

The student of entomology discovers that all the larger insects are harmless to agriculture, but not to horticulture. The most destructive insects are all minute—cereal-flies and those attaching themselves to the grasses are very minute; onion and turnip-flies are also small; indeed, the eggs of any of these are not discernable to the naked eye, and I cannot discover among the insectivorous birds, one that takes them up as food.

If farmers would read and study more, and not overlook the minute creatures surrounding them, much of the losses of which they now complain would be avoided. The oat crop of the districts surrounding Quebec was this year attacked by an *aphis*; now, any person who has studied the natural history of these curious insects, and their peculiar mode of production, will at once understand how it is that they are so abundant, and might take steps to protect themselves against their ravages. I would here advise farmers to procure cheap publications on Natural History and what they cannot learn from them they will afterwards ascertain through experience.*

A number of insects prey on *Aphides*, amongst which I may mention the larvae of a lace-winged fly common in this vicinity. Two-winged or *Dipterous* flies feed on them, but the greatest enemy of the *Aphis* are the *Coxinellæ* or lady-birds, of which we have seven or eight species in Canada.—Taking the general view of this comparative subject, I am of opinion that the insects injurious to crops will be put down by insect parasites and low temperature, for it is a well established fact that high and low temperatures are anything but favourable to insect life. The State of New York employs a competent person, Mr. Asa Fitch, as a State Entomologist. He gives the following important caution, dated August 26, 1861:—

"Where a grain field has been infested with the *aphis*, no animal should be pastured upon the stubble of that field for three weeks after the harvest. The lady bugs, or lady birds, which gather in the grain fields to feed on the *aphis*, give out an acrid yellow juice from the joints of their bodies and legs on being handled or otherwise disturbed. This difficulty protects these useful insects from being devoured by birds or other carnivorous insects. And I can readily believe this may render these insects poisonous to any animal eating a number of them. Immediately after the grain is harvested I find these lady bugs so numerous on the stubble, and with their papæ having suspended from the leaves and stems of every weed growing among it, that it will be impossible for an animal to gather a mouthful of the herbage there without taking in some of them. Last Monday morning my neighbour, Alex. L. McNeill, of East Greenwich, turned his hogs into his oat field, the third day after it was cleared of the grain. The best hog in the herd became enormously swollen and died about noon, and others of them appearing to be stupid and unwell, they were immediately removed to other pasturage. I hear it also reported that some eight miles from here a span of horses turned into an oat field both died, swollen in the same manner."

SWALLOWS IN CANADA.†

In reference to the swallow, Mr. May says:—"We have several varieties of these birds; they are the harbingers of our loveliest season, although, as in England, a few stragglers appear here while the weather is rather severe. This fact gave rise to the proverb,—'One swallow does not make a summer.' One variety—the purple martin—is so much a favourite from its social habits, that many persons put up little boxes upon long poles, in their gardens, as an annual place of abode for these little wanderers.

"Almost the whole life of these birds is passed in the air: they commence their aerial evolutions at break of day, and continue until the dark curtain of night begins to gather around us.

"The swallow is frequently alluded to in the Holy Scriptures; and even from these casual notices we find that the inspired writers were well acquainted with the habits, migrations, &c., of these birds,—a fact worthy of note, since we know that the infidel asserts that the natural history of the bible is not correct.

"Nos. 2 and 3 both belong to the tribe *Fissirostres*,—nearly all of whose members feed upon the insect hordes whose ravages, if unchecked by the feathered tribe, would not only blight the prospects of the husbandman, but would in some countries absolutely drive both man and beast before them."

A late number of the *Leader* contains the following:—"The little swallows are always considered the harbingers of fine weather. When we see dozens of these birds playing about, on wing, getting

shed is a favourite place of resort, where it may be seen searching the bark and decayed wood for insects and their larvae.

Wilson says "We with pleasure rank this little bird among the farmer's friends, and trust our rural citizens will always recognize him as such."

I have no doubt that omnivorous and granivorous birds are oftener seen in cultivated fields and gardens than in the woods and prairies, from the fact that the promoters of agriculture, by multiplying their sources of subsistence also increases their numbers.

* A large variety of publications of this nature are kept at the Depository of the Educational Department Toronto, and are supplied to School and Municipal Libraries.

