

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

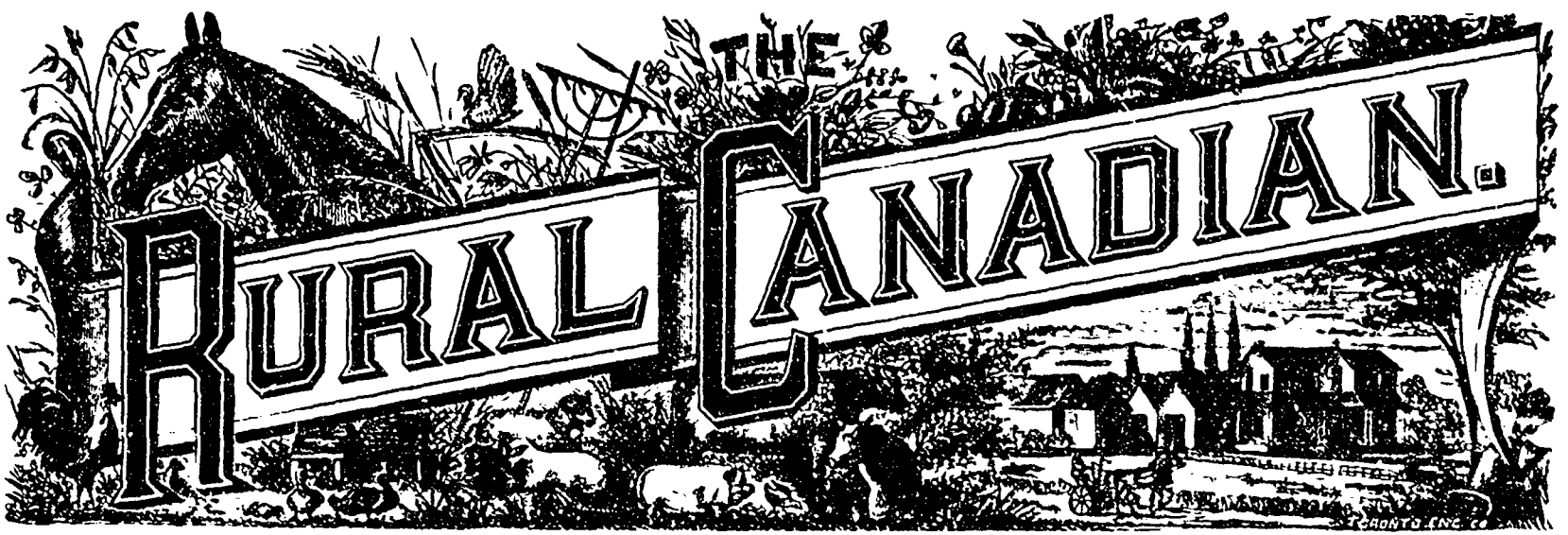
L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured covers/
Couverture de couleur
- Covers damaged/
Couverture endommagée
- Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée
- Cover title missing/
Le titre de couverture manque
- Coloured maps/
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur
- Bound with other material/
Relié avec d'autres documents
- Tight binding may cause shadows or distortion
along interior margin/
La reliure serrée peut causer de l'ombre ou de la
distorsion le long de la marge intérieure
- Blank leaves added during restoration may appear
within the text. Whenever possible, these have
been omitted from filming/
Il se peut que certaines pages blanches ajoutées
lors d'une restauration apparaissent dans le texte,
mais, lorsque cela était possible, ces pages n'ont
pas été filmées.
- Additional comments: /
Commentaires supplémentaires:

- Coloured pages/
Pages de couleur
 - Pages damaged/
Pages endommagées
 - Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
 - Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
 - Pages detached/
Pages détachées
 - Showthrough/
Transparence
 - Quality of print varies/
Qualité inégale de l'impression
 - Continuous pagination/
Pagination continue
 - Includes index(es)/
Comprend un (des) index
- Title on header taken from: /
Le titre de l'en-tête provient:
- Title page of issue/
Page de titre de la livraison
 - Caption of issue/
Titre de départ de la livraison
 - Masthead/
Générique (périodiques) de la livraison

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



Vol. I. No. 20.

Toronto, September 15th, 1882.

\$1 per annum, in advance.

RURAL NOTES.

THE longest line of fence in the world is in course of construction across the Texas Panhandle and into New Mexico, to stop cattle from wandering too far northward. The fence will be over 200 miles long.

ANOTHER new grape. This time it is the "Empire State," and of course "the best yet." But wise people will await its full trial before paying fancy prices for it. We have now a long list of thoroughly tested varieties.

HAY-DRYING machines, by means of which hay, damp when stacked, can be so aerated as to prevent its heating and mildewing, are coming into use in England, and should they prove generally practicable, will be a great boon to farmers in that moist climate.

THE prairie landscape has a beauty of its own. Sunrise and sunset are often very beautiful on the prairie. They remind you of sunrise and sunset at sea when the ocean is calm. But, after all, no landscape, however lovely, is complete without trees and water.

SCARCITY of timber is a serious drawback to a prairie country, and settlers are put to many shifts thereby. Even the tourist cannot fail to notice this, and to contrast the advantage of having this necessary of life—for such it is to a greater or less extent—in abundance.

THE *Canadian Farmer* offers a prize of \$10 for the best essay on "Wintering Bees in Canada." It will be a prize hard to award, for only the test of time can show who is the successful competitor. Many individual beekeepers would gladly give \$10 each for a sure method of wintering bees.

THE *Rural New Yorker* contains this orthodox bit of preaching, which it would be well if every minister would occasionally incorporate into a good practical discourse:—"If you sell a day's labour, and perform in the day what you could without extra exertion do in half a day, you have stolen the value of half a day's labour from your employer just as truly as if you had taken the same value in money from his purse."

SOME time since, in a view of the Manitoba Report of Agriculture, we pointed out the fact that from thirty to forty bushels of wheat per acre are exceptionally large crops in that country. The same is true of the Red River Valley and the Dakota wheat fields. It is questionable if,

even the present season, which has been particularly good, the wheat yield of Minnesota and Dakota will exceed an average of twenty bushels per acre.

It is astonishing how many people you meet with in Manitoba and the North-West, who, after "blowing" (as the slang phrase is) about the country generally, will draw you aside and tell you in a confidential whisper that "this is a fine country to make money in, but it is no country to live in." However this piece of honest confession may be interpreted, it should lead those who are "comfortably fixed" in the older provinces to "let well enough alone."

A CORRESPONDENT of the *Iowa Farmer* says he breaks up his prairie land with sheep. A large flock will pasture the wild grasses so closely that the roots will die, and the soil can be broken up with comparative ease. This is the way many meadows are ruined in this country and elsewhere. Sheep are allowed to crop them so closely that they kill the stock. What is good practice on a prairie doomed to the plough, is bad for land set apart for mowing purposes.

In many parts of the great North-West water is hard to find, and indifferent when found. In some cases it is undrinkable, through brackishness or other mineral admixture. Often rain-water would be a welcome recourse, but there are not sufficiently spacious roofs to collect it, nor suitable receptacles in which to keep it. This difficulty will be, to some extent, remedied in course of time. Still, it will always remain a desirable feature in one's lot to dwell in a land abounding in springs, rivers, and lakes.

THE "blizzard" is an institution peculiar to the prairies of the West and North-west. So opaque does the atmosphere become with the blinding snow, that people sometimes lose themselves between their houses and barns. To prevent this, it has become a common precaution in Minnesota to fasten a stretch of clothes-line between the house and barn, along which the way may be felt from one to the other when the air is thick with storm. These "blizzards" often arise with hardly a moment's warning.

In view of the astonishing figures that sometimes appear in connection with Jersey butter tests and records, a correspondent of the *Country Gentleman* suggests that there should be public instead of private trials. A significant hint, that while inquiry is instituted as to the diet of the cows, it is also important to know on what kind of *moral* food the owners have been brought

up. Meantime, he insists that all butter records should be ignored until the subject has been taken in hand by "some one in authority."

THE Huntingdon (Que.) *Gleaner* says:—"The largest cheese factories in the county are the Dundee and LaGuerre, owned by Mr. D. M. Macpherson. Of the latter we have got a few figures. The largest quantity of milk received by it has been 16,500 lbs; on one Monday morning several cans had to be refused. The present daily average is 11,000 lbs., furnished by 51 patrons, who have netted for the season so far 85 cents per 100 lbs. The sales for June were 9½c., 10½c., 11c., giving an average of 90 cents for that month. It has taken 10 pounds of milk to the pound of cheese. The cheese-maker is George Seeley, of Brockville, Ont.

AGAIN and again, during our recent trip to the North-West, we met with people who, pointing to the magnificent crops, and dilating on the wonderful resources of the land, would exclaim, "You can never exhaust the fertility of this soil." Any man who talks like that proclaims himself a fool, and shows his utter ignorance of the first principles of agriculture. There never was, and never will be, a soil on this earth that man cannot impoverish by a series of exhaustive crops. It is only a question of time, and a comparatively short time, too. Rich as the store may be and is, let successive wheat crops draw upon it year after year, and poverty will come upon the land "like an armed man."

In an early number of the *RURAL CANADIAN*, mention was made, in these first-page notes, of certain devices resorted to by farmers in the vicinity of Portage la Prairie to get rid of manure. Well, during the recent Press trip, we saw with our own eyes, and smelt with our own olfactories, during a drive in the suburbs of that town, piles of manure that had been set on fire with a view of getting them out of the way! The hay and straw in these heaps were slowly consuming, and the air was filled with a most unpleasant stench. This precious but despised material would have quietly bided its time, offending no one, if left untouched, and there is land enough to have spared it a resting-place; but the eagerness to get rid of it converted it into a nuisance, and thrust upon the attention of the Press party the reckless and ignorant improvidence with which those rich lands are being robbed of their fertility, while the material that might prolong their fruitfulness is wantonly destroyed. Truly the offence against good farming was "rank," and "smelt to heaven!"

FARM AND FIELD.

FARMYARD MANURE

At a meeting of the Central New York Farmers' Club, Daniel Bachelor, Esq., read from a lecture of J. B. Lawes, of England, as follows:—

I propose to show you what is the composition of farmyard dung; to what ingredients its fertilizing properties are due; why it is a bulky manure—by which I mean that much larger quantities of it must be used to produce the same amount of crop as would be used in artificial manures; to what its lasting properties are due; how it is enriched by the consumption of purchased food, and the connection between the manures made on the farm and those which are distinguished as artificial. A farm of 400 acres, cultivated on the usual four-course rotation, would produce from the consumption of its food and litter a quantity of dung which, in the ordinary state of moisture, would weigh 840 tons, or if we deduct the moisture, 252 tons. Of this, 640 tons will be contributed by the straw; of the whole dry matter of the dung, nearly four-fifths is straw. That straw must form the bulk of any yard of manure, is evident from the fact that by far the largest part of all foods consumed is either fixed in the animal or passes off in respiration. Of the better sorts of food, not more than one-fourth or one-fifth finds its way to the manure pile. Of a ton of this manure the total dry matter is not more than six hundredweight, and of the selected constituents needful to plant life there is only eleven pounds of potash, eight of phosphoric acid, reckoned as phosphate of lime, and twelve of nitrogen, making, of the three, but thirty-one pounds. Dr. Voelcker shows us that by far the largest part of the ingredients of dung are in an

INSOLUBLE STATE

—that is to say, in a state in which plants cannot feed upon them until they have undergone further change. I mentioned that nearly four-fifths of barnyard manure consists of straw. The influence of straw as a manure cannot be left out, therefore, of our estimates. Of two half acres of permanent pasture at Rothamsted the same quantity of chemical salts was applied every year, one receiving in addition 2,000 pounds of finely cut wheat straw. It was not till eight years after the first application that the influence of the straw upon the crop became perceptible. Since that the effect has been continuous, and the increase of the hay due to the straw has been for the last ten years equal to 1,100 cwt. per annum. On another part of the same pasture farms, dung was applied for eight years in succession, a hay crop being removed each year. Since the last application of dung thirteen crops of hay have been taken, and it appears probable, as the last crop gave seven hundredweight of hay due to the unexhausted dung, that several years elapse before all further influence of the dung ceases. Mr. Lawes goes on to show that it seems likely that that man had a glimpse of the great truth who said the time would come when the farmer would take his manure out to his field in his coat pocket, and be in no danger, as the witty man replied, of bringing back his crop in his waistcoat pocket.

OUR CROPS,

he said, generally contain from ninety to ninety-five per cent. of organic matter—that is, carbon, hydrogen, nitrogen, and such elements, in that form, that is, that part of the crop, which, if you would burn it, would disappear into the atmosphere. When we increase a crop by means of a manure such as salt of ammonia or nitrate of soda, which contains no organic matter, do we merely enable the plant to take up that which had been

previously supplied in the yard manure? No. On a field of fourteen acres, which as a whole has received no dung for thirty six years, the yield of straw and grain has been larger on that part which has had the chemical salts than on that which has had an ample supply of dung. You see, therefore, that the evidence is very strong for organic matter being taken from the atmosphere. In fact, if I wish to grow the largest possible crop, say of grass, without any reference to the cost, I should carefully avoid applying any manure containing any organic matter. The use of

ORGANIC MATTER

in manures appears to be chiefly to make the land work better, and in absorbing and retaining moisture. So many are disposed to attach a mysterious value to the excrements of animals, and to think that some special properties are imparted to these in the transformation of food through the body of the animal, that I fear they will not readily accept the idea that the manuring properties of dung are confined to the chemical salts which it contains. It must be borne in mind that experimental fields receive no dung, nor does any animal enter them except the horses which cultivate them and carry off the crop. Unless, therefore, the plants can thrive on chemical salts, they could not be there.

SUMMARIZING

his whole lecture in its closing sentences, Mr. Lawes says: The following conclusions will sum up what I have placed before you:

1. That a superphosphate has given a considerable increase to each crop of a rotation, although used without any other manure, for a period of thirty years.
2. That in consequence of grain containing large quantities of nitrogen and phosphoric acid, and all quantities of potash, manures containing soluble nitrogen, as ammonia or nitric acid, are specially applicable to these crops.
3. That when crops containing large quantities of potash, such as roots, potatoes and hay, are sold off the farm, manures containing potash, such as purchased dung, appear to be more suitable.
4. That although potash, phosphoric acid and nitrogen are the chief manure ingredients in farmyard dung, the manure from artificial foods and in artificial manures, still the differences in form with which these substances are met greatly affect their value. The present method of analyzing manures does not properly recognize these distinctions, and the valuations founded upon these analyses are altogether false and erroneous.

SUCCESS OR FAILURE ON THE FARM.

Good farming is not by any means on the side of the majority yet, and even the best must prosper from slow gains. The unthrifty sort, on the other hand, fail, usually, from a succession of bad judgments and small losses. I can think of no business where an alert intelligence is so needful as in farming. For you must do a great many things not only well, but at just the right moment, to succeed with your crop.

A too early or too late planting, an untimely harvest, a neglect to cultivate perfectly, and a too easy toleration of weeds are only a few of the factors that make for failure or success. The truth is, the carrying of an important crop through, from the seed-sowing to the granary or cellar, requires a larger series of delicate and exact conditions to be accurately complied with than does any chemical process. You may do every part of the labour perfectly, yet fail in fertilization or in the selection of the soil. You may

raise, in fact, a good crop, and still fail because there is no market for it.

Perhaps the unthrifty farmer has raised a good crop, which is in demand; but he loses it because of poor fences and gates that have been left open for his own or his neighbours' stock to ravage it. He may put good hay in a stack, and yet have the stack so poorly made that the weather undoes all the benefits of his previous success. If he stores it in the barn, it may be fed out with such ill-judgment and slovenliness that great waste ensues; or he may keep his stock so poorly housed that no care in feeding will avail him. The ways of unthrift are innumerable, and find their opportunities for partial or perfect failure at all seasons of the year.

To know just what to raise, or what line to pursue in a given locality, is always more or less of a problem which the wisest must grapple with. It cannot be put into a perennial precept, but must be ascertained at different periods by actual experience, or by shrewd foresight and experiment. There are certain crops, such as hops, broom corn, tobacco and beans, which undergo great fluctuations in prices. One year one of these crops will be very profitable from the high price it commands, and another year you may raise it at a loss or to no profit. One cannot foretell with absolute certainty; but the farmer who experiments with them must at least have his eyes wide open. If the farmer, indeed, shuts his eyes at any time except when he goes to bed he can easily wake up to some important loss.

One of the small leaks—which is not so small, either, when the aggregate of damage from it is summed up—occurs from a lack of care of the tools and implements on the farm. The spade is left in the trench, the crow-bar and chains on the ground, the saw on the wooden horse, and the like. Some farmers leave their waggons and carts employed for farm use exposed to the weather the year round. It is not uncommon in riding through the country to see a horse-rake or mowing-machine standing outside in the fall in the very swath where it was used in July.

A quaint old gentleman in our town, who used to add to his small farming the successful manufacture of grain-cradles, said that when he travelled with his wares he always liked to pass the houses of those farmers who hung their scythes and cradles on some yard-door tree, for he was sure then that the merchants in that locality would have frequent need to purchase his goods. A farmer might possibly afford to lose one scythe or cradle a year in this way, but if he is guilty of this shiftlessness he will commit others too. Every farmer must depend, too, more or less on hired help, and one single fault of this character will prove more contagious to hired men and boys than a dozen of the sturdiest virtues.

It is the careful farmer whom Emerson has in mind when he says that "the farmer's office is precise and important. . . . He represents continuous hard labour, year in, year out, and small gains. He is a slow person, timed to nature, and not to city watches." He must not only "wait for his crops to grow," and have patience with "the delays of wind and sun," delays of the season, bad weather, etc., but he must employ endless resources of forethought and calculation, and never relax an unwearied care and vigil. It is just in proportion as he heeds these things that he meets with success or failure in his vocation.

