

"2. The study of science was our aid to *intelligent reading*. Under this topic he referred to interesting scientific articles bearing upon agriculture, but which were beyond the farmer who had no knowledge of science. Agriculture was becoming more scientific every day; consequently a knowledge of science became imperative in order to keep pace with the times, and understand what was written upon the subject.

"3. A knowledge of science should make *farm life interesting*. In discussing this some most instructive remarks were made, showing how in every-day life the farmer could gather some interesting information from the book of nature which lay continually open before him. The silent processes of nature at work in the fields of grain and pasture land became a source of thought—the soil at his feet recalled stories from the fragmentary volumes of the geological records of how and whence the soil came—the storm and sunshine reminded him of atmospheric changes, while simple and more complicated compounds on every side suggested a brain of thought with reference to agricultural chemistry.

"4. The practical importance of scientific knowledge. Concerning this, the speaker said that the observations already made might be looked upon by his hearers as more theoretical than otherwise—more the dreamings of an enthusiast than of any special value. What he was about to say was really practical, and of benefit to the farmer. He then proceeded to discuss some of the advantages that have been derived from the application of science to cattle-feeding and the use of fertilizers. Some most valuable information was given which could not fail to show that science is following a pathway which will ultimately lead to an immense amount of good to agriculturists.

"The lecturer concluded by strongly urging upon his hearers to direct the young in their studies in this direction. While some hope might be placed in the old, still the greatest was in those who were to succeed them in the race. Farmers' sons must not be contented with the knowledge of the three R's alone, but add to it something from the book of nature.

"At the close a vote of thanks was tendered the lecturer."

#### A WISE FARMER AND HIS WIFE.

The N. Y. Tribune gives the following brief synopsis of a lengthy sketch which recently appeared in the columns of the *Globe* :—

"Mr. and Mrs. J. B. Carpenter are a fore-handed, hale, well-kept couple—schoolmates in childhood—who began life with very small money capital, on land, for which they went in debt, in the township of Townsend, Canada, near Simcoe village. [It should be *town* of Simcoe.—Ed. R. C.] They have ten children and ten grandchildren; he, 'save for the iron-grey beard, would pass for in the forties,' instead of sixty-two; in her placid face there is absence of that worn look so common to farmers' wives. One secret of this pleasant condition is revealed by the *Toronto Globe*, and is not unconnected with provision for hired men in such a sensible manner as is mutually advantageous to both employer and employed:

"'How is the help accommodated?' 'Oh, there is where my way of farming is a pleasure. If I had to board men in the house I would not farm at all. I put up some cottages, and since have built others, and in them my men reside.' The force of labourers employed all the year round is five or six men, nearly always married, and often emigrants from the British Isles. They get \$200 a year, with house rent free, the right to keep a cow, and fuel free. Out of these wages many of the men employed by Mr. Carpenter have saved enough money to start on farms of their own. Several of them who came out as simple farm labourers are now prosperous freeholders, with the last vestige of their mortgages paid off. Under his system Mr. Carpenter is always able to get the best class of help, and, as the result of his long experience, he is fully convinced there is economy in it too."

Another item in the conduct of life that has given such agreeable results is equally worthy of thoughtful consideration:

"Mr. Carpenter prefers working with his brains and directing the labour of others to slaving with his own hands. Though himself of sinewy, tireless frame, he has never made a practice of rushing at the work after the manner of the ordinary farmer. He has husbanded his strength, and the result we now see in his possession of all his powers at an age when the average farmer is bent and bowed with toil."

Some of the minor points in Mr. Carpenter's practice, attention to which helped to win for him the gold medal given last year by the Provincial Agricultural Association to the owner of 'the best cultivated farm' in the surrounding group of counties, are thus stated:

"Not a weed was to be seen in the fence corners. The fields are large, and he thinks of making them larger. 'Why not dispense with fences altogether?' 'Well, I have a very great mind to do that. As you say, my system being already mainly a selling system, I might adopt it altogether. I know it would pay.' Getting over one of the fences the remark is made that the farm must have been newly fenced of late. 'No; all those rails were here when I came, and for how long before I cannot say; I have enough of cedar standing to fence the whole farm again.' And here he points out that every rail is laid so that the best surface to shed water is presented upward. How many farmers would take this minute care of the fences on 300 acres of land? There is a shed appropriated to implements, and every one of the farm tools has its proper place, where it is to be found, certain, when not in use. The floor of the cow stable is paved with cedar blocks, cut in six-inch sections and placed on end. If the blocks had been cut from small posts, Mr. Carpenter is satisfied it would have made a perfect floor, but as it is the sections were cut from logs eighteen inches and two feet in diam-

eter. The objection to such wide blocks is that they become slippery, and furnish no foothold for heavy and awkward animals."

#### THE LESSONS OF 1881.

Each year brings its lessons, and the one just past has been fruitful of instruction to observant and thoughtful minds. A correspondent of the *Country Gentleman*, writing on this theme, presents ideas equally suitable for Canadian readers, and we gladly avail ourselves of them, hoping they will be carefully pondered by all whose eye they may catch:—

"Farm work for the year is now so nearly concluded that we can review the labours of the season and note the result. In many respects the year 1881 has been a notable one to the farmers of this country, and it is certainly one which they will long remember. Drouth, wide-spread and more severe than ever before known, has shortened the crops, and, despite increased prices, has lessened the average profits of farmers. Yet the fact is undeniable that for some farmers, in some localities, the net gains the past season have been much greater than ever before. The fact is inaugurating a new era in American farming. For many years our people have supplied the markets of Europe with crops, not large as compared with European standards, but so cheaply grown that we could undersell much better farmers than ourselves. The effect of cheap and fertile lands has more than offset the benefits of thorough cultivation, not only in Europe but among ourselves. Farmers in the Eastern States who have had to feed stock, and in some cases purchase manures to keep up or increase the fertility of their land, have found it a policy of very doubtful profit, while their brother farmers in the newer States could draw on the apparently unlimited stores of fertility in the virgin soil. For years past we have had to sell crops at prices which we, on dearer lands, could not afford. Wheat at one dollar per bushel gives no profit on the average crop; but as long as western farmers could grow at eighty or ninety cents, their prices fixed those at which we had to sell. By the use of commercial fertilizers, many eastern farmers have learned how to grow twenty-five to forty bushels of wheat per acre, and this has enabled them to continue farming without loss, in the face of the most active western competition.