† See illustration (No. 8) on page 49 of this Number.

ready to take up their lodgings about the roofs of stores and houses, summer may then be looked for. Below are the dates at which swallows have been seen in the western part of Toronto for the past nine years:—

1854	April 11	1857	April 26	1860	April 19
1855	" 10	1858	" 16	1861	" 18
1856	" 17	1859	" 11	1862	" 17

ABSENCE OF THE SPARROW IN AMERICA.

The Hon. Grantley F. Berkeley, who a year or two ago visited the Western prairies to enjoy Buffalo hunting, states that the domestic or house-sparrow is not to be found in North America. When we consider that this bird is found in various parts of Europe, North and South, in North Africa, the Levant, the Himalaya mountains, and other parts of India, but is wanting in North America, it is not merely interesting, but highly suggestive, for it points to some climatic influence which may affect that peculiar species of the feathered class.*

THE SPARROW IN FRANCE.

A petition to the French Senate for the protection of little birds, says:—"Of the suspected little birds, the one that enjoys the worst character is the sparrow, so often pointed out as an impudent pilferer. Now, if the facts mentioned in the petitions are exact, according to the opinion of many this bird ought to stand much higher than he is reputed. In fact, it is stated that, a price having been set upon his head in Hungary and in Baden, this intelligent *proscrit* left those countries, but it was soon discovered that he alone could manfully contend against the cockroaches and the thousand winged insects of the lowland, and the very men who offered a price for his destruction offered a still higher price to introduce him again into the country. * * * It was a double expense—the ordinary punishment of hasty measures. Frederick the Great had also declared war against the sparrows, which did not respect his favourite fruit, the cherry. Naturally, the sparrows could not pretend to resist the conqueror of Austria, and they emigrated; but after two years not only were there no more cherries, but scarcely any other sort of fruit—the caterpillars ate them all up; and the great King, victor on so many fields of battle, was happy to sign peace at a cost of a few cherries with the reconciliated sparrows. Moreover, M. Florent Prévost has shown that, according to circumstances, insects form at least one half—often in a much larger proportion the food of the sparrow.—It is exclusively with insects that this bird feeds its young brood; behold a remarkable instance:—At Paris, where nevertheless, the fragments of our own food provide abundant aliment for the sparrow, two of those birds having made their nest on a terrace of the Rue Vivienne, the *elytres* (upper wings) of the cockroaches thrown out of the nest were collected; they numbered 1,400. Thus one little *menage* had destroyed 700 cockroaches to feed one single brood."

2. UTILITY OF BIRDS IN DEFENDING FARM CROPS AGAINST THE ATTACKS OF INSECTS.

The harvest this season in France, it is said, will fall much short of former averages; and one of the principal causes assigned is the increasing destruction of late years of the smaller kinds of birds, for the various forms of French cookery. It is well known that some kind of birds in particular feed on the larvae of insects, which if allowed to mature often prove injurious and sometimes destructive to the crops both of the farm and the garden. In matters of this kind nature has beneficially established a wise system of self adjustment and compensation, whose economy it is unwise and often fatally injurious to disturb. Rookeries in Europe have sometimes been complained of by the neighbouring farmers as the birds will devour sown grain unless prevented by artificial means. But in cases where rookeries have been broken up, the crops have in all cases been found to have been afterwards attacked by insects in an unprecedented degree, and in many instances the farmers have prayed for the restoration of these interesting and useful communities.

* Though we have not the house-sparrow here, we have several other species. Our first spring visitant is the song-sparrow (*Fringilla melodia*), which is noted for its melody and richness of voice. It is also of a social disposition. These birds frequently build their nests in the small shrubs in the Normal School grounds. About four or five years ago, a pair built their nest in a shrub in front of one of the windows: when the weather became warm the window was opened, and the female was at first very much disturbed; but it gradually became so accustomed to its exposed situation that it would allow persons to stand watching it when the window was opened.

The most familiar and domestic of these birds is the chipping sparrow (*Fringilla crumalis*). It builds in the trees in our gardens and streets, and picks up the crumbs in our yards and at our doors. Wilson says,—"I have known one of these birds attend regularly every day during a whole summer, while the family were at dinner, under a piazza fronting the garden, and pick up the crumbs that were thrown to him."