—Joel Benton.

EFFECT OF UNDERDRAINS.

The thermometer, since the new year, has been down to within six or eight degrees of zero, but fortunately for wheat, a fall of snow the last of December and first of January protects the

plants from the worst injury. The ground, however, is so full of water that underdrained fields must suffer considerably. I have been interested in noticing how far the outlet of a deep drain will continue unfrozen, even in the coldest weather. The second of January, when the thermometer stood at eight degrees above zero in the morning, I visited one drain whose outlet was only a two-inch tile, where the water was unfrozen three rods below the mouth of the drain. Another larger and deeper drain held its current unfrozen below the mouth at least ten rods. This was of stone, and the water at the outlet was as pure as from a spring, and comparatively warm. This fact shows how much heat is still retained in the subsoil, despite, or rather, perhaps, because of long-continued rains. We have had neither heavy snows nor severe cold to chill the earth in this section as yet, and no large body of water has yet frozen over. So much rain has fallen that it is fair to presume we shall have less than the usual amount of snow, and without snow we cannot have, this side the great lakes, much long-continued cold weather. But these rains are scarcely less injurious to winter grain than severe cold. They saturate the ground, and where there is no underdraining the water must remain around the roots, chilling and rotting them until spring sunshine brings some relief. It is just here that the underdrain does its most efficient work, removing water that would otherwise be stagnant around the roots of the wheat plant.

PLOUGHING UNDER CLOVER.

A New York State correspondent writes to the *Country Gentleman*. "Ploughing clover for wheat is still largely practised in this section, with the difference that now the top is mostly cut off and saved for hay, and only the roots, with what foliage cannot be mowed, turned under. One fact about the recently cut clover hay may not generally be known. It is that so long as the clover is standing the soil will be as hard as a brick, and almost unploughable; but if ploughed within three or four days after the clover has been removed, the soil will turn up with comparative ease. I have noticed two instances of this within the last month, and it is a fact which I have never before seen recorded. That the mass of clover foliage should dry the soil rapidly is not strange. The inexplicable part of it is that after this foliage has been removed, without any rain, the soil should become friable and comparatively moist. It may be that the process of drawing water from the subsoil, which with full foliage is at once evaporated, goes on with little interruption for a time after the foliage is removed. The surface roots will thus be made very sappy, just as the sap exudes from the stumps of vigorous trees cut in spring after the flow of sap has begun. Probably the effect in helping the ploughing by removing the summer foliage, would not be the same with plants not having the long deep roots of clover. The experiments of Voelcker have shown that clover makes the best preparation for wheat after the second crop of hay is removed. The soil is then richer in fertilizing material than at any previous stage of clover growth. It is its beneficial effects on the subsoil that makes clover so good a preparation for wheat. Other forage plants, with roots near the surface, are of little value."

MAKING HEAVY SOILS LIGHT.

The *Country Gentleman* says that the first thing to do in all cases, in rendering heavy soil light, is to tile-drain it thoroughly, and if the drains are laid only a rod apart, the land will dry sooner and become more friable than if two rods

apart. The next thing, the best by far, is to apply coarse sand copiously, if it can be procured, and work it well in by ploughing and harrowing. The sand remains, and does not leach, wash away, or evaporate. We have garden soil, originally clayey and heavy, made comparatively light by adding two inches of sand, and it is as good now as twenty years ago, or after the application of the sand. Coal ashes on many heavy soils has little effect one way or the other; it may improve some soils. For spreading evenly, it should of course be dry enough to work into powder. The quantity of wood ashes which it would be proper to apply would not perceptibly affect the texture of the soil.

THE COMPOST HEAP.

The *Massachusetts Ploughman* among other things talks suggestively about the compost heap, saying that it is a good plan to have one for the benefit of the farm. The compost heap may be made of road scrapings, the scourings of ditches, the cleanings of ponds, clippings from banks and hedgerows, scrapings and sweepings of farm-yards; garden refuse, house refuse, and indeed all sorts of rubbish may be added to a compost heap. Even weeds will decay, and then help to swell the material for enriching the land. The heap should occasionally be covered over with a layer of lime, and a layer of salt now and then is also a good addition. These materials are beneficial in themselves, and keep weeds from seeding on the top of the heap. The compost should be turned over from time to time, and when well mixed, the land may be dressed with it either in spring or autumn.

REDUCING BONES.

Dr. Nichols gives the following exact figures of the quantities used in reducing bones with ashes:—Break 100 pounds of bones into small fragments and pack them in a tight cask or box with 100 pounds of good wood ashes, which have been previously mixed with 25 pounds of dry, water-slaked lime, and 12 pounds of powdered sal-soda. Twenty gallons of water will saturate the mass, and more may be added as required. In two or three weeks the bones will be soft enough to turn out on the barn floor and mixed with two bushels of good soil.

It is better to leave the piano behind in starting to the west; take a harvester instead.

Those who use lime as a fertilizer apply from ten to fifty bushels to the acre; ashes may be applied at the same rate, salt at the rate of 200 to 400 pounds, and plaster at the rate of 100 pounds.

A CORRESPONDENT of the *Canadian Horticulturist* reports that he has several black walnut trees, two feet in circumference, whose age is twelve years. From this, the profit of making plantations of this valuable timber tree can be calculated.

THE successful farmer is the reading one in nine cases out of ten. It is only by reading that one can keep up with the times in which we live. It has been aptly said that an agricultural community without books and papers relating to farming is like a ship at sea without rudder or compass.

ECONOMY in general management cannot be attained, and habitually practised, unless a man understands, even to the nail's breadth, the particular departments of his business. This particular knowledge can only be acquired on a farm step by step and day by day as the working of the farm goes on. The ornamental farmer, like the ornamental manager or director in commercial affairs, is a complete failure.

CURRENT NEWS ITEMS.

THE blackbirds are flocking a month earlier than usual this year. This is considered by those familiar with the habits of the birds as a sign of an early fall.

A SUCCESSOR of Benjamin Franklin gives us this. "The idea of teaching every girl to thump a piano, and every boy to be a book-keeper, will make potatoes \$5 a bushel in twenty years."

A CATTLE driver named Doyle was victimized to the tune of \$740 by a confidence man whom he recently met at the Union Station, Toronto. He advanced the above sum on a worthless cheque for \$1,900.

THE Beetroot Sugar Factory at Berthier was sold by auction a few days since for \$60,000, the purchasers being Messrs. A. Q. Prévost, Jacques Grénier, J. O. Lafrenière, S. St. Onge, D. L. Bessette, Louis Tranchemontagne, A. Masson, and Wm. Cowie.

MR. WALTER THOMSON, grain dealer, of Mitchell, has leased from Mr. Joseph Kidd, of Dublin, his grist mill and warehouses, with a view to making Dublin a wheat market. Mr. Thomson is also thinking of re-opening his oatmeal mill in the town of Seaforth.

NOTWITHSTANDING the wet harvest weather, the wheat and other grain in the county of Kent and adjoining counties has been pretty well saved, with a larger than average yield, particularly wheat. The apple crop will be very light in that section this season.

THE *Independent* says that the latest addition to Mr. Boyd's Big Island Stock Farm is a thoroughbred Clydesdale horse, recently imported. It is an exceedingly fine animal, and is just the class of horse for crossing with the stock of the neighbourhood, and raising beasts suitable for the export market.

FINAL arrangements have been made for the transportation and subsequent exhibition of Manitoba products at the Provincial Exhibition at Kingstons. The Canada Pacific Railway Company have given a baggage car for the transport of the exhibits, which will be taken through direct with an express train.

THE *Lindsay Post* is responsible for the following item: "On the farm of Mr. J. McGee, Emily, James Fleming and John McGee bound wheat after a reaper which cut 8½ acres from 1 o'clock p.m. till sundown, and could repeat the same work the next day. One of the binders cradled around the field before the reaper, which was driven by James Mackie. The crop was an average one."

THE citizens of Mitchell, feeling benefited by a healthy competition on their grain market, have formed a joint stock company for the purpose of erecting a warehouse and elevator, with a view to maintaining a third buyer on the market. The preliminary steps have been taken, and the contract for the building let, with every prospect of its completion in time for the fall trade, which promises to be very large this season. A large number of the farmers in the immediate vicinity of the town have been compelled to thrash their early crops to make room for the late ones, while from all sections of the country come most cheering reports of the yield.

A FAMOUS north-country clergyman, whilst preaching a few Sundays since from the text, "He giveth His beloved sleep," stopped in the middle of his discourse, gazed upon his slumbering congregation, and said: "Brethren, it is hard to realize the unbounded love which the Lord appears to have for a large portion of my present auditory!"—*London Life*.

GARDEN AND ORCHARD.

INSECTS INJURIOUS TO THE APPLE.—

(Concluded.)

Of the Canker Worm, Mr. Saunders says:—

"There are two species of canker-worms which, until late years, have been confounded with each other. One species produces a moth late in autumn, and the other partly in autumn but chiefly in the following spring. There are perceptible differences in their larval and moth characteristics which are sufficient to establish them as distinct, but as their habits are precisely similar we can speak of the two species as one.

"After severe weather, when it might have been expected that almost all insect life would be destroyed, especially anything so delicate in structure as these moths are, they may be met with in the woods flying about in all directions. They seem, in fact, to require a great amount of cold to fully develop them. The females of both species are without wings, the male only possessing powers of flight. The female is very much like the female *Orgyia*, being a spider-like creature, with six long legs, and a large body thickly clothed with scales. She is very unattractive in appearance, while the male is a very beautiful insect indeed. After copulation the female climbs up the tree, and deposits her eggs usually on the twigs. The larvae are hatched out in the spring, and quite early in the summer attain their growth. Their method of walking is by 'looping' their bodies, viz., by drawing the hinder feet close to the fore feet, again extending the latter, and so on. They are prettily striped with yellow and brown. After attaining its full growth—late in June, or early in July—the insect descends to the earth and forms a chrysalis, which remains undeveloped until the advent of the cold season, when the moth breaks through and escapes to perpetuate its species. This insect has been very troublesome in many parts of the United States, attacking not only the apple tree, but several varieties of shade trees, particularly the elm" (see Figs. 38, 39, 40 and 41).

As to remedies, Mr. Saunders says:—

"Various means have been resorted to to prevent the female from climbing up the trees and depositing her eggs. Strips of tin or zinc have been fastened about the tree, about three inches wide and sloping downwards, like an inverted funnel, so that the insect could not surmount them; also bandages of cotton and other fabrics, daubed with tar, have been used with the same end in view, and by these means the trees have, in many instances, been saved from serious damage. I have not had much opportunity of judging whether the English sparrow has had any effect in reducing the number of these insects, but I am of opinion that it has not."

The beautiful Cecropia Emperor Moth appears during the month of June, and deposits her eggs singly on the apple tree (see Fig. 42). The

subsequent history of the insect is thus described by Mr. Saunders:—

"These, during the next five or six weeks, hatch into caterpillars, which finally grow to be three or four inches long, and about as thick as a man's finger or a little thicker. They are green in colour, and are covered with warts; those on the top of the anterior segments are large and of a coral red colour, the remainder are yellow, excepting those on the second and hinder segments, which, in common with the smaller ones along the sides, are blue (see Fig. 43). Early in the autumn the larva spins its strong silken cocoon, perhaps three inches in length, inside of which it changes to a chrysalis and remains dur-

thus at times seriously injuring the tree's growth. Hand picking appears to be the only artificial remedy.

The Codling Worm (*Carpocapsa pomonella*)—see Fig. 45—which makes its attacks directly on the fruit, is perhaps the most serious of the pests infesting the apple. Every apple grower and almost every apple consumer knows something of its ravages. The witnesses in the fruit department of the late inquiry were one and all complainants against this insect, of whose habits Mr. Saunders gives the following description:—

"It is a European importation, and a pest which

causes the loss of many thousand dollars' worth of fruit every year. The moth is on the wing quite early in the season, about the time the apple trees are in blossom, and as soon as the fruit is formed, or almost before it is formed, the insect deposits her eggs in the upper end of the apple blossom. These eggs are soon hatched into young larvae, which penetrate into the growing fruit, and mature there when the fruit is about half grown. At that time we notice a great many apples fall from the trees. These are brought down from the effect of the presence of the larvae. The irritation set up in the fruit by them, brings on premature ripeness, and consequent falling from the tree. This half-grown fruit is, of course, useless for any purpose, but the fact of its falling to the ground sometimes has a beneficial effect upon the remainder of the crop, which thereupon receives a greater proportion of the juices of the tree, and thus has a better chance of reaching full size before maturity. The larva sometimes leaves the fruit before it falls, and crawls down the tree looking for a sheltered spot in which to spin its cocoon. Sometimes it falls to the earth with the apple, and in that case it generally ascends the trunk of the tree in search of a proper hiding place in which to go into chrysalis. This habit the larva has of seeking for a sheltered place, in which to spend the inactive stage

of its existence, has suggested a very useful remedy for counteracting its ravages."

The remedy suggested is as follows:—

"By tying, about the middle of the trunk, a bandage of old cotton cloth, or even paper, a suitable hiding place is presented to the larva, which at once makes use of it by entering in and going into chrysalis there. If the bandage is applied to a tree on which there is a good crop of fruit, and tied in the middle, I have found, as a rule, that there will be as many or even more larvae above the string than below, showing that a large proportion of them leave the fruit before it drops and crawl down the tree. The insect remains, during the summer months, about ten or twelve days or sometimes a fortnight in the chrysalis state, and the bandages ought to be examined once a week, so as to make sure that none escape. In this way a very large number of pupae may be collected, and the trees preserved, in a great measure, from the visitation of a second brood, which otherwise would be shortly hatched."

The insect, if allowed to escape from its chry-

CANKER WORMS.



Fig. 38.



Fig. 40.



Fig. 39.



Fig. 41.

Fig. 38 shows the larva and egg, and Fig. 39 the moths, male and female, of *vernata*, the spring form; while Figs. 40 and 41 represent similar stages of the autumn insect.

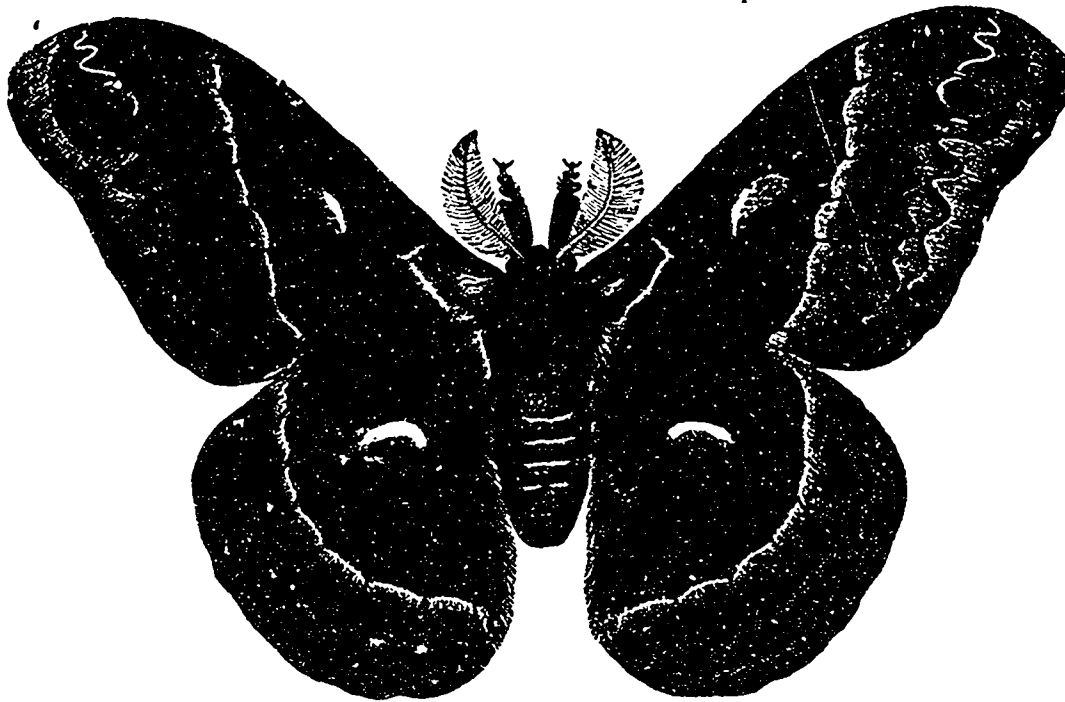
CECROPIA EMPEROR MOTH—*Samia cecropia*.

Fig. 42.

ing the winter (see Fig. 44), developing the moth the following season, about the beginning of June."

The Cecropia is found also on the European alder as well as on the plum, currant and lilac, although it prefers the apple. Parasites keep it in check, and Mr. Brodie mentions that in 1861 he collected in Whitchurch over a hundred Cecropia cocoons, only three of which were living, the others having been punctured by wood peckers.

The Rascal Leaf Crumpler (*Phycita nebulo*) is described by Mr. Saunders as "constructing a rather dead-looking case, not unlike a horn in shape, in which it passes the winter in the caterpillar state, and from which it makes its exit in spring, using the case as a place of retreat, travelling out in search of food, and returning to it when it has eaten sufficient to satisfy itself" by gnawing the bark of the twigs early in the spring,

salis state in the summer, produces a second brood, and this often so late in the fall as to remain in the fruit when it ripens, and is either pulled or falls from the tree. In either case the immediate gathering up of all infested fruit, and its consignment to pigs or its disposal in such a manner as to destroy the worms, is most important, but Mr. Saunders inclines to the belief that, if the plan he suggests were carefully adopted in every instance, the worms would be so diminished in numbers as to be comparatively harmless in the following season, and ultimately nearly got rid of. But, where the orchards of different persons are contiguous, common action is necessary, or any one idle orchardist may re-stock his neighbour's trees, in spite of their precautions. In shipping apples, the utmost care should be taken to reject wormy fruit, as one or two infested specimens may discredit the whole barrelful.

