

by electric telegraph. By a comparison of statistical returns, it was shown that in proportion to population our increase from immigration is one-third greater than that of the United States, which with a population fifteen times, needs an immigration only ten-fold ours. In proportion to population, our increase from immigration between 1830 and 1850 has been five times that of the United States. Lectures were devoted to the growth of Upper Canada in its higher interests, those of an intellectual and spiritual character. In 1812, Canada had five newspapers, all in the Lower Province. Now it cannot have much under two hundred. A hundred and eighty, or a little above, would give us, in proportion to population, a supply equal to that of the United States, which have about 2500. Generally speaking our newspapers will compare favourably with those of our neighbours as to character. The number of our book-shops, with the extent of their stocks, and the books stored in libraries and found on tables, indicate a growing taste for reading. On all hands a growing interest is manifested in the subject of education. Our schools and school-masters and pupils are increasing rapidly. Salaries largely increased are being paid for education; the people in many parts voluntarily taxing themselves for it. The character of the education given is also improved. In numbers of places, too larger Schools are being introduced, with a number of qualified teachers, which admit of proper classification of pupils and division of labour on the part of masters. Schools of this sort have been seen by the lecturer in successful operation in Brantford and London. The Normal School is rendering the country great service; as is also the Chief Superintendent of Common Schools, by the diligence, singleness of purpose, and industry with which he is devoting himself to his noble employment. The number of Grammar Schools is also increasing, and the number of Mechanics Institutes. Now, too, the Provincial University, with its staff of well qualified Professors, to which addition is being made, offers its advantages to the youth of the country at a price little more than nominal. Trinity College, likewise, though a denominational institution, adds to the means of education in the higher departments. It is a fact specially cheering that the means of religious instruction and worship are increasing at a rate fully equal to the growth of the population. This was shown by comparison of the statistical returns of different periods. In civil arrangements and the application of correct principles to the government of the country, it is believed improvement will generally be admitted to be taking place.—Our municipal institutions are working, on the whole, satisfactorily—improving the country and educating the people. The past growth of the country, with its extent, its soil and climate, and the facilities for intercommunication afforded by its rivers and lakes, were next adverted to. Those he said, in connection with the character of its inhabitants, who were vindicated from the imputation of want of enterprise, afforded pledges of the future greatness of the country. The lecture closed with an exhortation to Canadians to do their duty towards the development of the resources of the country.

## Natural History.

### ICHNEUMON FLIES.

A merciful Providence has sent three species of *Ichneumon* flies to prevent the destructive operations of other insects upon our corn.—Those benefactors of our race, know how to introduce their eggs into the larvæ of the *cecidomyia*, which are within the glumes of the wheat. The most common of them is a small fly of the *Hymenopterous* order, originally called *Ichneumon tipulae*, but now goes by the name of *Platygaster tipulae*. The male fly is black, and the female is of a pithy color—both shine very much, but the former is not often met with. This *Ichneumon* has been observed by

some superficial entomologists, who mistook it for the parent of the larvæ found in the ear—consequently, it has been condemned as the origin of the very ill it is destined to diminish. This shows false reasoning in the absence of accurate investigation.—people should not make hasty conclusions when they happen to see two things together. Farmers have often concluded, that the little *Ichneumon* flies, they have seen upon the wheat, must have laid the eggs which produce the larvæ of the midge. Prejudice and hasty judgment lead to perpetual misconstructions as to things both moral and natural. This little *Platygaster* may be readily found on the glumes of the wheat-plants, in the months of July and August. It runs rapidly over the ears and seems to know well which are those occupied by the larvæ of the midge. The sight has been witnessed by the following experiment.—"A number of larvæ of the wheat-midge were put upon a piece of white paper, pretty near each other, and an *Ichneumon* was dropped amidst the group. The energy of her manner, the rapid vibrations of her antennæ, and the whole of her attitudes, were most amusing. On approaching one of the larvæ her agitation quickened to the utmost intensity; she soon bent her body in a slanting direction beneath her breast, applied her tail (ovipositor) to the larvæ, and, becoming still as death, sent forth her curious sheath and deposited her egg in the victim, which writhed considerably under the operation. If she came to one that had previously an egg in it, she left it in an instant, and sought another, for the *Platygaster* lays but one in each." Indeed it would take up too much space at present to lay before the reader, the labors of the *Ichneumon* flies. They are a division of the insects most useful to man, and we are indebted to the labors of the English entomologists for their attention and accurate observations of this strange and extensive class of the insect creation. In fact, it is impossible to contemplate the habits of the insect brought before our notice, without being deeply impressed with the omnipresence of the Being to whom all things owe their existence. The same Hand that spread the north over the empty space, and suspended the earth upon nothing, and keeps the stars in their courses, regulates the numbers, instincts, and uses, of the smallest living things, appearing equally perfect in all:—

"What less than wonders from the wonderful,  
What less than miracles from God can flow."