Now everything is changed. Prices of all products have largely advanced, and the farmers who have been working to make their land better are reaping the reward. The men who have aimed to cheaply cultivate large areas have for once been disappointed. I cannot doubt that the effect will be decidedly beneficial. We shall have in future better crops and better farming, higher manuring and more thorough culture. It is already certain that the increased demand for help will make farm labour dearer next season than it has been for two or three years past. It is the same with commercial and other fertilizers. More were used on wheat this fall than a year ago, and there is good prospect of a greater increase next spring. With prospective high prices, there is not only good but large pay in making the crops heavier. The addition of twenty to thirty cents a bushel for wheat is a stimulus to good farming which is all the more acceptable coming, as it has done, after several years of depressed prices. It will not lead to increased acreage except on the new lands of the far West, but to better cultivation of the areas usually cropped. Higher prices, with good crops everywhere, would have stimulated much larger planting with poorer culture; but we have learned the past year that only good farming certainly pays, and it is to be hoped that the lesson will remain as a compensating benefit for what might otherwise be reckoned a year of agricultural disasters."

#### SKETCHES OF CANADIAN WILD BIRDS.

BY WM. L. KELLS, LISTOWEL, ONT.

I begin these Sketches in Canadian ornithology with a description of such of our wild birds as, according to the Cuvierian system of classification, belong to the second order of the class *Aves*, for the following reasons: I have already given to the public, through other media, some account of our birds of prey, and a description of them now might not be so new and interesting to the general reader as those regarding which I am about to write. Neither does my knowledge of some species of the *Accipitres* enable me to discuss this part of the subject in the able manner that some Canadian naturalists have done who have written specially on "Our Birds of Prey."\* However, if time and circumstances permit, I may again review, and add to what I have already written on the first order of the feathered creation. And lastly, I may remark, that in the arrangement of these Sketches I will in general follow that of Cuvier, because I think it is the most simple and natural, and therefore will be the most acceptable to the majority of

\* I refer to Mr. H. G. Vennor of Montreal, Dr. Ross, etc.

readers, who little know or care how our feathered tribes may be arranged, or the causes that have led scientific investigators to separate or place them together, provided they obtain true descriptions, which latter object I shall try to aid them in accomplishing.

#### CLASS AVES—ORDER SECCND, PASSERINE.

This is the most numerous division of the bird tribes, embracing as it does all those which are neither Rapacious, Climbers, Gallinaceous, Waders nor Swimmers. Nevertheless, by comparing them, a strong mutual resemblance of structure is observable, so that it is in many cases difficult to establish the subdivisions, and in their general habits most of them exhibit the same traits of character. But few members of this order have the violence of the birds of prey, nor the fixed regimen and habits of the poultry and the water-frequenting species. A few of them resemble in their habits the Climbers and the Swimmers, but from these they are easily distinguished by the formation of their feet. They feed, in general, on insects, fruit, and grain, though some of them also prey on the young of other birds and small animals, as well as fish and reptiles. The formation of the bill of each genus indicates to the ornithologist the different kinds of food upon which they chiefly subsist. A short, stout bill shows a grain feeder; a long, slender bill, an insect hunter; while a strong, hooked beak indicates an approach to the birds of prey. The proportionate length of their wings, and their powers of flight, are also as varied as their habits. It is also among this order of birds that all our songsters are to be found, while the variation and beauty of plumage which they display exceeds that of all the other orders together. The different places selected for nesting purposes, the manner of constructing their nests, as well as the materials used, and the colour of their eggs, are in some cases widely diverse. While some frequent the garden and the vicinity of human habitations, as well as the streets of towns and cities, others seek the shelter of the wildest woods, or the deep solitude of some mountain glen, and while some species prefer to build their nests in the topmost boughs of lofty trees, and the crevices of high rocks, others place the cradle of their future progeny on the ground, or in boxes made by human hands. The eggs of most of these birds are spotted, or coloured, and larger at one end than at the other; and their young are hatched naked, and possess only sufficient strength to lift up their heads and open their mouths for the food with which they are well supplied by their affectionate parents. But in all, the shape of their nests and number of eggs, even though the former may be constructed of similar materials, and placed in similar positions, and though the eggs of many species may be of the same colour, so vary that the practised ornithologist may distinguish those of each bird by some difference in the formation of the nest, or some peculiarity of marking in the egg.

The feet of these birds are formed for perching, having two toes directed backward and two forward on each foot. Hence by some naturalists they are denominated *Insessores*, or *Perchers*. But while some genera, from early dawn till dusk of even, pass their time upon the wing, others remain much upon the ground; and while some move along by a series of hops, others walk; and though some species are destructive to the seeds and grain of the agriculturist, yet the greater part of them are useful in destroying the various insects which, if allowed to remain and increase, would soon render the summer months a season of torment and destroy the hopes of a harvest.

This order is divided by the Cuvierian system into five families, namely: *Dentirostres*, *Fissirostres*, *Conirostres*, *Tenuirostres*, and *Syndactylia*; and these are again subdivided into genera and