Mr. Beadle does not, in his evidence, say much for the vigilance of many of our fruit growers in regard to the Codling Worm. He says:—

"Our orchardists have not yet learned a way of fighting the Codling Moth. It is so small, and does its work so secretly, that it is not found out until the apples are ruined. I don't know of any one who has adopted a persistent course to get rid of it. There have been attempts, to a limited extent, to trap the larvæ by bandages. I am satisfied from experiments by myself and others that they can be trapped by placing bands of paper or woollen cloth around the tree; into these the larvæ will go to change to the chrysalis state. The bands should be examined every week or ten days. I have been told that by placing shingles, fastened together in pairs, so close that they almost touch each other about the tree, the insects may be caught, as they will creep between them in search of a hiding-place. Some people accomplish the same object by putting bits of rag at the foot of the tree on the ground. By some or all of these means I believe their numbers could be greatly reduced, if there was a combined effort by orchardists to do it."

Mr. Charles Arnold says of this pest:—

"The Codling Worm is very destructive. Bands of paper or cotton batting or old cloth, tied around the trunks of the trees, and untied every week or so, are the best means of catching the larvæ and preventing the moths. Generally we take several thicknesses of paper, so as to give them a good hiding place. If that remedy was generally adopted by fruit growers, I am satisfied the moth could be kept under. It is a blessing for us that some years we have no apples, as then we are able to get rid of the moth. The bandages I have spoken of would need to be examined every week during the summer. I know of no other remedy for them, though I have heard of a great many."

Mr. Allan, of Goderich, who complains that the Codling Worm is becoming more destructive every year, mentions that some of the orchardists in his district, in addition to the rag or paper bandage remedy, light fires under the trees at night, which attract the moths to their destruction.—*Report of the Ontario Agricultural Commission.*

A COLLECTOR of antique furniture was hunting through the auction shops the other day for a "signal service bureau."

RASPBERRIES AND BLACKBERRIES.

They do best on a good soil with a dry bottom; and on a deep, rather rich soil, they will be less affected by drouth than on a shallow soil. Both gravelly and clayey loams answer well under good management. The distance may vary with garden or with field culture, the former being nearer. Raspberries may be set in rows five feet apart, and two or three feet in the row; blackberries one-third further. The distance may be greater on quite rich than on poor soils. A strong grower, like the Rochelle blackberry, should have

CATERPILLAR OF CECROPIA EMPEROR MOTH.

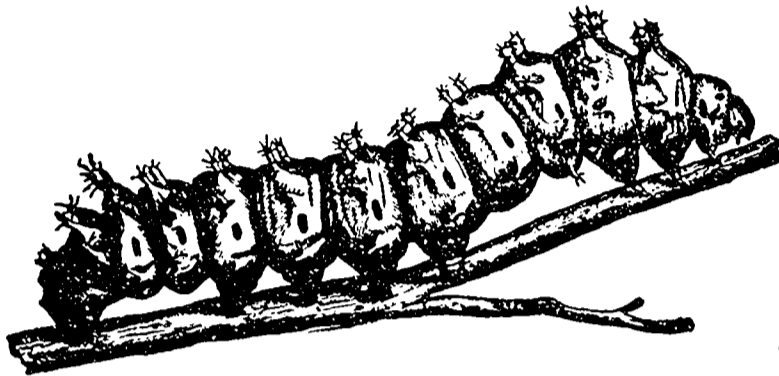


Fig. 43

COCOON OF CECROPIA.



Fig. 44.

THE CODLING WORM.

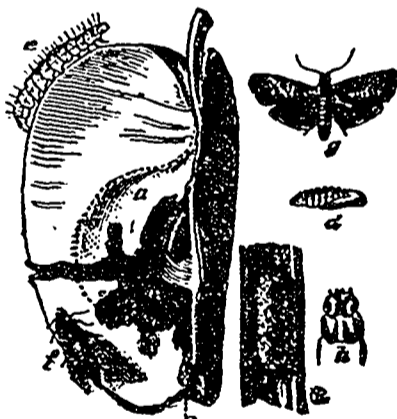


Fig. 45.

In Fig. 45, f and g represent the moth with the wings closed and expanded, c the larva, and d the chrysalis.

more room than a more moderate grower, as the Snyder. If blackberries are well pinched back they will occupy much less space than if allowed a straggling growth. The required care consists in good, clean culture, hoeing off the suckers as soon as they appear, and pinching back when two or three feet high. Good varieties of the raspberry are Guthbert, Turner, and Philadelphia, among hardy red sorts; and Gregg, Doolittle, and Davison's Thornless, among black-caps.

A SANDY GARDEN.

MR. EDITOR,—I have a vegetable garden, soil of dry sand. What is the best way to improve it so that it may give a fair yield? At present it is too dry and light to pay working. Everything burns up in it. An answer will oblige.

Perth, Sept. 4th, 1882.

J. M. W.

[Add clay if it can be got, and plenty of rich, fine, well-rotted manure.—Ed. R. C.]

LOWLAND ORCHARDS.

A reader quotes a statement in a western journal, and asks us to account for the occurrence mentioned. An orchard was planted on inclined or sloping ground. The trees on the lower portion were much injured by last winter and some of them killed. Higher up they were less injured, and at the top scarcely at all. Another orchard on the top of a hill was not injured at all. The inquiry is, what caused this difference? We have explained it on former occasions. The cold air on still, sharp nights settles down into low places, so that a thermometer will show several degrees difference between low valleys on still nights and the hills above. The valleys are sheltered from wind, and the still air sinks lower by radiation. A third cause is in the soil. The rich, mucky soil of valleys radiates heat more freely than compact soil, and becomes colder. A fourth reason, and not the least, is the more rank, succulent and long-continued growth of trees in rich valleys, so that they do not ripen the wood in time to become compact and hardy. We have seen the vines in a vineyard which was partly hard upland and partly low and rich land. The vines grew too rapidly and long on the low portions, and were injured or killed; on the upland, the wood ripened perfectly and they escaped.

GATHERING HERBS.

Herbs for winter use should be gathered when the plants are in flower; just as the flowers begin to fade is considered to be the best time to harvest them. The herb garden was formerly of greater domestic importance than it is in these days of patent medicines, but whether this change is an advantage to health may well be questioned. To dry herbs, it is best to tie them in small bundles and hang them up in an airy shed.—*Washington Tribune.*

In saving flower seeds for planting, always select the most perfectly developed. Throw away all poor ones. It is only good seed that produces good results.

TEACH your children not to annoy or maltreat the toad. Try rather to coax him to your garden. He will destroy many insects.

By striking your verbenæ plants early in autumn, and putting them first into small pots and then into larger as soon as the roots have reached the sides, and keeping them in vigorous growth, pinching back the leading shoots and nipping off every flower head, the verbenæ may be made to bloom in the window all winter.

W. H. S. CLEVELAND, in his excellent paper on Native Forests, says: "I have seen during the past winter a great many very large, fine trees planted on the best avenue in Chicago, at a cost of certainly not less than fifty dollars each, from the trunks and large limbs of which all the rough bark had been carefully scraped, leaving only a thin, smooth covering over the inner tissues. The effect of thus suddenly admitting the sun and wind upon them is the same as exposing any portion of the human skin heretofore clothed."

HORSES AND CATTLE.

THE HAMBLETONIANS.—Concluded.

In calling attention to the merits of the Messenger-Hambletonian stock, the records of their performances and the prices they have been sold for, Mr. Wisner says:—

Of this stock, Goldsmith's Maid, record 2:14, brought	\$20,000
Dexter, record 2:17½, brought	33,000
Jay Gould, record 2:20½, brought	30,000
Judge Fullerton, record 2:18, brought	16,000
George Wilkes, record 2:22, brought	16,000
Gazelle, record 2:21, brought	10,000
Rosalind, record 2:21½, brought	20,000
Chas. Blackman, 4 months old, brought	5,000
Prospero, record 2:20, brought	25,000
Dame Trot, record 2:22, brought	10,000
Joe Elliott, no record, brought	10,000
Bruno, record 2:29½, brought	15,000
Sturtle, no record, brought	25,000
Robert Bonner, no record, brought	16,000
Dauntless, no record, brought	10,000
Happy Medium, no record, brought	24,000
Socrates, no record, brought	21,000
Edward Everett, no record, brought	20,000
Wallkill Chief, no record, brought	10,000
Maud S., record 2:11½, brought	21,000
Steinway, 2 yr. old, record 2:31½, and 3 yr. old, record 2:25½, brought	13,000
Dick Swivaller, record 2:18, brought	16,000
Trinket, 4 yr. old, record 4:19½, brought	11,000

"I paid \$10,000 for Rysdyk with no record. These are only a few of the many that brought such large prices. It is the trotters of this family that make such performers on the American turf. As a family they have the best records, with the greatest number of performers, and the greatest number of heats within the 2:30 standard adopted by the National Association of Trotting Horse Breeders."

Maud S., however, has, since the above evidence was given, achieved even a greater triumph in the unparalleled feat of trotting a mile in 2:10½.

The following are some of her performances:—

At Cincinnati, July 6th, in 2:34 class (4 starters), Maud S. won in three heats, 2:25, 2:30 and 2:28. Special purse at Chicago, July 24th, against Trinket, won in three heats, 2:19, 2:21½ and 2:18½.

At Buffalo, August 4th, 2:19 class (4 starters), Driver winning the first heat in 2:17; Maud S. the next three heats, 2:15½, 2:16½ and 2:16½.

At Cleveland, 2:19 class (4 starters), three heats, Maud S., 2:24, 2:28 and 2:31.

At Springfield, purse to beat 2:12½, Maud S., 2:20½ and 2:19.

At Rochester, August 12th, purse to beat 2:12½, Maud S., 2:11½, 2:20. (St. Julian same day and track made 2:11½.)

Chicago, September 18th, special purse to beat 2:11½, Maud S., 2:10½. This was her last race for the season.

Maud S. has already been noticed as inheriting pacing blood through her dam, Miss Russell, daughter of Pilot Junior. Her sire, Harold, is an in-bred Hambletonian, his dam, Enchantress, and his sire, Rysdyk Hambletonian, being both by Abdallah, grandson of Messenger.

The chief representative of the Hambletonian family in Canada is Rysdyk, already mentioned as purchased by Mr. Wisner, M.P., for \$10,000, without record on the turf, but esteemed invaluable for breeding purposes.

Rysdyk is descended on the dam side from Lexington, a horse that, according to Dr. Mc-

Monagle, "has produced more runners at the running gait than any other stallion."

Lexington sired Lady Duke, of whom Dr. McMonagle says:—

"Aristides Welch, of Chestnut Hill, Philadelphia, is probably the most astute breeder of blooded horse stock in the United States, except Alexander, of Kentucky. He goes into the examination of pedigrees systematically and philosophically, and he will breed from nothing but what is pure and has a perceptible line of inheritance. He raised Lady Duke, who was by Lexington, and her pedigree shows that she came directly through Madoc, by American Eclipse, who was out of Miller's Damsel, by Messenger. Mr. Welch conceived the idea that if he could incorporate Messenger blood with thoroughbred blood, and further concentrate it with Hambletonian, which was in-bred Messenger (and when I say in-bred I refer only to sires), he would produce a model horse to breed from. He produced Rysdyk."

Dr. McMonagle adds as to Rysdyk:—

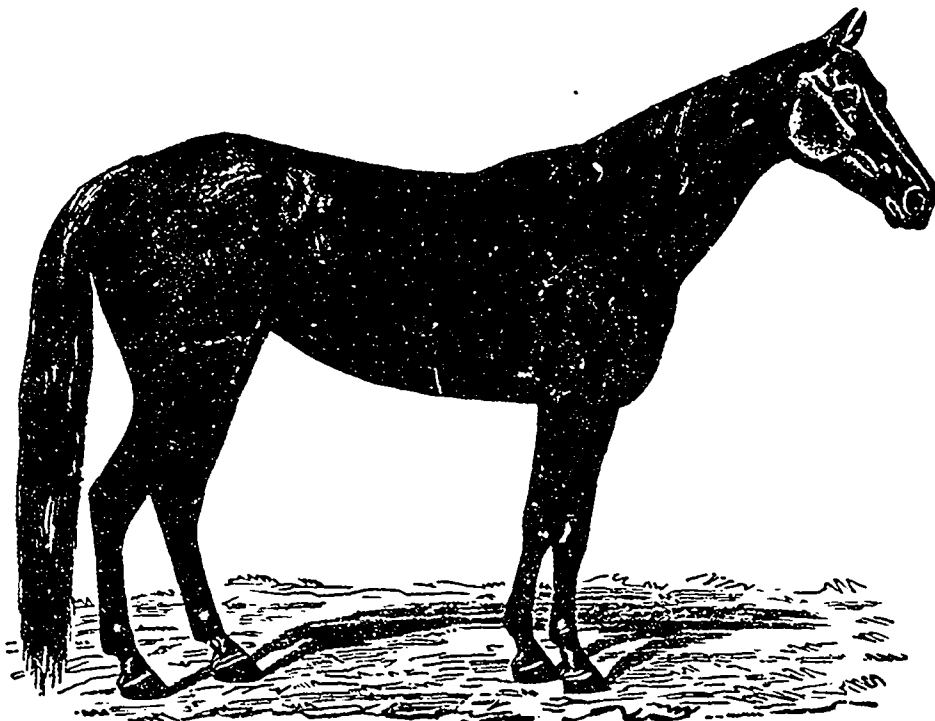
"Hambletonian is dead, and no other Rysdyk could be produced in the same way. This Rysdyk is extraordinary. He has a wealth of muscles in the gluteal regions that is simply immense. He has buttocks on him like a Short-

The Grey Eagles, Black Hawks, and Tippos (the latter an elder branch of the same family as the Royal Georges) are still represented in Canada, although the traces of their descent are, for want of any record, gradually being lost.—*Report of the Ontario Agricultural Commission.*

A SHYING HORSE.

I purchased a young horse recently. He is a noble animal, gentle and intelligent. But he has one bad habit. The first time I drove him (concerns a correspondent of the *Ohio Farmer*), he suddenly shied at some object and ran the buggy into a deep ditch before I knew what I was about, and then he sprang forward with such force as to throw me out. But I held to the lines and stopped him. He was all in a tremble, and it was some minutes before I got him calmed down. Then I wheeled him round and drove back. His eye caught the same object again, and he shied off to the other side of the road. I stopped him and let him have a good look at it—an old black root leaning against the fence. After a little I urged him forward a little nearer. He protested, but moved up a few feet, and then

stopped and snorted. I let him look at it again, and urged him a little nearer. He watched it apprehensively for awhile, and then settled down. I then got out and picked up the root and brought it toward him. He backed, but I succeeded in getting hold of the bit, and after some trouble got him to smell of the root. I rubbed it over his nose, threw it down before him, and succeeded in perfectly convincing him that it was harmless. Three times during my drive to town did I go through the same performance with other objects, and placed all of them so he could not help seeing them on my return. He shied but once, and that was at a new bugbear which I made him familiar with before it was left.



"MAUD S."—Record 2:10½.

horn bull. Rysdyk produces true to his type. To a learned man, and a man who studies the philosophy of breeding, he is a wonder. He breeds truthfully to his ancestral inheritance independent of what he meets on the dam's side."

Of the Hambletonians' performances, Dr. McMonagle says:—

"The Hambletonian family, out of 20 performers trotting in 2:18, or better, is credited with one-half, and out of a total of 54 performers with records of 2:20, or better, have 18, one-third of the whole number; they have the best record of 2:12½, with 1,653 heats, and 184 performers having records of 2:30, or better; and tested by that record, stand first in all the classes in 2:30, or better. Their progenitor, Rysdyk's Hambletonian, himself produced the incomparable number of 82 within the 2:30 standard—having 43 sons, sires of 2:30 trotters; 17 grandsons, sires of 2:30 trotters; and 4 great-grandsons, sires of 2:30 trotters, a prepotency guaranteeing breeders that his male descendants can impart with uniformity to their produce the best characteristics of their family, and transmit those characteristics for successive generations, and, while remaining true to their original type, they not only effect an improvement in others, but an improvement in themselves.

"Along with the native type they will produce something dissimilar and superior from anything any other sire could produce. The Hambletonian is the Short-horn of creation."

After getting home, I asked my hired man, who had driven him twice on the road before this, if he shied any for him. He replied that he did. "And did you whip him whenever he shied?" I asked. "Indade an' I did. I giv him a cut of the whip ivery toime." "I thought so from his actions to-day," said I. "Hereafter, Pat, never strike or scold him when he shies, but lead him gently up to the object he shies at, and make him understand that he is foolish to be scared at nothing."

And we followed this plan for a month or so, and now he is nearly broken of the habit. He has never been whipped but once since, and that was when he refused to move up to a gnarly, rooty, ugly-looking stump that stood partly in the road. But I made him go right up to it and smell of it, and after he had calmed down a little I got out and patted him a little and pulled some clover from the fence corner, laid it on the stump, and let him eat it up. As I said before, he is very intelligent, and he acted as if half ashamed of his fears at this time. I have no further trouble with him. He is nervous, however, and occasionally veers a little when suddenly seeing something, but his ugly shying is all over. This is the only way to manage this thing. Whipping, especially after the object has been passed, only

aggravates the trouble—makes the horse worse than ever. Half the men in this world are not fit to drive a spirited horse.

