundations broad and deep of a universal prosperity. Let us thank God for it. To Him be all the praise.

EDUCATION IN SCOTLAND.

FROM the Fifth Annual Report of the Scottish Board of Education it appears that considerable progress has been made; that the provisions of the new Act have been pretty thoroughly carried out; and that as the result of the new system several changes have taken place for the better. The number of public schools in Scotland in 1876 was 2,430 and the number in 1877 was only 2,425. At the first glance this looks more like retrogression than progress; but by examining the report a little further we find that although the number of schools has diminished, the school accommodation has increased. The schools in existence in 1876 could accommodate only 380,215 pupils, while in 1877 there was room for 424,557. This is all accounted for by the policy of centralization upon which the Board has acted. Small and inefficient schools in cities, towns, and populous districts, have been abolished, giving place to large and properly graded schools, under the management of thoroughly qualified masters, and located in commodious and expensive buildings. This of itself is a vast improvement. It is of much greater benefit to a large village, or even a good-sized town, to have one school that is a school than to have half-a-dozen places where young men and women with scant education and no training "keep school" but do not teach. To have such places scattered about in such profusion as to be at