The other two *Ichneumons* are supposed to limit the increase of the *Platygaster tipulae*; one of them is said to oviposit in its eggs, the other in its maggots. Still, there are a great many species, opening a wide and curious field of inquiry for the entomologist. One of these extraordinary flies has an ovipositor, nearly thrice its own length; indeed, the instruments with which nature has furnished them are beautifully adapted for their useful work, and there could scarcely be conceived a more interesting subject for a separate treatise than that of their forms and habits, when properly investigated. It has been therefore, my design to show how carefully there is provided for by the goodness and wisdom of God, a natural antagonism to the disasters that would befall mankind from the unchecked multiplication of our insect enemies.

### AFFECTION OF THE WHALE FOR ITS YOUNG.

I have heard of one of these whales with a cub when driven into shoal water, being seen to swim around its young, and sometimes to embrace it with her fins, and roll over with it in the waves, evincing the tenderest maternal solicitude. Then, as if aware of the impending danger and peril of her inexperienced offspring, as the boat neared her, she would run round her calf in decreasing circles, and try to decoy it seaward, showing the utmost uneasiness and anxiety. Reckoning well that the calf once struck, the dam would never desert it, the only care of the harpooner was to get near enough to bury his tremendous weapon deep in its ribs, which was no sooner done than the poor

animal darted away with its anxious dam, taking out a hundred fathoms of line. It was but a little time, however, before being checked, and the barb lacerating its vitals, it turned on its back, and displaying its white belly on the surface of the water, it floated a motionless corpse. The huge dam, with an affecting maternal instinct more powerful than reason, never quitted the body, till a cruel harpoon entered her own sides, then, with a single flap of her tail, she cut in two one of the boats and took to flight; but returned soon, exhausted with loss of blood, to die by her calf, evidently in her last moments, more occupied with the preservation of her young than herself.—*The Whalerman's Adventures in the Southern Ocean.*

## Agriculture.

### POTATO ROT.

Mr. DeRotterdam has recently published, in the *Miner*, a statement respecting this plague, and what he believes to be a cure for it, supporting his opinion by the fact that, by his plan, he succeeded last year in saving 42 minutes of potatoes. He says "the potato rot proceeds from two causes—the first, the electric state of the atmosphere, under the influence of the temperature and hygrometry of the air, acting directly upon the exterior organs of the plants; and on the coloring matter which serves the plants to respire and absorb the gases, as well as to receive the action of the solar and atmospheric fluids." The plant having thus changed the nature of its primitive organs, elaborates juice no longer limpid, but more or less sticky, of olive green or olive brown color, according to its age. The disorganization of the coloring matter, as well as of the organs of exterior tissues, takes place on the stalk and branches at different heights, and these last become clogged with a kind of viscid juice of a yellowish or dirty green color, to which is owing the disagreeable odour which is perceptible in the plant completely under the influence of the disease. The healthy sap can no longer be elaborated, and finally, a hollow tube is formed in the centre of the stem, by which the sap, in a completely altered condition, descends and attacks the set, which then communicates the disease to all the roots. The second cause may be found in the too general use of fresh and unfermented manure, which, in consequence of its fermentation below the surface, operating irregularly by alkalis and acids, of some strength, acting on certain parts of the encased organs of the plant under the influence of electrical action, favours the formation of this kind of sap, which corrodes the tubercles."

After showing the probability of this latter cause Mr. DeRotterdam goes on to say:—

"The first sign of the disease is the change of the coloring matter; and the more the disease increases, the more does the stem become yellow, with brown spots, the leaves black and withered, the tube meantime goes through the entire stem to the root, and the viscid matter is already, perhaps, at the root of the plant. In this case, it is useless to hope to save the tubercles from complete destruction, for the set will have been already spoiled, and will have passed the germ of the disease to all the young tubercles, which may be marked by black spots in their insides. But my opinion is, that the tubercles so attacked may serve for seed, and produce healthy potatoes, provided in sowing them the precaution is taken of cutting out the injured part, which, if left would destroy the envelope in which is lodged the fecula, which has to be changed into the nutritive principle of the plant, and which being unable to produce any new germ would destroy the rest of the individual potato. I should, therefore, recommend to persons having their potatoes attached, to cut away the sick part, and to sow them immediately in land well prepared, in a pit, to the depth of not more than three inches; and I am convinced that the next year they would have as good a crop as usual. If the winter were severe without snow, the potatoes should be covered with manure, no