THE AYRSHIRES.

Next to the Durham, the Ayrshire blood is the most numerously represented among the farm cattle of Ontario. The cheese industry sprang into existence just as the termination of the Reciprocity Treaty gave a blow to the trade in cattle with the United States, and milk being thus the first consideration, meat was left for the time rather in the background, for, granting the excellent character of the Ayrshires as milkers, no one pretends to say that, except in a few rare and exceptional cases, they will make any show as beefers. The question that presents itself is, whether their quality in the former case is so remarkable as to counterbalance their shortcomings in respect of the latter requirement. And here it may be remarked that, whatever the original and inherent point of excellence in any breed, it is by the skill with which a particular quality has been cultivated and encouraged by careful selection and judicious breeding, that quality is developed to its full extent and capacity. So, on the other hand, even if no single extraordinary merit be inherent in the breed generally, the observation and shrewdness of the skilful breeder will often discover it in individual animals, and by selection bring out and establish a strain or family that will permanently retain the characteristic which has first attracted attention. It is clear there are milking families among the Durhams, and, had they ever been sought for, beefing families might have been found among the Ayrshires. It is none the less a fact, however, that the Ayrshires have been bred almost exclusively for milk, and where an Ayrshire bull has been used in this country it has been with an eye to the dairying, not to the feeding and beefing branch of the farmer's operations.

In his evidence taken by the Commissioners, respecting the Ayrshires, Mr. Jardine, of Saltfleet, one of the leading breeders of Ayrshire cattle, said: "We claim that the Ayrshires excel every other breed of cattle in the quantity of the milk they give, and that their milk contains more caseine for cheese-making." He goes on to say:—

"I have crossed them with the native and Shorthorn cattle. In crossing an Ayrshire bull and a thoroughbred Shorthorn cow, we get a fine, large-framed animal, and a good deep milker—what I would consider a good animal for all purposes. We consider that this cross is an improvement on the Ayrshire for the shambles, and an improvement on the Shorthorn for milking qualities. We have been crossing Ayrshires and Shorthorns in that way for the last five or six years, and our experience has been very profitable. Several breeders of Shorthorns in our neighbourhood cross their cows with our Ayrshire bull."

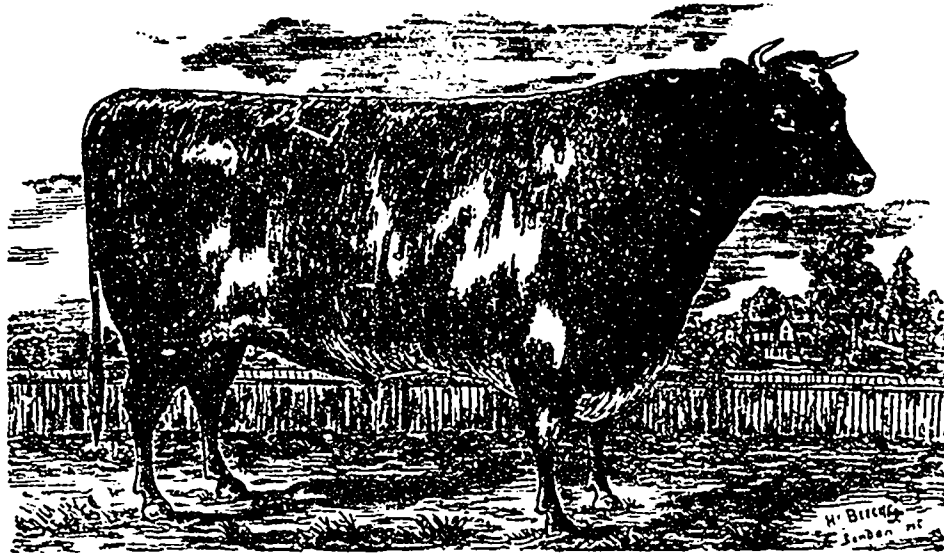
In regard to the yield of milk, Mr. Jardine says that he considers 2½ gallons a day (ten quarts), the year round, a good average, that individual animals will give three or four gallons, and that one cow gave five gallons for eight or nine months. That was, however, a very exceptional instance. As to the richness of the milk, Mr. Jardine says: "The richness I have not tested much." It would have been satisfactory if a gentleman so largely interested in the breeding of

Ayrshires could have supplied some accurate information on this very important quality in a dairy cow. Grade steers, Ayrshire and Shorthorn crosses, will, he says, reach a weight of from 1,200 to 1,500 lbs. when three or four years old. He says further:—

"In point of hardiness I think the Ayrshire is equal to the Shorthorn. In point of feeding I think it will live where the Shorthorn will starve; that is my experience of both breeds. The Shorthorn is the more dainty feeder, but it has more capacity than the Ayrshires, and I don't know but that, under the same circumstances, it would improve faster. Considering milk and beef together, I would recommend ordinary farmers, for general purposes, to substitute Ayrshires for Shorthorns. I think our native cattle, improved by Shorthorns, would perhaps be better for milk and beef combined than they would be if improved by the Ayrshires, especially for beef. I am aware that some families of Shorthorns give good quantities of milk, and there are some families of Ayrshires that give less milk than others. We do not, as a rule, raise much stock from the poor milkers. We have never had any very poor milkers."—*Report of Ontario Agricultural Commission.*

THE WALKING HORSE.

The country would reap incalculable benefit if the walk of its ordinary horse could be accelerated



AYRSHIRE BULL.

a single mile per hour beyond what is now general. It would put millions of dollars extra into the national pockets every year. We might have horses which would walk five miles per hour, just as naturally and easily as three to three and a half, and rarely four, as is now the rule. All the farm, and much of the country road and town street horse-work is done at a walk. It costs no more to feed a smart walker than it does a slow, logy one, and frequently not so much. Now, let anyone calculate the profit and advantage of using the former in preference to the latter. Let the farmer see how much more land per day he can get ploughed and harrowed; how many more loads of hay, straw, grain and vegetables he can take to market; and how much more rapidly he is able to accomplish all his other work, and he will have little patience in keeping a slow-walking horse any longer. It will be the same with the expressman, the teamster, and the truckman.

Bellfounder, got by the celebrated imported trotting horse of this name, out of Lady Alport, was not only a fast trotter, but had a natural, easy walk of five miles per hour. He was kept by our family several years, and nearly all his stock, out of quite common mares, proved excellent walkers. This shows how easily and rapidly an increased fast walking stock may be bred by all farmers, if they will only take due pains to select the stallions to which they may hereafter

nick their mares. A fast walking horse commands a considerably higher price with those who care for the pace, than a slow walker, and such buyers are constantly on the increase now, and that day will come by-and-by when a slow walker will hardly get a bid. The fastest walk I have yet seen exactly timed and put on record was that of the English horse Sloven. He made, without extra effort, 5.69 miles per hour. All agricultural societies ought to give good premiums to fast-walking horses, the highest prize to be awarded to the one which walked five miles per hour, the second to four and one-half miles; the third to four miles. This last should be the least time for which to award a prize, and all breeds should be allowed to compete.—*A. B. Allen.*

BUYING UP THE HERDS OF SCOTLAND.

Under the title of "A Word of Warning to Polled Breeders," the *North British Agriculturist* has the following:—

"In the Royal English show-yard at Reading, one day last week, a south of England 'Shorthorn man' informed us that he had heard on pretty good authority that the Americans were seriously contemplating something like 'ring work' with the Polled cattle of Scotland. That is to say, they had the purchase of whole herds in

their eye, and failing that, the purchase of every animal that would be put on price. We have no means of testing the accuracy of the proposed 'ring' work, but when we consider that as yet the Polles are, from a national point of view, in comparatively few hands, the accomplishment of it might not be very difficult. Of one thing we are quite certain, and that is, that there is to be a heavy American drain this summer and autumn on Scotch Polled herds.

"The object of this short note, however, is to put Polled breeders on their guard. If they in any considerable numbers, through the allurements of gold, allow themselves to be 'bought up,' or nearly so, we cannot help thinking they would be acting foolishly. It should not be their interest, or the interest of Scotland, to assent to a much greater curtailment of the native breeding Polled races of stock, however tempting at first the offers of wealthy and enterprising foreigners may be. While any attempt at the purchase of an entire herd should, by the owner thereof, be viewed with disfavour, it should be good enough policy to yield to high prices for all that can possibly be spared from a herd without impairing its reproductive resources. But 'ring' work on the part of purchasers should be looked upon with suspicion in this country. It would be a dark day for Scotland, or at least a considerable portion of it, if the flower of the Polled races were secured for exportation, as was the case a quarter of a century or so ago with the highly prized Bates Shorthorns."

STOCKMEN throughout the country will find the *RURAL CANADIAN* a good paper to take. Subscribe now.

To keep flies from horses, procure a bunch of smart-weed, and bruise it to cause the juice to exude. Rub the animal thoroughly with the bunch of bruised weed, especially on the legs, neck and ears. Neither flies nor other insects will trouble him for twenty-four hours.

GOOD PAY TO AGENTS.

Agents wanted in every village, town and township, to make a thorough canvass for the RURAL CANADIAN. Liberal inducements. Work to commence at once. For full particulars address

O. BLACKETT ROBINSON,

5 Jordan Street, Toronto.

Publisher.

LETTERS on business should always be addressed to the PUBLISHER; while communications intended for insertion in the paper, or relating to the Editorial department, to ensure prompt attention, must be addressed to EDITOR RURAL CANADIAN.

The Rural Canadian.

EDITED BY W. F. CLARKE.

TORONTO, SEPTEMBER 15th, 1882.

THE PRESS TRIP TO MANITOBA AND THE NORTH-WEST.

At the suggestion of Mr. J. W. Leonard, General Passenger Agent of the Credit Valley Railway, and with the hearty concurrence of Mr. James Ross, General Superintendent, and Mr. E. B. Osler, Vice-President, the members of the Canadian Press Association were tendered an excursion to Manitoba and the North-West. The invitation so politely given was gratefully accepted, and a party numbering nearly one hundred left Toronto about noon, August 22nd, for a trip that will be ever memorable in the history of the Association, for its length, pleasantness and interest. Among others, the editor of the RURAL CANADIAN took this opportunity of visiting the prairie Provinces of the Dominion; and while other journalists will give the more general and miscellaneous particulars of the journey, it will be his aim to record briefly the agricultural phases of it.

The route was from Toronto to St. Thomas over the Credit Valley Railway, a distance of 121 miles. This road is in first-class order, and thoroughly equipped in all respects. Its line runs through some of the finest farming districts of Ontario, but these are so well known, that particularization in regard to them is unnecessary. From St. Thomas to Detroit, 106 miles, the party travelled *via* the Canada Southern—a road famous for quick time, level grade, and glassy smoothness. This line also passes through some of the finest lands in Western Ontario, and from St. Thomas westward is bordered by a region unsurpassed for the production of wheat, corn, and fruit. The run from Detroit to Chicago, 284 miles, was over the Michigan Central—a splendid road. This part of the journey being taken in the night, there was no opportunity to "view the land," but the agricultural resources of Central Michigan are too well known to require description. West of Chicago, the route was by the Chicago, Rock Island and Pacific, one of the great western trunk lines. The immense capital invested in these roads, their vast freight and passenger traffic, and the keen competition that constantly exists among them, secures first-class appointments in all respects. The Chicago, Rock Island and Pacific has the special advantage of possessing a double track on its main line, along which the excursionists travelled as far as West Liberty, some 80 miles beyond the Mississippi river. Most of this run was made by daylight, and gave ample opportunity for studying many of the characteristics of prairie farming. Corn is the great staple throughout this region. The present year has not been a favourable one for this cereal, yet many magnificent fields were to be seen. An exhaustive system of farming has left its impress on many of these prairie corn-fields, and there were many traces of a slovenly and unthrifty husbandry. Illinois is far from being so seemingly productive as it was when we

passed through it some ten years ago. Indeed, it is now in a transition state. Grain farming is giving place to stock-raising and dairying, with resultant signs of reviving prosperity. The farm buildings, and appearances generally, do not indicate that the average Illinois farmer is any better off than the average Ontario farmer. Indeed, judged by these tokens, the comparison would seem to be rather in favour of Ontario. A large proportion of the prairie land through which we passed, both in Illinois and Iowa, is rolling prairie, with, here and there, stretches of woodland, the timber being light and small. Tree-planting and hedge-setting have received considerable attention, the favourite hedge plant being the Osage Orange, which grows luxuriantly in these latitudes, and, well managed, makes an impervious fence.

Most of the way from the main line of the C., R. I. and P. to Minneapolis was traversed by our party during the night. The route was by what is known as the "Albert Lea" line, which has, by energetic management, become a powerful rival to the other lines, and has both shortened the time and reduced the cost of the journey between Chicago and St. Paul. Minneapolis was reached in the early morning, and after breakfast the special interest of the trip commenced by our departure for Winnipeg, *via* the St. Paul, Minneapolis, and Manitoba R.R., which extends to St. Vincent, on the national boundary—380 miles. Along this road we travelled all one day and all one night, most of the way lying through the vast wheat fields for which Minnesota is famed. It was a fine opportunity to see prairie farming at its best, for the wheat harvest was in full blast. The sight was a novel one, both as to the extent of the wheat fields and the style of harvesting. Self-binders are almost exclusively employed, and it seemed as though regiments of them were at work. In some cases, wheat fields extended on either side of the railroad as far as the eye could reach, and we saw the golden grain in all the stages of the harvesting process. There it was, ready for the reaper; close by, it was converted as by magic into sheaves; not far off, it stood in shocks; anon, teams were hauling it either to the stacks or to the steam threshers, many of which were busily at work. Wherever wheat-farming was being carried on in a large way, the crop seemed uniformly heavy. These were the newer lands. In those cases in which the crop was light—and they were numerous—the farms were small, and had been cropped for a number of years in succession. There can be little doubt that the cream of the fertility of these lands is being skimmed off very rapidly, and that "the great wheat belt," as it is called, must recede westward and northward. There are many "big farms" in Minnesota. When wholesale wheat-raising no longer pays, these huge estates will be cut up into smaller holdings, and another style of farming must come into vogue. Many of these large farms are mere encampments, the buildings being of the most temporary character, only adapted for residence during the growing season. A large portion of the State, though taken up, can hardly be said to be occupied.

From St. Vincent to Winnipeg, 64 miles, the route lay over the Canada Pacific Railway, and to all appearance we seemed to be journeying through Minnesota still, only there was less actual farm-work going on, the region being newer. But the general appearance of the country is the same—almost a dead level of treeless, level prairie, much of it apparently high, dry and fertile, yet a considerable portion of it low, and bearing a vegetation which bespoke the presence of stagnant water in the soil. Where drainage is

possible, these lands will make, in time, the richest of meadows and pastures, but it must be owned that there are extensive areas that hardly admit of drainage.

Of Winnipeg, that wonderful young giant city, we must leave others to speak. Its growth is the marvel of our times; its business has already assumed well-nigh fabulous proportions; and, as the commercial metropolis of Manitoba and the North-West, there can be no doubt that a great future is in store for it. We must also leave others to narrate the series of receptions, and the overflowing hospitalities that awaited the party everywhere. Our brethren of the Winnipeg press; the Mayor and Council of that city; the authorities and people of Selkirk, Portage la Prairie, Brandon, and even Keewatin; and last, but not least, the Canada Pacific Railway feted and welcomed us, breakfasted, dined and wined us, with a prodigal bounty such as we have never seen equalled, still less excelled, in all our experience. We can but regret that our limited space, infrequent appearance, and the necessity of dealing specially with the agriculture of the trip, renders it impossible to dilate on these interesting matters, and out of the question to particularize those who distinguished themselves by their kind and thoughtful attentions to our party.

From Winnipeg we were carried over the C. P. R., 400 miles, to the end of the track—if the word "end" can be used concerning a point that is moving farther west at the rate of three or four miles a day. It was with emotions words fail to express that we found ourselves half way across the "boundless prairies," and beheld the railway and telegraph lines piercing the heart of "the great lone land," while the wild Indian, with attendant squaw and papoose, looked on in mute surprise at the achievements of the "pale faces." The 400 miles of railway over which we rode traverses districts of country that vary greatly in quality of land. It is not all prairie three feet deep with vegetable mould, though much of it is of that wondrous character. As in Minnesota, so here, there are stretches of poor land, of low, water-logged land, and even of stony land, that present no tempting invitation to the agricultural settler. But there is enough land of the very best quality to provide farms and homes for an emigration of mammoth proportions.

A few general impressions are all that can now be added to the foregoing meagre outline of our trip. Foremost among these is this, that the future of this country depends on its agriculture. Therefore, it is of the first importance to secure a population that will energetically develop the well-nigh unbounded resources of the soil. To do this, every inducement should be held out to the industrious and enterprising settler, and all needless difficulties and hindrances taken out of his way. Whether this is now being done by those who have the settlement of the country in charge, is a point we cannot stop to discuss at present.

Who should emigrate to these regions? is a very important question. We unhesitatingly answer, not those who have unencumbered farms, home comforts, and a good living in the older Provinces. The great North-West is not a paradise by any means. It will be for long a scene of privation and hardship to agricultural settlers. Young men of muscle and will, whose means are scant, but whose courage is dauntless, may well seek in these inviting regions a sphere of operations where they may achieve success. Farmers with growing families, whose lands are mortgaged, and who see little prospect of clearing their properties of debt, and providing for their children, may turn their eyes hither with hopefulness. Tenant farmers in the old world, with some

capital, who are hampered where they are, would find themselves in a position soon to achieve independence, if not wealth, in these regions. Working men of industrious and pushing habits, too, can find good scope here. Let all Micawbers, idlers, loafers, and nobodies keep far away from these parts, for the chances are more slim in Manitoba and the North-West than in any other part of the world of which we have any knowledge.

This article may be regarded as only a preliminary and general one. Dashed off ere the trip is concluded, and before there has been time for full deliberation, many points have been overlooked, and some things forgotten, to which it will be at once our duty and pleasure to give attention in future issues of the RURAL CANADIAN.

A RUN INTO DAKOTA.

The entire Press party had a peep at Dakota during a morning drive from Emerson through West Lynne, thence to Pembina and St. Vincent; but, through the courtesy of Mr. C. W. Case, Superintendent of the Hastings and Dakota R.R., the Editor of the RURAL CANADIAN was enabled to take a trip from Minneapolis to the far-famed Jim River Valley, the very heart and garden of Dakota. At the risk of making our editorial confreres feel bad over what they missed, we may say that Mr. Case would have cheerfully run a special train to convey the entire company of excursionists to the Jim River Valley and back, if he had known of their coming in time to effect the necessary arrangements. We shall always be glad that we took this little extra trip, having thereby obtained a much fuller knowledge of the great West than we should otherwise have had. There is only one drawback to the pleasure of this supplementary excursion, and that is the compulsion we are under of testifying to the superior advantages of this region over any other that we visited during our recent tour. But an editor, like a jury, must "a true verdict give, according to the evidence."

We are inclined to think that there is as good land in the North-West as can be found anywhere in Dakota. But four or five degrees of southing must make a great difference in the climate. The growing season is longer, and the winters are shorter and milder. We saw as good crops of Indian corn in Dakota as in Illinois. Melons planted in the open ground, without hot-bed forcing, were large, ripe and luscious. The grain harvest was entirely over, while we left vast areas in the North-West not yet ready for the reaper. Wheat is an equally good crop, and apparently of excellent quality, though some admitted that it was not so uniformly "hard No. 1" as farther north. There is no denying that a general or mixed style of farming is more practicable in Dakota than in the North-West.

The advantages just adverted to are crowned by a better land system. There are no monopolies, railway or otherwise; no colonization societies; no reservations, except two sections in each township for school purposes. The best of the land—indeed, all of it, with the exception just named—is open to the actual settler. In fact, actual settlement is the invariable condition of ownership. Tricks are resorted to for the purpose of getting hold of more land than the law allows, but they are rarely successful. Every inducement is held out to tempt the *bona fide* farmer to make a home in this region. Hence, the conveniences of life growing out of the proximity of neighbours, are soon secured. In a settlement we visited, not yet three years old, there is already a commodious school-house, in which "school keeps" as regularly as in any older settlement. Railway facilities are already established, and

there is competition. Two roads—the Chicago, Milwaukee and St. Paul, and the Chicago and North-Western—rival each other in the endeavour to get the freight and passenger traffic of this region. Towns are springing up as if by magic, and only distance makes this a frontier country.

The Jim River Valley is a delightful farming district. The river is bordered, more or less, with timber, and the monotonous prairie landscape relieved by vistas of trees. All through this valley, and in Dakota generally, the crops have been most bountiful the present season. In the absence of barns, the prairie is dotted all over with grain and hay stacks. All really industrious settlers are doing well. Some who came in poverty a couple of years ago, are already independent, and those with whom we conversed are not only contented but delighted with their lot.

Still, with all the charms of the Jim River Valley in view, there are few "well-fixed" Canadian farmers who could, on the whole, improve their condition by pulling up stakes and going thither. Enormous grain yields are the exception rather than the rule. We met with few "honest farmers" who, after measurement, could boast more than twenty-five bushels of wheat per acre, and many do not reach that point. Twenty per cent. may be deducted from the crop to satisfy freightage to Chicago. There will always, under the most favourable circumstances, be a "big bulge" on the side of the farmer 1,000 or 1,200 miles nearer the seaboard, not only in the price obtained for his crops, but in the cost of many of the necessities and luxuries of life. Even where there is timber enough for fuel, lumber must rule high. Life in a prairie shanty, or contracted house, has many drawbacks. It is not all gold that glitters in the far-away West. That, as in the case of Manitoba and the North-West, many can change for the better by coming to these regions, must be freely admitted, but they must face much privation and hardship at the start to do so. We frankly own that we return to Ontario with a higher appreciation of it than we ever had before.

It is much to be regretted that any disadvantages other than the natural ones should stand in the way of the settler who, from patriotic or other considerations, would prefer, in moving westward, still to remain in his "ain countrie." This feeling, awakened in a measure by our trip to the North-West, has been intensified by our visit to Dakota, and, along with other impressions of the vast tracts of land we have recently traversed, must be left for farther and fuller statement in future issues of the RURAL CANADIAN.

SKETCHES OF CANADIAN WILD BIRDS.

By W. L. KELLS, LISTOWEL, ONT.

THE ORIOLES.

These genera of birds are remarkable for their brilliant plumage, and the ingenious manner in which they construct their nests. They appear to form a connection between the tanagers and the warblers. The bill is of medium length, and conical; both mandibles are of equal length. Their peculiar mode of nest-building renders this very necessary. They feed chiefly on insects. Like the tanagers, the majority of these birds are confined to more tropical regions, only one or two species being visitants of Canada.

THE BALTIMORE ORIOLE.

This bird is noted for the beauty of its plumage, its mellow notes, and the ingenuity displayed by the female in the formation of her nest. The male is seven inches in length; the head, throat, upper parts of the wings, and back are black; the whole under parts are of a bright orange hue, deepening into vermilion on the breast; the back

is also crossed by an orange band. The plumage of the female is similarly marked, but the hue is dull. The food of this species consists chiefly of insects, such as beetles, bugs, small moths, and caterpillars, and also earthworms. The song of the oriole is a clear mellow whistle, repeated as it gleams among the green leaves of the trees, where the greater portion of its time is spent. There is in its notes a certain wild playfulness and vivacity which to the interested listener is very pleasing. It is not uttered with the rapidity of our more melodious songsters, but rather with the pleasing tranquillity of a careless school-boy, performing only for his own amusement. When alarmed, or when anything approaches that the oriole regards as an enemy, he makes a rapid twittering, very different from his usual notes. This species inhabits the greater part of the temperate regions of North America. It is not a resident of the immediate backwoods, but prefers the orchards, groves, shade trees, and the margins of the woods in the older settled districts, where, during the summer months, the beautiful plumage and artless manners of the male render it, in the hours of recreation, an attractive study for the lovers of ornithology. This bird is also bold and courageous, and while the female attends to her nesting duties, the male makes no hesitation in attempting to drive away all intruders of the feathered race. Its nest—a purse-like structure—is generally suspended among the drooping branches of trees which stand on the margin of the woods, overhang a water-course, or have been planted for the purposes of shade, surrounding farm dwellings, or in the streets of towns and cities. The eggs, five or six in number, are of a white colour, marked with streaks of black. "The nest of the oriole is one of the wonders of bird architecture. Whether we contemplate it as the work exclusively of instinct, or whether memory and judgment are brought into requisition, it is a study worthy of the naturalist. The favourite trees for her nest are the weeping willow, elm, and maple. The small branches of these trees are pendant, and she begins by uniting two or three twigs together with a cord so as to be like a small hoop, and to this she suspends the framework. The nest, when completed, will resemble a long narrow pocket open at the top, and six or eight inches in length. The variety of material used is astonishing; nothing comes amiss; flax, hemp, cotton, straw, grass, wool, hair, strips of bark, sometimes thread or ribbons, or small pieces of lace, will be appropriated; horse-hair, two feet long, will be sewed through and through from the top to the bottom, and then up to the other side, and back again; and when all this is done, it will be so matted together as to be almost as firm as a felt hat. The nest of the oriole is indeed a combination of weaving and felting. So solicitous is this bird to procure proper materials for the construction of her nest, that it is often necessary to watch thread that may be out bleaching, and the farmer must secure his young grafts, as this bird will carry off the former, and the strings that tie the latter, to serve its purpose in building. Clothes lines are also attacked, and all needed materials taken therefrom. The nest, when finished, is well secured from sun and rain, and also from observation below, by the thick foliage and branches among which it is placed."

The young orioles remain in the nest until they are able to fly, but for some time before they take their first flight the nest is easily discovered by their peculiar notes, which resemble the piping of young goslings.

This has been a favourable summer for weeds, and many farms are so plentifully re-stocked with them, that trouble may be anticipated in days that are to come.

SHEEP AND SWINE.

OXFORD DOWNS.

The Oxford is a breed of only some thirty-five years' standing, obtained originally by crossing a Hampshire Down ewe with a Cotswold ram, and then the issue of that cross with a Southdown ram—the "topping off" with the Southdown being particularly attended to. How far the Oxford Downs may possess the merit of prepotency is not very clearly brought out in the evidence, the fact being that the Oxfords are little known in Canada. Mr. Clay, of Bow Park, whose acquaintance with the Oxfords is that of an English as well as a Canadian farmer, gives the Oxfords on the whole the preference, agreeing at the same time with the other witnesses as to the size and character of the sheep required for the English trade. He seems to be confident, too, of the transmitting power of the Oxford. He says:—

"The Oxford is not a pure-bred sheep to begin with, but it has been bred so consistently that it now gets the name of being a pure-bred sheep, and the best proof that it is so is, that it is used to cross upon animals that are not pure-bred, so as to improve them. The great objection to the Southdown is its want of wool. It is an important item to raise a considerable fleece of wool in this country, and the Oxford Down has the fullest fleece of all the Downs."

Mr. Benson, although not speaking very confidently, leans to the use of the Oxford or Hampshire Down in order to obtain size.—*Report of the Ontario Agricultural Commission.*

DON'T RAISE SCRUBS.

One of the most senseless and expensive practices in which too many of our farmers indulge is the breeding and raising, year after year, of scrubby, mongrel stock.

They in some way fail to grasp the idea that each animal maintained on the farm is a laboratory in which is to be worked up the products of their fields into compact and marketable form. In fact, the farmer who raises we will say cattle, sheep and swine, becomes a manufacturer, and ordinary business sagacity would suggest that the best machinery for those purposes would be the most profitable. In any other manufacturing enterprise the man would be properly considered a lunatic who invested in machinery that would turn out only the lowest grade of products, to be a drug on the market at prices that yielded little or no profit.

People who buy their meats are every year becoming more fastidious as to quality, and in the leading markets it is only the best that commands the highest remunerative prices; and to be abreast of the competition that will be encountered every where, we must prepare ourselves to furnish products, not of the common or medium quality, but the best. The best are in demand in every market at paying prices, and of the lower grades there is always an over supply that goes begging.

If the question arises as to the steps necessary to inaugurate some of the needed improvements, we would indicate, first, using a better class of sires, something better than the cold blooded scrubs seen on (if we must say it) the majority of farms; secondly, furnishing all kinds of stock a more generous supply and a more variety of food.

The extra expense of procuring purely bred males is the cause of a large per cent. of stock raisers using scrubs of a poor grade instead, and the result is that no perceptible improvement is made, when an expenditure of a few more dollars would have purchased a sire that would have left an indelible impress of improvement along with enhanced value on hundreds of animals that would come after. Our breeders must understand that like produces like, and that breeding scrubs together is a waste of time; that breeding from poor grade sires in this enlightened age is little better than shiftlessness—something no wide-awake man would be guilty of when it can possibly be avoided.—*Selected.*

SAVE THE GOOD BROOD SOWS.

Corn is high, pork is high. It costs much more to winter a full-grown sow than it does a spring pig. The old sow, if she has reared a litter of pigs, probably is not so attractive looking as are the best of her sow pigs. All these things may tempt one to fatten the sow and keep one of the pigs for breeding purposes. To all contemplating



OXFORD DOWNS.

this course, we feel like giving *Punch's* celebrated advice to those contemplating matrimony. This was summed up in the one word, "Don't."

As a rule, with few exceptions, a matured sow will rear more, stronger and better pigs than will an unmatured one. In case a sow shall have proved herself undesirable, there is no question that she should be slaughtered, but if her past performance has been satisfactory, the fact that she is two years old is not a sufficient reason for sending her to the butcher. Some of the best brood sows we have known have been in active service until they were half a dozen years old—in some cases even longer.

Persistence in the custom of breeding from young and immature parents can hardly fail to tend to weaken the constitution of the stock. It may tend to further develop early maturity, but this may be gained at too great a cost.—*Breeder's Gazette.*

SHEEP.

The crying need of American agriculture today is a more general incorporation of the sheep into the farming economy. More prolific than horses or cattle, as well as more tractable, subsisting on scantier herbage and requiring less supervision, it claims the additional advantage of "paying for its raising" in annual instalments of marketable fleece, pending its growth to maturity. It is more readily transferred from one inclosure

to another, and is easily restrained by fences which would prove no barrier against the encroachments of other farm stock. Its light tread and love of repose warrant its access to fields and pastures where the tramping of cattle and the tearing of hogs would not be tolerated. It wastes less food in proportion to the quantity consumed, and will hunt and utilize much that would otherwise be lost to the farmer. Yielding a return in both fleece and flesh, it furnishes its owner with the double advantage of catching a good market for his produce, requiring less water, and disposed to work for its food. It is without a peer when summer's drought taxes the farmer's resources for enabling his live stock to maintain an average of thirst and flesh. All that can be said in behalf of feeding live stock on the farm, as distinguished from the soil impoverishing policy of placing the raw grain and grass upon the market, will be found to apply with double emphasis to the farm that carries as a part of its outfit one or more sheep per acre. No, the animal returns more fertility to soil in proportion to the amount exacted for its support, while none equals it in the evenness

with which the droppings are distributed. Notwithstanding the evident advantages an increase in sheep culture brings the agriculture of a country generally, and especially ensuring to the benefit of such farmers as incorporate it into their system, the fact is apparent that sheep are not so numerous or so evenly distributed as they should be.—*Breeder's Gazette.*

WATER FOR SHEEP.

How many farmers totally neglect providing water for their flocks except in very hot summers, when grass and everything besides is burnt up? But there can scarcely be a doubt that pure, fresh water ought always to be within access of a

flock of sheep, whether they are thought to want it or not. The most experienced and observant of shepherds cannot always tell when this ought to be furnished, for some animals may be in a condition to require it and others not. The only safe rule to follow, therefore, is never to allow the deprivation to be experienced, by providing water so as to be within ready access at all times. This is what Mr. R. Russell, the successful breeder in Kent, does. One invariable rule which he follows, both in summer and in winter, being, never to allow any animal on his farm to go a single day throughout the year without having ready access to two things—pure fresh water and salt.—*London Farm and Home.*

Prof. Stalker, of the Iowa Agricultural College, gives to the *Homestead* the following cure for foot rot in sheep. "The following will apply to the majority of cases of simple foot rot: All loose flakes of horn should be carefully pared off and the hoofs trimmed to a proper shape. The foot should be thoroughly cleaned and carefully done up in a tar bandage. We simply put on tar, and bandage with a bit of strong cloth. If there is much ulceration, a chronic sore having been formed, touch the surface with a solution, one part sulphuric or hydrochloric acid, and three parts water. Dress as above. The animal should be kept where as little wet and filth as possible will reach the feet."

BEES AND POULTRY.**FEEDING BEES.**

Bees should be reared so as to give the bee-keeper some surplus honey, instead of requiring to be fed by him. But feeding should be attended to, when necessary, at the proper time. By the use of movable comb-hives, deficient colonies may be supplied with one comb or more containing honey from a colony having a surplus. Enough food should be furnished them in the fall to last them until fruit trees begin to bloom in the spring. If done in the beginning of October, the bees will cap over the honey before the cold weather begins. Uncapped honey absorbs impurities, often sours in the cells, dampens the air in the hive, and frequently causes dysentery among the bees. If the needy colony is in a first-class hive, any partly-filled box of honey may be placed upon the hive. The large openings from every comb in the hive and the direct communication induces them to take possession of its contents readily, even during freezing weather. Bees in common hives, or in hives having a honey-board or air-space between the frame and the box, would sooner die than enter a honey-box in cold weather. If needy stocks are not thoroughly fed in the fall, or if an unfavourable summer is followed by a severe winter and late spring, feeding may become necessary in the spring. Langstroth says: "In the spring the prudent bee-keeper will no more neglect to feed his destitute colonies than to provide for his own table." The feeding of bees should be done inside the hive or above their combs, if there are passages from below. They should never be fed outside the hive, for that will always teach them the habit of robbing. If honey stored in frames or boxes is retained for such emergencies, it is by far the best method; but if all the honey in frames has been imprudently sold or used, the best food that can be given them is strained honey. In the fall, if the needy stocks are in the movable comb-hive, remove two or three empty combs from each, lay them on a board or table, and sprinkle warm honey over the upper half of the comb until the cells are about two-thirds full; let it cool for a short time, then turn it over and fill the upper half of the other side; replace the combs in the hive, and feed in the chamber a few days until the cells are capped over. The importance of feeding is only fully realized when we bear in mind that from a pound of sugar syrup, costing only about six cents, as much comb will be built as from a pound of honey, costing thirty cents. To make syrup for feeding, take brown sugar, and to every pound of it add one pint of boiling water; boil the whole for a few minutes and skim. If bees must be fed in winter, owing to neglect in the fall, pour the honey directly into the combs, if the stocks are in the movable comb-hives; if in the common hive, remove it to a room, invert it, cut out enough comb to admit a small plate filled with honey, place it near the bees, and tie a cloth over the mouth of the hive to confine the bees, or a small bag filled with honey and sugar may be suspended in the hive from above, cutting away enough comb to admit to it the cluster of bees.—*Bee-keeper's Guide.*

COMB FOUNDATION.

Comb foundation is one of the great aids in apiculture which is of recent invention. It is made by stamping thin sheets of beeswax by means of engraved rollers or plates. The foundation differs hardly at all from the natural comb except that the cells are only just commenced and that they are much thicker than the natural comb. This thickness, however, is found to be an advan-

tage rather than a disadvantage, as the bees utilize the extra wax in completing the comb, and are thus saved from secreting the wax, which is done at great expense, as it takes twenty pounds of honey to nourish the bees while the latter are secreting one pound of wax. Foundation was first stamped in Germany by means of plates, but was first made prominent in this country, where its perfection made it of great value to the bee-keeper. Heretofore, in this country it has been made with rollers almost entirely. Most of the roller machines make the walls of the cells thin and the base thick. The Dunham machine, on the other hand, makes the walls thick and the base of the cells thin. This, it is thought, makes the foundation less likely to sag and bend, and makes it a little more acceptable to the bees.

Lately presses have been made that enable us to stamp the wax right in the frames, which have been previously wired. That is, several small wires unite the centre of the top and bottom bars of the frames. This holds the combs securely, prevents the sagging of the foundation, and is rapidly growing into favour. Mr. Root, the one who has made and sold the most of the roller machines, says the presses are likely to supersede the rollers. Where the frames are not wired, the foundation is fastened into the frames by pressing it when it is warm on to the top bar, or by sticking it with melted wax. Full-sized sheets are now used without difficulty. The foundation is only made to adhere to the top bar, and does not come quite to the end bars or to the bottom of the frames. By using foundation the bees are saved the expensive work of secreting wax to a large degree, and so the honey product is immensely increased. Very thin foundation is now used by many in the sections. Foundation is now in the market and can be had of any supply dealer. The price ranges from thirty-five to forty-five cents per pound.—*Professor A. J. Cook, Michigan Agricultural College.*

COMPARATIVE YIELD OF EGGS.

There is a wide difference in eggs. A correspondent writes to say that the largest eggs he ever got were from Houdans, "which weigh about six to the pound." Houdan hens, when fully matured, lay large, rather longish, white eggs, but they will not do it until two or three years old. The largest and richest eggs that I ever met with were from the Spanish and Hamburgs. These two fowls crossed produce eggs very large, and rivaling the turkey egg in fineness and richness. Brown Leghorn eggs ordinarily weigh nine to the pound, on the average; selected ones probably would go seven to the pound.

There has of late been an improvement in size of the Asiatic egg over the first introduced Shanghai fowl. Some of the varieties, as well as many of their crosses, lay eggs rivaling in size those of any other variety. In quality they do not excel, usually possessing small yolks. The true Brahms egg is rather small and of a fresh coffee colour, with thick, heavy shells. The eggs are generally uniform in size and oval in shape. The average standard, however, is as follows: Light Brahmas and Partridge Cochins, eggs seven to the pound; they lay, according to treatment and keeping, from eighty to one hundred per annum, oftentimes more if kept well. Dark Brahmas, eight to the pound, and about seventy per annum. Black, White and Buff Cochins, eight to the pound; one hundred is a large yield per annum. Plymouth Rocks, eight to the pound, lay one hundred per annum. Houdans, eight to the pound, lay one hundred and fifty per annum; non-sitters. La Fleche, seven to the pound, lay one hundred and thirty

per annum; non-sitters. Black Spanish, seven to the pound, lay one hundred and fifty per annum. Dominiques, nine to the pound, lay one hundred and thirty per annum. Games, nine to the pound, lay one hundred and thirty per annum. Crevecoeurs, seven to the pound, lay one hundred and fifty per annum. Leghorns, nine to the pound, lay from one hundred and fifty to two hundred per annum. Hamburgs, nine to the pound, lay one hundred and seventy per annum. Polish, nine to the pound, lay one hundred and fifty per annum. Bantams, sixteen to the pound, lay sixty per annum. Turkeys' eggs, five to the pound, lay from thirty to sixty per annum. Ducks' eggs vary greatly with different species, but from five to six to the pound, and from fourteen to twenty-eight per annum, according to age and keeping. Geese, four to the pound, lay twenty per annum. Guineas, eleven to the pound, lay sixty per annum.

The quality as well as the quantity of eggs is greatly owing to the keeping. Many times the above weights may be exceeded, at others not reached. Keeping and management have much to do with it. While it is to be regretted that so many of our valuable fowls appear to disadvantage, consequent on indifferent rations, there are many times when highly prized and tended specimens do honour and credit to the variety.—*Cor. Country Gentleman.*

WATER REGULARLY.

We would urge upon breeders the necessity of giving your poultry good, pure, fresh water at regular intervals, winter as well as summer. While no kinds of stock require so much water in winter as they do during the hot summer months, when the heat abstracts so much more moisture from the body than it does in the wintry months, yet, when fed on dry food, water is an absolute essential, else disease will ensue. When we realize the fact that so large a percentage of all living beings, whether animals or birds, is moisture—water—and so much is hourly thrown off by the heat of the body, we can arrive at some definite conclusions in regard to the needs of animal life in this direction.

We have seen so many fine flocks of fowls which were compelled to exist with what water they could obtain from the snow or some sheltered pool, during the winter, in the barnyard, or else go without till it chanced to rain, that we feel compelled to speak about the matter here, trusting our doing so may be the means of causing all who have thus far neglected this important matter to at once give it their attention, and thus alleviate the sufferings of the birds unnaturally deprived of water each day.—*American Poultry Journal.*

CARE OF FOWLS.

Poultry houses should be well whitewashed, and also sprinkled frequently with carbolic acid; size should be mixed with the whitewash, as it then fills up the crevices and minute interstices better, and does not easily rub off. Coops should also be washed over in the same way. The dust baths in summer require to be changed more frequently. In cold weather the various fowl parasites do not flourish so much or increase so rapidly, and therefore the places will not want so much attention. Fowls will never do well unless they are kept perfectly clean, they will keep themselves so if they are only given the proper requisites, and surely if they are profitable and useful to us we need not mind a little trouble taken on their behalf.

HIBERNIAN, after attentively surveying tourist's bicycle: "Arrah, now, an' sure that little wheel will never kape up with the big wan at all!"

THE DAIRY.

FRENCH DAIRYING.

The London *Field*, through a correspondent, gives the following, which will be interesting to Western dairymen, in relation to how dairy matters are conducted in France: The first dairy visited was that of Mme. Lequesne, approached through the French style of kitchen, with the copper for boiling the utensils and the stove for heating the milk room. The temperature was fifty-nine degrees Fahrenheit. The cream pans were placed within a sort of brick troughs into which water was continually flowing, and allowed to run over on to the floor of the dairy and away down a hole in the centre. In most dairies the milk pans or "peans" are set anyhow all over the floor; here order prevailed, and they were round the walls only, in single file. There is something strange in this cold water system; for while it cannot be commended too highly, it seems to be spoiled by the system of heating the dairy in order to assist in curdling the milk—a process begun by the addition of a little sour cream, and carried out because it is believed more cream is the result. The milk is skimmed twice: first, while the milk is sweet; and next, when it has curdled, the sour curd and whey being then given to the calves to fatten. The churn is one of the same Norman barrel type, and in churning the temperature is guessed at; indeed, it is accurately managed by constant practice.

Some of the best cows—and most of the animals on this farm are useful-looking Jerseys—give twenty litres a day, or twelve quarts. The average price obtained for the butter last year—and it takes the top price on almost all occasions in the market—was thirty-five sous, or cents, per pound. The butter goes to St. Lo, where some three to four tons of butter are sold every market day by the farmers in the neighbourhood. The cows were averging about eight pounds per cow per week.

The other place visited was the large dairy farm of M. Dupre. His system includes butter making, calf breeding and fattening, and pig keeping. The rent of his farm is 20,000 francs a year, and, to make his way, he says he has to work very hard; but making way means more than most people would interpret it to mean. The huge churn, used twice a week, holds 600 litres, and even then it is not large enough for the work. M. Dupre makes 100 kilos of butter per churning, or some 440 pounds per week. This butter is sent to the merchant direct, and brings top price. The skim and buttermilk goes to the pigs and calves, the former getting cut cabbage with it, and the latter absolutely nothing. The arrangement under the churn is also good. The buttermilk, instead of being carried, is drained directly away, and run across the farm-yard into a reservoir near the piggeries. The pigs are very numerous, and are of the Norman breed. They were on flags, slightly littered with straw, they are large, and fatten easily. The calves (uncut) are all stalled, and get nothing from meal to meal. Their houses are lengthy and roomy, and they are sent to Paris for veal.

The cows, a large number, some sixty or more, were all at grass, and were chiefly of the Norman breed, giving at their best twenty-eight litres a day, the best score running from twenty to twenty-four litres during the finest weather. In summer they get nothing but grass, but in winter mangels and carrots are largely used in addition to hay, and M. Dupre spoke highly of carrots. His buildings, like most of those on these farms, are not much to look at, but are strong, warm, and exceedingly nice inside. The milk room, contain-

ing sixty pans, was identical with those described, and plenty of water was used, the same brass cans and butter stools forming the entire furniture. Asked if he liked the cooling system, he admitted there was something good in it; but he should never depart from his own, which, he said, costs a good deal less. Butter workers he has no faith in, and machinery of all kinds appeared to be his abomination.

SUBSTITUTES FOR MILK.

Ingenious and partially successful attempts have been made to supply substitutes for milk. Some of the most interesting of these attempts were made in Paris during the time it was besieged by the Germans during the late war between France and Germany. An enterprising Englishman, Mr. T. Bowick, has patented a milk substitute which he calls Lactina, and of which, it is said, large sales are made, to be used in rearing calves. The exact composition is not made known, but malt, pea and bean meal, lentils, sugar and slippery elm bark are understood to be used. These substances are thoroughly cooked and finely ground. The prepared article is simply mixed with water without cooking. A good number of reports from those who have used it give it high praise, even when used as exclusive food for quite young calves.

While natural and unadulterated milk is unquestionably the best food for young animals, there seems no good reason why fairly satisfactory substitutes, in whole or in part, should not come into much more general use. We can readily have an abundance of water, and a reasonably satisfactory imitation of the solids ought to be possible. Many good calves are annually reared on skimmed milk, with some substitute for the fat removed in the cream. Oilmeal has most frequently been used and serves a good purpose, although not free from objections. A practical difficulty is in getting it satisfactorily mixed with the milk. Sometimes, too, it irritates the stomach and alimentary canal. It would be worth while to try a mixture of some such substance as slippery elm bark with it, as a correction of this last tendency.

For butter-makers a substitute for the fats of milk is all that is needed. But we have an increasing demand for milk for human consumption, and the question is an important one whether we cannot find a substitute for all the solids of milk, on which dairymen who supply milk to cities, as well as those who supply milk to cheese factories, can rear calves healthfully and with fair profit.—*Breeders' Gazette*.

FOOD FOR DAIRY COWS.

Rich old grass is the most natural and best of all cattle foods for producing milk of good quality. It is a grave mistake, practised by many intelligent farmers, to keep cows on poor, bare pasture, without any assistance in the way of house feeding. Many seem to imagine that land which has been tilled for many years without recuperation, until it has become useless for grain growing, is quite good enough for pasture purposes, and therefore stint their cows of a proper quantity of nourishment. Nothing could be more shortsighted and unprofitable. It requires, in the first place, a large proportion of food to keep the animal in a strong, healthy condition, and it is the surplus assimilated after making good the natural wastes that goes to increase the animal or for the production of milk. An animal of sound constitution, healthy digestion and well-developed lactical organs will prove a good milker.

Those who wish proper returns from their

cows should therefore see that they are properly supplied with healthy food and plenty of good, pure water. The quality of milk varies with the different breeds of cattle, their age, the food eaten, and at different periods of the year. The milk of old cows is much thinner than that of young ones of the same breed.—*Dairyman*.

THE "COMMON COW."

Let us say a good word for the much-abused "common cow." The family is a very large one, and, as is the case in most large families, there is much difference in character among the members. It is also hard to draw the family line. There are many common, or so-called native cows, which have but few good qualities, but there are also many that are of very good quality—especially for the dairy. There are large numbers of cattle with some slight crosses of some one or more of the improved breeds, but which are not recognized as belonging to any breed, and must be classed as "common stock." Among these there are some of more than ordinary good quality.

We have seen, in some of the dairies of the country, cows which could not be recognized as belonging to any distinct breed, but which would compare favourably with good cows of any breed in actual merit. As foundation stock on which to make crosses of the improved breeds, the cattle of the farmers of many sections of our country are well adapted, whether meat or milk be the point desired. There are good and poor common cattle, as there are good and poor specimens of any of the improved breeds. Where they have been long bred, with fair care and some wisdom in selection, the common cattle often have acquired an adaptation to their surroundings which no one of the improved breeds have on their first introduction.—*Breeder's Gazette*.

CREAM VS. WHEAT.

When at Algona, Kossuth county, a short time ago, we looked in upon the creameries there and learned these facts: The two factories there make and sell about \$1,000 worth of butter a day. This fact alone gave us food for thought. One thousand dollars per day in clear cash is taken in and paid out for labour, and to farmers who contribute cream to these factories. Not a farmer has to leave his farm, or a single team is taken from the corn field. Some of this cream is hauled twenty miles. Now, suppose, instead of cream, the same farmers who furnish the cream should bring \$1,000 worth of grain into Algona daily. Think of the time, teams and labour it would take to do this, especially such a season as this has been for bad roads. The mere mention of this carries with it its own conclusions for the thinking farmer.—*Fort Dodge Messenger*.

ADULTERATED BUTTER.

Among articles which are now freely adulterated is that of butter. For a long time this article was not known to be adulterated, but, of late, New York dealers who handle large quantities of butter have noticed that the tubs of butter from the West weigh six or eight pounds heavier than the usual fifty-pound tubs. This increase of weight to the same bulk baffled investigation for some time, but it has at last been found due to an adulteration with powdered soapstone. A firm in Cincinnati, known as the Cincinnati Facing Company, manufactures powdered soapstone, for legitimate purposes as well as for the adulteration of butter. Housekeepers have been for a long time accustomed to soapstone mantels, but to look for soapstone among their food will be an undesirable search.

HOME CIRCLE.

WHAT THEY ATE TWO HUNDRED YEARS AGO.

An Englishman's appetite had always been famous. He was fond of good solid eating. The farmer always had his bacon and his slices of salt mutton on hand, in addition to salt beef and barrelled herrings from Yarmouth. In all good houses there was an imposing array of salting-tubs. The art of stall-feeding was almost unknown, and fresh meat, if procurable in the winter, was very lean. It cost from a halfpenny to a penny per pound, which was equal to a penny or twopence of our money. Fresh fish was the luxury of the rich, obtained from their own ponds and streams. Salt fish was a common article of diet amongst the working-classes. Rye and barley bread were eaten by the poor. Wheat was often three pounds a quarter, or, as we should say, 120s. The prices of bread and beer were regulated by local assize. Horse bread was the name given to bread conveyed in packs; manchet was a fine wheaten loaf of six ounces; mesline bread was the penny loaf; and mayn bread, or demain, was the same as that used in the sacrament. Cakes of oats and spice were on all good tables.

Pies and pasties were made of all sorts of things. Page invited Falstaff and his friends to a dinner of "hot venison pasty," wound up by "pippins and cheese." The fee farm rent of Norwich consisted of twenty-four herring pasties, of the new season fish, flavoured with ginger, pepper, cloves, galingales, and other spices. On one occasion King James I.'s servants complained that four instead of five herrings were in each pasty, and that they were "not baked in good and strong paste, as they ought to be." Artichokes were also baked in pies, with marrow, dates, ginger, and raisins. Pilchard pasties were a Cornish dainty. In fact, the various pasties still to be met with in Devon and Cornwall are representative "survivals" of Elizabethan diet. The cooks were chiefly French, but a few of them were Italians.

Very few vegetables were used, and some were regularly imported and salted down. Cabbages and onions were sent from Holland to Hull. The Flemings commenced the first market gardens. Lettuce was served as a separate dish, and eaten at supper before meat. Capers were usually eaten boiled with oil and vinegar, as a salad. Eschalots were used to smear the plate before putting meat on it. Carrots had been introduced by the Flemings. Rhubarb, then called patience, came from China about 1573. The common people ate turnip-leaves as a salad, and roasted the root in wood-ashes. Watercress was believed to restore the bloom to young ladies' cheeks. In fact, all vegetables were regarded more as medicines than as necessary articles of food. Flesh meals were more believed in than anything else. They were eaten with a knife and a napkin. "The laudable use of forks," as Ben Jonson has it, did not commence until 1611, and was rare for many years after. The custom came from Italy, and the first forks were preserved in glass cases as curiosities. A jewelled one was amongst the New Year's gifts to Queen Elizabeth. Probably the absence of vegetables had something to do with the immense potations of the time. Iago said the English could beat all other nations, and were most "potent in potting." As tea did not come into England until 1610, and coffee until 1652, beer or wine was taken at all meals.—*England of Shakespeare.*

STIMULANTS AND TOBACCO.

The opinions of medical men as to the use of stimulants as an auxiliary to intellectual work are, says Arthur Reade, in "Les Mondes," too diverse to have much effect upon the habits of men of letters. Nor are they in much better agreement, he says, as to tobacco. That tobacco is a poison is certain; so are many things used, not only in medicine, but in food. The influence of tobacco on brain work has been the subject of interminable controversy, and the question has occupied all classes of society. One argument is that smoke helps men to think (to dream, rather), and it is asserted that the journalist smokes in writing, the man of society in solving a problem, the artist in painting, the clergyman in composing his sermon; that, in fact, every man great in science, in literature, in arts, climbs the ladder of fame with a pipe or cigar in his mouth. Tennyson has composed, it is said, his sweetest idylls under the influence of nicotine. Carlyle has taught the world philosophy, smoking.

Not the young only have these ideas. Moltke is a great snuff-taker, and it was due to snuff that Napoleon was so pitilessly expelled from Belgium. John C. Murray, in his volume on Smoking, undertakes to show when it is dangerous, neutral or beneficial to smoke. He claims that Raleigh, Milton, Dryden, Newton, Steel, Addison, Swift, Congreve, Bolingbroke, Pope, Johnson, Byron, Burns, Scott, Campbell, Moore, Dickens, spoke, wrote and sang under the influence of coffee, that plant of mystic power. But for those who have recourse to tobacco, he adds, their genius is generally but a lightning flash or a meteor, involving too great mental tension, likely to drag reason from her throne and plunge it in the night of chaos. Another medical authority says that a moderate use of tobacco is as necessary to the brain worker as moderation in the use of alcohol.

On the other hand, the adversaries of tobacco regard the idea that smoking helps sound thought as a most mischievous delusion; they maintain, on the contrary, that it renders men incapable of intellectual labour. Tobacco leads to physical and mental indolence. Mr. Reade considers that the use of stimulants is a subject which should be examined in the light of the experience of poets, artists, journalists, men of science, authors, etc., in Europe and America. M. l'Abbe Moigno makes the following remarks in reply to Mr. Arthur Reade's questions:

"Though I cannot offer myself as an example, because my temperament is too exceptional, my experience may have some degree of usefulness. I have published already a hundred and fifty volumes, small and great; I scarcely ever leave my work-table; I never take walking exercise; yet I

have not experienced any trace of headache, or brain-weariness, or constipation, or any form of urinary trouble, etc. Never, in order to work, or to obtain my full clearness of mind, have I had occasion to take recourse to stimulants, or coffee, or alcohol, or tobacco, etc.; on the contrary, in my case stimulants excite abnormal vibrations in the brain, unfavourable to its prompt and steady action."

NOON.

Even the mowers are resting awhile
Under the tree, by the old stone stile,
And scarcely a bird
In the wood is heard,
So softly to rest does the heat beguile,

Let us take our rest. It is long since morn,
The hot sun lies on the waving corn;
And everywhere
On the trembling air,
The sounds of labour abroad are borne.

So long ago did our toil begin,
As soon as the early day came in;
Now it is best
To stay and rest;
Counting the gains it was ours to win.

Alas! for the pain of the restless heart,
That sees how ill it has done its part,
Though half of the day
Has passed on its way;
Alas! for the musing that brings dismay.

But if we have set to our task with zest,
Honestly striving to do our best,
Till the heart was fired,
And the hands were tired,
Though the work be not finished we yet may rest.

So soft are the breezes that come at noon,
So sweet is the sound of a restful tune,
And dear is repose
Unto him who knows
There is waiting work he must take up soon.

So let us be glad of the respite given!
In the midst of our work is a thought of heaven,
And the deeper rest
Shall make us blest,
When a little longer our hands have striven.

—*Marianne Farningham.*

TEA CULTURE IN INDIA.

There seems abundant reason for the belief that, so far from the tea-plant being the distinctive and original product of China, it has its true birth-place in Upper India, and was transported across the Himalaya range into the Celestial Empire, where it was cultivated in a degenerate form very inferior to the true and parent stock. In Assam it is still to be found growing wild, keeping up its purity as an indigenous growth. With its discovery in that Province it has been thought the tea enterprise in India had its beginning. But it has been proved to have originated with Col. Kyd, who in 1870 formed a tea garden in Calcutta with plants from Canton—the nucleus of the well-known Botanic Gardens. It met with anything but encouragement, being looked upon as an unwelcome rival to the China tea trade, then a source of much profit to the East India Company.

The tea-plant is, it seems, to be found growing wild in the forests and jungles of Upper Assam, the Sylhet hills, the Himalaya and the great range of mountains that extend from thence through China to the Yang-tse-Kiang. *Thea assamensis*, though differing in minor points of structure and size, is pronounced by botanists to be specifically identical with the tea of China, partaking of the characters both of *Thea bohea* and *Thea viridis*, in its geographical distribution as to latitude approaching the black plant, and in its stations the green.

The date of its introduction into China seems past determination. It has always been felt to be a matter for surprise that no mention of tea-drinking should have been made by Marco Polo. Soliman, an Arabian merchant, who wrote an account of his travels in the East about the year 850 A.D., is quoted by Macpherson, in his "History of European Commerce with India," as stating that tea (*tsai*) is the usual beverage of the Chinese; yet no other mention of the custom has been met with prior to the Jesuit missions to China and Japan a little before the middle of the sixteenth century. Botero is quoted as speaking of it in 1590; Teixeira, a Portuguese, about the year 1600 saw the dried leaves of tea at Malacca, and Olearius in 1663 found it in use among the Persians, who obtained the leaves from China through the medium of the Usbeck Tartars.

Tea seems to have been first introduced into Europe by the Dutch East India Company, and to have found its way into London from Amsterdam. Tea, coffee, and chocolate are all mentioned together in an Act of Parliament of 1660, wherein a duty of 8d. is charged upon every galloon of chocolate, sherbet and tea made for sale. How great a novelty it was is shown by Pepys' well-known entry, Sept. 25, 1661: "I sent for a cup of tea (a Chinese drink), of which I had never drank before." It long continued to be imported in small quantities only, the East India Company having purchased in 1664 for presentation to the King 2 pounds and 2 ounces of tea. In 1678 they imported 4,713 pounds of tea, it being then for the first time thought worth their attention as an article of trade.—*Saturday Review.*

THERE is imminent danger of famine in Iceland. The past two winters have been exceptionally severe, and crops have been scanty, and many of the stock have died. It is desired that supplies of grain and other provisions be forwarded at an early date.

TENDENCIES TO BARBARISM.

More money is spent for tobacco than for bread; more for spirits than for wine; more for wine than for baths or means of preserving health and increasing vigour by exercise; more for amusement than for instruction; more for theatres than for churches. Actors, singers, dancers, are paid ten times as much as teachers and preachers are. The popular player who entertains people, makes them spasmodically laugh or cry, though he possesses but a thin vein of genius, enacts the same part continually, and is not associated with any of the means whereby human welfare is promoted, becomes in a year many times richer than the professor who devotes his life to the acquisition and the diffusion of knowledge, or the philanthropist who spends his soul for his kind. To excite the nerves is a surer way of gaining wealth and reputation than to strengthen the mind. To this extent we are still barbarians; to this extent has civilization failed to lift men and women above their instincts; to this extent have all noble influences—art, education, religion, love of country, love of man, love of God, failed to substitute intellect for inclination. When people who will not give dimes in charity give dollars to witness a foot-race or see a clown, it is pretty good evidence of the supremacy of appetite in the masses of mankind.—*O. B. Frothingham.*

STARTING PLANTS FROM SLIPS.

Peter Henderson, in the "Ladies' Floral Cabinet," gives the following directions for the domestic propagation of plants from slips: "Florists use what are called propagating benches for rooting cuttings when wanted on a large scale, as they usually are by them; at when an amateur, not having greenhouse facilities, wishes to root a few slips, there is no process that we can recommend better than what is known as the 'saucer system,' which, even at the risk of telling it to some of your readers who already understand it, I must again repeat, as there is no other plan that is so simple and so safe. Take any common saucer or plate, into which put sand to the depth of an inch or so. Then prepare the cuttings in the usual manner, and place them in the sand close enough to touch each other. The sand is then to be watered so as to bring it into the condition of mud. The saucer thus filled with slips may be placed on the window-sill and exposed to the sun. The cuttings must be fully exposed to the sun, and never shaded. But one condition is absolutely essential to success: *until the cuttings take root the sand must be kept continually saturated with water, and always in the condition of mud.* To do this the slips must be watered at least once a day with a very fine rose watering pot, and the watering must be done very gently, else the cuttings may be washed out. There is every certainty that ninety-nine per cent. of the cuttings put in will take root, provided they were in the proper condition when placed in the saucer, and that the temperature has not been lower than sixty degrees for greenhouse plants, or less than eighty degrees for tropical plants. By the saucer system a higher degree of temperature may be maintained without injury than by any other system of propagation, as the cuttings in reality are placed in water, and will not wilt, provided the water is not allowed to dry out. Still, the tender slip, until rooted, will not endure a long continuation of very high temperature, and we would advise that propagation be done at such seasons that they may have as near as possible a uniform temperature of seventy-five or eighty degrees in the sun-light. When rooted they should be potted in dry soil, such as is recommended for sowing seeds in. They should be planted in pots not exceeding two and a half inches in diameter, and treated carefully by shading and watering for two or three days."

THE STINGING TREE.

The "stinging tree" of Queensland is a luxurious shrub, pleasing to the eye but dangerous to the touch. It grows from two or three inches to ten or fifteen feet in height, and emits a disagreeable odour. Says a traveller: "Sometimes while shooting turkeys in the shrubs, I have entirely forgotten the stinging tree till I was warned of its close proximity by its smell, and have often found myself in a little forest of them. I was only once stung, and that very lightly. Its effects are curious; it leaves no mark, but the pain is maddening, and for months afterward the part when touched is tender in rainy weather, or when it gets wet in washing, etc. I have seen a man who treats ordinary pain lightly, roll on the ground in agony after being stung, and I have known a horse so completely mad after getting into a grove of the trees that he rushed open-mouthed at every one who approached him, and had to be shot. Dogs, when stung, will rush about whining piteously, biting pieces from the affected part."—*Youth's Companion.*

HOW TO CHOOSE A WIFE.

"A place for everything, and everything in its place," said the patriarch to his daughter. "Select a wife, my son, who will never step over a broomstick." The son was obedient to the lesson. "Now," said he pleasantly on a gay May day to one of his companions, "I appoint that broomstick to choose me a wife. The young girl who will not step over it shall have the offer of my hand." They passed from the splendid saloon to the grove; some tumbled over the broomstick and others jumped over. At length a young lady stooped and put it in its place. The promise was fulfilled, she became the wife of an educated and wealthy young man, and he the husband of a prudent, industrious and lovely wife. He brought a fortune to her, and she knew how to save one. It is not easy to decide which was under the greatest obligation; both were rich, and each enriched the other.

THE graziers of Australia and New Zealand of late years have reckoned the rabbits as their worst enemy. In many districts those prolific creatures have left so little grass that the sheep have been kept from starvation only by their transfer to other localities.

YOUNG CANADA.

TOM'S CYCLONE.

"Tom, Tom, where are you?" It was Tom's mother, standing in the doorway, calling him. A mysterious voice was heard coming from under an old carpet spread over the lawn: "Here I am, mother. I'm makin' a cyclone!" And a few seconds after Tom emerged, very red in the face, and covered with dust, looking as if he had been through a cyclone himself. "Making what?" asked Mrs. Higgins, in astonishment.

"Makin' a cyclone," repeated Tom, stoutly. "If you and Aunt Louise want to see it when it's done, you can come out. It will be ready in about half an hour. The admission will be five cents." And Tom crawled back again to finish his cyclone.

Mrs. Higgins went back to her work in the kitchen, but her curiosity was excited, and at the end of half an hour she called Aunt Louise, and they went out upon the lawn. Tom met them near the door, gravely demanded the five cents, which was paid after a little murmuring, and the two spectators were shown to some seats overlooking the entire scene.

Tom had called in nearly a dozen neighbours' boys to help, and the yard seemed alive with them. The old carpet was fastened by two corners to stakes driven into the ground. The other two corners were held up by two of the stoutest boys, so that the carpet was about two feet above the ground. Underneath the carpet had been built a miniature city of wooden blocks and mud bricks. The streets were laid out with great care, and, although some of the architecture was surprising, the general effect was imposing. Tom, with a stick in his hand, pointed out the different places of interest.

"This is a 'Piscopal Church. Here is a school-house. That is a row of saloons. This is a college; and this is a hotel. Are you ready? Blow!"

This sudden announcement rather took away the breath of the spectators. But as Tom afterwards explained, "cyclones always did surprise folks." The two boys at the loose end of the carpet shook it up and down vigorously. The other boys, stationed at the back and on the sides created currents of wind with brooms and tin pans, and old pieces of bagging, and added to the general confusion by deep groans supposed to represent thunder. This last was an idea from Tom's fertile brain. The effect caused by the up and down movement of the carpet and the straight ahead currents was exceedingly curious. The "'Piscopal" church was whirled completely around, and finally, to the intense delight of every one, was turned over and stuck, steeple downward, in the ground. The hotel was blown all to pieces, and scattered to the four quarters of the city, while the saloons fell over like a row of bricks, and lay almost quiet during the remainder of the tempest. Finally the performers stopped from sheer exhaustion, and the cyclone was over. The boys went home. Tom gathered up the ruins, washed himself, and came in to tea.

"Tom," said Aunt Louise, "what will you do with the proceeds of the cyclone entertainment?"

Tom paused in the midst of a big bite from a slice of bread.

"Send it to the cyclone sufferers," he responded promptly.

That night, when Mr. Higgins came home, his wife told him the story of the cyclone, and in the morning Tom's proceeds were sent off to Iowa, together with a generous cheque from Mr. Higgins himself.—*Advance.*

WHAT WILL YOU BE?

We see two boys standing side by side; both are intelligent-looking and kind-looking; but one becomes an idle, shiftless fellow, and the other an influential and useful man. Perhaps when they were boys no one could have seen much difference between them; when they were men, the contrast was marked. One became dissolute step by step; the other became virtuous step by step; as one went up the other went down.

It is a question of great moment—What will you be? One determines he will do right, and improve his powers and opportunities to the utmost. He is industrious, learns his business, becomes a partner or proprietor, and is known as a man of influence and power. Another does not determine to be bad, but is lazy, and neglects to improve his opportunities. He shirks work; he "fools around;" next he is seen with tobacco, and probably beer and whiskey follow; his appearance shows he is unhealthy; he does not do his work well, he loses his position, and becomes intemperate and probably a criminal.

There are many to-day who are standing at the parting-place. You can take *one* path, and you will go down as sure as the sun rises. If you prefer hanging around a saloon to reading good books at home, then you are on the road to ruin. If you do not obey your parents, if you run away from school, if you lie, if you swear, you will surely go down in life.

If a boy steadily improves his time, tries to learn his business, obeys his father and mother, is truthful and industrious, is respectful and pleasing towards others, he will succeed. No one can stop his doing well in life. He has determined that he will be a noble specimen of a man, and every good person will help him.

HOLD ON.

Hold on to your tongue when you are just ready to swear, lie, or speak harshly or use an improper word.

Hold on to your hand when about to strike, pinch, steal, or do any improper act.

Hold on to your foot when about to run away and disobey a father or mother—running away from study, or pursuing the path of error, or shame, or crime.

Hold on to your temper when you are angry, excited, or imposed upon, or others about you are angry.

Hold on to your heart when evil associates seek your company, and invite you to join in their mirth and revelry.

Hold on to your good name at all times, for

it is of more value to you than gold, beautiful houses, or gay fashionable clothes.

Hold on to the truth, for it will serve you well and do you good through time and throughout eternity.

Hold on to your virtue. It is above all price to you in all times and places.

Hold on to your good character, for it is and ever will be your best wealth.

And, best of all, get a firm hold of Jesus; then no evil can overtake you. He will carry you safely through this world; and in the end will take you to that home where you will be safe and happy for ever.

THE SENSE OF HONOUR IN BOYS.

There is a great confusion in boys' notions of honour. You should not go to the teacher with tales of your schoolmates, but when questioned by those in authority over you, parents, guardians, or teachers, it is your duty to tell who did a mischief or broke a rule, no matter what results to yourself or how unpopular you become. Boys have a false honour which hides mean and skulking actions in each other, which ought to be ridiculed out of them. The most cowardly injuries and injustice among boys go unchecked, and the weaker are abused and bullied in a way every decent boy should resent, because this false notion of comradeship leads them to lie, prevaricate, or keep silent to screen the guilty. Teachers and friends ought to put down this ignorant, petty "sense of honour," for something more intelligent and upright. When you know of a wrong, and keep silent about it when asked, you become a partner in the wrong, and responsible for its original meanness. It is a pity that boys and grown people do not carry the same strictness of principle they show in screening bullies and frauds into points of genuine honour and courage.

DON'T BLOCK UP YOUR WAY.

I was sitting in the office of a merchant not long since, when a lad about sixteen entered with a cigar in his mouth. He said to the gentleman:

"I would like to get a situation in your shop to learn a trade, sir."

"I might give you a place, but you carry a bad recommendation in your mouth," said the gentleman.

"I don't think it any harm to smoke, sir; nearly every one smokes now."

"I am sorry to say, my young friend, I can't employ you. If you have money enough to smoke cigars, you will be above working as an apprentice; and if you have not money enough, your love for cigars might make you steal it. No boy who smokes cigars can get employment in my shop."

"A word to the wise is sufficient."

Who wins? The boy or man of bad habits? No! The boy or man who can swear, cheat, lie or steal, without being found out? No! But he wins who is not ashamed to pray to God in the hour of temptation for help—for strength more than human when adversity overwhelms. He who reads God's Word and trusts it; who is not governed by the motive, Is it expedient? but is it right?—he wins.

Scientific and Useful.

DRIED APPLE CUSTARD PIE.—Put enough cooked apples through a sieve to make two pints; add milk to make it as thick as pumpkin; four eggs; sweeten; make into four pies.

CORN STARCH CAKE.—One cup butter; two cups sugar; one cup sweet milk; whites of six eggs; two cups flour; one cup corn starch, and two teaspoonfuls of baking powder; flavour to taste.

POUND CAKE.—One pound sugar, one pound butter, one pound flour, one dozen eggs. Scent with lemon. Stir the sugar and butter together until light. Add the flour, and bake in a moderate oven.

CRAB-APPLE PRESERVES.—Scald the apples; then remove them from the water, and to every pound of apples add a pound of sugar. Put the apples and sugar over the fire, and cook slowly till the fruit is tender.

CRAB-APPLE JELLY.—Put the apples into water enough to cover them, and boil until they crack open. Strain off the juice, measure and add granulated sugar in the proportion of a pint of sugar to a pint of juice. Boil twenty minutes.

HAVE WISTAR'S BALSAM OF WILD CHERRY always at hand. It cures Coughs, Colds, Bronchitis, Whooping Cough, Croup, Influenza, Consumption, and all Throat and Lung Complaints. Fifty cents and \$1 a bottle. Sold by dealers generally.

LAYER CAKE (VERY NICE).—Two cups sugar, one scant cup butter, whites of four eggs beaten to a froth, one cup sweet milk, three and a half cups flour, two teaspoonfuls baking powder, lemon flavouring. Bake in layers, and put together with icing, and raisins chopped fine.

PERUVIAN SYRUP has cured thousands who were suffering from Dyspepsia, Debility, Liver Complaint, Boils, Humours, Female Complaints, etc. Pamphlets free to any address. Seth W. Fowles & Son, Boston. Sold by dealers generally.

FRUIT SAUCES.—These are all very rich and delicious, for puddings, and used as a garnish also, they add greatly to the beauty of the pudding when ready for serving. The preserve juice is to be somewhat thickened with corn starch and boiled; then the fruit thrown in, and poured all over the pudding together. Marmalades and stiff jellies make good garnishes for pudding.

PRESERVED RHUBARB.—Four pounds of rhubarb—the red kind—four pounds of loaf sugar, and five ounces whole ginger. Peel and cut up the rhubarb into small pieces, add the sugar and ginger, and boil until clear. Pot and tie down as for other preserves. This should be of a brilliant red colour, and is very good for serving with blancmange, moulded rice, or rice flummary.

WHIPPED CREAM SAUCE.—Have a plate full of whipped cream highly flavoured; add the beaten whites of two or three eggs, and powdered sugar to the taste. Pile up a pyramid of this in the centre of a large platter, and arrange blancmanges, fruit puddings or corn starch puddings, cooled in cups around it, or pile the puddings in the centre of the platter, and pour the sauce around. A rich boiled custard can be used as a sauce in the same way.

BOILED APPLES.—Prepare as for baking a dish of medium-sized, pleasant-sour apples—red-skinned ones look the nicest, and seem to have more flavour to them. Partly cover with water, add half a cup of sugar, and boil until soft. Serve either warm or cold. They are much more delicious than when baked or stewed, and the syrup makes a finely flavoured sauce. Baldwin or Spitzbergen apples treated in this way, in the winter, are as much better than any other way of cooking as one can think.

TO CLEAN COAT COLLARS.—The following preparation will be found excellent: Two ounces of rock ammonia, two ounces of alcohol, one ounce each of spirits of camphor and transparent soap. Put all together in a large bottle, cover with one quart of soft water, and when well mixed and dissolved it is ready for use. Spread the coat on a clean table, take an old nail brush or one of the small scrubbing brushes sold as toys, dip it in the mixture and scrub the dirty parts thoroughly. Apply plenty of this, take clean warm water and go over it again. Hang out until partly dry, and press with a heavy iron on the wrong side.

MARMALADE.—A delicious apple marmalade prepared carefully will keep in perfect condition throughout the season, and is always a welcome addition to breakfast in winter. Pare, core, and cut the apples in small pieces; put them in water, with some lemon juice to keep them white; after a short interval take them out and drain them; weigh, and put them in a stewpan with an

equal quantity of sugar; add grated lemon peel, the juice of a lemon, some cinnamon sticks, and a pinch of salt. Place the stewpan over a brisk fire, and cover it closely. When the apples are reduced to a pulp, stir the mixture until it becomes of a proper consistency, and put the marmalade away in small pots.

BISCUITS WITHOUT CREAM.—Some time since a lady asked what she could use instead of sour cream in cookery. For biscuits I take two cupfuls of sour milk (buttermilk is best), and add salt and soda as when cream is used. I mix this together, and when of the consistency of good, thick batter, I add half a cupful of melted drippings. This must be turned on the dough, a few drops at a time, stirring vigorously all the time. More shortening can be added if one desires them richer. Properly mixed, they cannot be told from cream biscuits. I used to find it a great deal of trouble to use beef drippings in baking, as the fat would harden so much sooner than lard or butter, but after a few failures, I tried this way of adding it, and was very much pleased with the result.—*Country Gentleman.*

CHAPPED HANDS can be cured easily by taking a tablespoonful of laundry starch, stir up with cold water and bring it to a boil; add a teaspoonful of kerosene and bathe the hands at night. Or take a pint of soft water and stir in a tablespoonful of Hurd's magical mixture, and soak the hands well in it; then dry them well over a hot stove. If one is careful to dry her hands thoroughly after washing them, there is no danger of having chapped hands, and an ounce of prevention is better than a pound of cure. Pulverized soapstone is a good remedy for rough hands, and makes them as smooth as satin. I pulverize it with a file or grater, and sift it so as to get out every bit that is not fine. I then put it in a spice box with a perforated cover, and it is ready for use at all times on man or beast. For galls on horses, or blisters on your hands, it is equally nice and handy, and for a nursery powder it cannot be equalled, as it is a wonderful absorbent, and holds a great deal of moisture.

GOOD PRESSED BEEF.—We commend to our many new housekeeping readers the following, which has been partly given in former years. Take any fresh lean beef—the cheaper pieces, as the upper part of the leg above the "soup pieces," answers very well; that containing tendons or plenty of gelatine is even preferable, and some of the round steak or any other lean portion may be used with it. Boil closely covered until so tender that the meat will fall from the bones. (It is better to keep a closely fitting pan of cold water over the cooking kettle, to condense and cause to fall back the rising steam containing the escaping flavour.) Use only so much water as is needed to prevent burning. Take out the meat, mix and chop it fine. Put it into a tin pan or other deep dish. Skim off any excess of grease from the cooking liquor, and add to it a tablespoonful of Cooper's or other good gelatine for each three or four pounds of meat. When dissolved pour it into the chopped meat; put on it a large plate or tin that will fit into the dish, and place over this twelve to twenty pounds weight—flat-irons will answer. When cold it is a solid mass, from which thick or thin slices may be cut; they are marbled in appearance, and are very excellent for sandwiches, or for a tea or breakfast dish, and will keep several days even in warm weather if set in a cool place. It is tender, juicy, digestible, nourishing, convenient and economical withal.—*American Agriculturist.*

WHAT'S WANTED!

S. S. PAPERS.
S. S. PAPERS.
S. S. PAPERS.
S. S. PAPERS.
S. S. PAPERS.

Just what is required in Canadian Sunday Schools. Three different papers. Pronounced by the Press to be superior to anything published in the Dominion. Golden Hours and Early Days, bright, beautifully illustrated, un denominational papers, are suited to any School; while the Sabbath School Presbyterian, as its name indicates, is adapted to Presbyterian Schools. It is claimed for the above publications that they are as cheap as imported papers of the same class, and altogether better suited to young Canadian readers.

SEVERAL COPIES forwarded to any address free of charge on application.
C. BLACKETT ROBINSON,
Publisher
5 Jordan Street, Toronto.

CHEAP SERIES OF LECTURES.

FIVE LECTURES BY
REV. JOS. COOK.

8 pp., PRICE 20 CENTS.

- I.—UNEXPLORED REMAINDERS IN CONSCIENCE.
- II.—SOLAR SELF CULTURE.
- III.—PHYSICAL TANGIBLENESS OF THE MORAL LAW.
- IV.—MATTHEW ARNOLD'S VIEWS ON CONSCIENCE.
- V.—ORGANIC INSTINCTS IN CONSCIENCE.

Copies mailed to any address on receipt of price.

SECOND FIVE LECTURES.

45 pp., PRICE 20c

- VII.—THE FIRST CAUSE AS PERSONAL
- VIII.—IS CONSCIENCE INFALLIBLE?
- X.—CONSCIENCE AS THE FOUNDATION OF THE RELIGION OF SCIENCE.
- XI.—THE LAUGHTER OF THE SOUL AT ITSELF.
- XII.—SHAKESPEARE ON CONSCIENCE.
- XIII.—MAUDSLEY ON HEREDITARY DESCENT.

Copies mailed to any address on receipt of price.

C. BLACKETT ROBINSON,
Jordan Street, Toronto.

THE CATHOLICITY

OF THE
Presbyterian Church,

By Rev. Professor Campbell, M.A., Presbyterian College, Montreal.

It is well reasoned throughout, contains passages of great eloquence, and proves its author to be a master in Ecclesiastical History. It is in the form of a neat little pamphlet of thirty-two pages, being the first of a series of "Tracts on Presbyterian Topics" which the Publisher intends giving to the world. We must say that he has made a good beginning.—*CANADA PRESBYTERIAN.*

Price 10 cents, or \$1 per dozen. Mailed to any address, postage prepaid on receipt of price.

C. BLACKETT ROBINSON,
Jordan Street, Toronto. Publisher

BOOKS, PAMPHLETS, CATALOGUES,

And every description of

PRINTING

Promptly executed at fair prices.

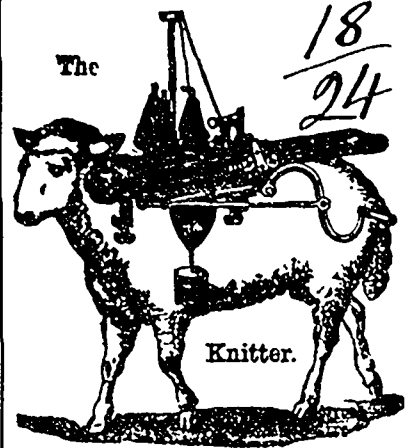
Eight Modern Steam Presses

and a full supply of

NEW TYPE!

Orders from a distance will have careful attention; and estimates furnished on application.

C. BLACKETT ROBINSON,
5 Jordan Street, Toronto.



Lamb Knitting Machine,

For Family or Manufacturers' use.
KNITS SOCK OR STOCKING complete from top to toe without seam, with regular hand-made heel. Also knits **CARDIGAN JACKETS, SCARFS, CLOVES, NUBIAS, &c.** Sets up its own work, narrows and widens the same, and is the most complete and perfect Knitting Machine made.

J. M. STATTON
44 Church Street, Toronto,
Sole Agent for the Dominion.

WEST END HARDWARE HOUSE,

313 Queen Street West, - Toronto

JOHN L. IRBY

Builders' and General Hardware, Paints, Oils, Dry Colours, Varnishes, &c. House Furnishings, Plated Ware, Cutlery, Woodensware,

EVERYTHING IN THE LINE.

Call and see him.

J. F. MUIR & CO.,

Manufacturers of

HATS, CAPS,

and

FURS,

51 King St. West, Marshall's Buildings,

TORONTO.



WILL CERTAINLY CURE Coughs, Colds, Hoarseness, Sore Throat, Bronchitis, Influenza, Asthma, Whooping Cough, Croup, and every Affection of the Throat, Lungs and Chest, including Consumption. Sold by all Druggists.

A. W. HARRISON,

Financial and Real Estate Agent,

30 Adelaide St. East,

TORONTO.

Money to Lend at lowest rates of interest. Mortgages bought.

Farms Bought, Sold, Rented or Exchanged. Charges Moderate.

I have a large quantity of **MANITOBA and UNITED STATES LANDS** for sale. As investments or speculations these are worth looking at.

A. W. HARRISON,
30 Adelaide St. East,
TORONTO ONT.

TORONTO WHOLESALE MARKETS.

OFFICE RURAL CANADIAN, Toronto, Sept. 12th, 1882.

PROVISIONS are active and maintain their value well; only the grain trade is dull and lifeless.

FLOUR AND MEAL.—Stocks of Flour in store are very trifling. Transactions are limited to occasional cars of superior extra, which has changed hands at \$5.35, and of spring extra, which sold at \$5.20. There is neither strong bakers' superfine nor fine in this market; the first-named would bring probably \$5.20. Of course, these prices are for old wheat flour, the presumption being that new will be worth less and prices tend lower. The tendency in the west is downward, and in Britain the same is the case in a more marked degree. Oatmeal continues nominal at about \$5.75, as there is none in the market; the market is unsettled, however. Cornmeal quiet at about former prices. Bran steady at \$13.

GRAIN.—The newly harvested grain coming into market unsettles prices meantime. The quotations we give are for old grain, new wheat only bringing 6c. to 8c. per bushel less. Our quotations are almost nominal for Wheat, and scarcely any No. 1 is to be had. Street prices for spring are from \$1.15 to \$1.20, and for fall \$1.10 to \$1.15. British markets for breadstuffs have been declining daily for a week, and the west, too, is lower, though the prices hold up better in Chicago. The latest Beerbohm report is "dull and unchanged at quotations." Old Oats are scarce, and No. 1 would bring, perhaps, 50c. We quote new 40c. and 37c.; there has been a sale of some musty at 35c. The prospect appears that the bulk of the Barley will be No. 2 or worse. It is early yet to attempt to state figures, but those we quote will probably represent opening prices. Street prices range from 75c. down to 50c. Peas are unchanged, as is Rye, while Corn is weaker.

HIDES AND SKINS.—There has been an advance of 1c. per lb. since last issue on green hides, the butchers now getting 8 1/2c. to 9 1/2c. for cows and steers. Cured sell at 9 1/2c. for cows and 10 1/2c. for steers. The supply is light, and prices are strong at the advance. Sheepskins have also advanced in price another 10c., and now stand at 90c. to the butchers; this is regarded as above their value, and the causes of the rise are entirely local. Calfskins nominal; season over. Tallow continues very scarce, none at all being in market; rough has advanced 1/2c.; for rendered 9 1/2c. to 10c. is asked.

PROVISIONS.—Hog products are good value, and are selling slowly but steadily. The Butter market still remains in the same depressed condition as last reported, with positively no inquiry for export; the only sales being made are to the city trade, of choice quality at from 18c. to 19c. Stocks in the country are excessive, and holders are nervous about the prospect. Cheese continues dull and steady; factorymen decline selling their August make at shippers' bids of 11c.; there is a fair jobbing trade here at 11 1/2c. to 12c. Bacon.—There has been an improved demand during the past week, and stocks are considerably reduced, at unchanged prices.

WOOL.—There is no move in Flax; prices are nominal at 18c. to 20c. For medium and fine grades the demand from mills has been well maintained, and prices are firm. It is worthy of notice that old country wools as to manufacturing and mercantile affairs in woollens show an improvement, and an advance of 1/2d. to 1d. is announced in prices of wool.

APPLES.—The supply of American apples, says the Montreal Gazette, continues large, and is likely to keep so for some time. "One firm in this city has now about 1,000 bbls. on the way here from St. Louis, which can be put on board steamers in this port (hand) at a cost of about \$1.80 per bbl. The supply from the St. Louis section of the States, it is said, can be kept up as long as the weather will permit of their being shipped. As regards Canadian apples, advices from Oshawa, Ont., state that sales have been made in that district at \$2 50 per bbl. f.o.b. cars. Among dealers in this market there appears to be a general inclination to be in no hurry about purchasing, as the opinion obtains that we shall have all the stock we can handle at pretty reasonable rates. Sales are reported in round lots at \$2 to \$3 per bbl., one lot of over 100 bbls. being reported sold as low as \$1.50 per bbl., but the quality, it is needless to say, was poor."

The British Canadian Loan and Investment Co., (LIMITED.) Head Office, 30 Adelaide Street East, Toronto. CAPITAL AUTHORIZED BY CHARTER, \$1,000,000. The attention of Clergymen, Managers of Trust Funds, and Investors generally is invited to the CURRENT DEBENTURES issued by this Company furnishing a READY INVESTMENT AT A FAIR RATE OF INTEREST, AND UNDOUBTED SECURITY. For further particulars apply to R. H. TOMLINSON, Manager. Toronto, 12th September, 1882.

EVANS & ANDERSON, MANITOBA AND NORTH-WEST LAND MART! Farms and City Property in all parts of Manitoba and North-West cheap, and upon easy terms of payment. EVANS & ANDERSON, 58 Church Street, Manitoba and North-West Land Mart.

CANADA PERMANENT LOAN AND SAVINGS CO. INCORPORATED A.D. 1855. Paid up Capital, \$2,000,000. Reserve Fund, 1,000,000. Total Assets, \$3,000,000. THE COMPANY receives money on deposit at current rates of interest, payable half-yearly, the principal being repayable on demand or on short notice. Also receives money for more permanent investment, for which Debentures are issued with interest coupons attached. The Capital and Assets of the Company being pledged for all moneys received for investment, Debenture holders and Depositors are assured of perfect safety and regularity in payment of interest. Office—Company's Buildings, Toronto. J. HERBERT MASON, Manager.

MURDOCH & WILSON, LAND, LOAN AND INSURANCE AGENTS, VALUATORS, ETC. OFFICE: 14 VICTORIA STREET, TORONTO, ONTARIO. Estates Managed. Rent Collected. Property Bought, Sold and Exchanged. Valuation made of Farms and City Property, all matters in connection with Real Estate and General Commission promptly attended to. Correspondence solicited. \$100,000 to loan on farm or city property at lowest rates of interest. Send for our mammoth Farm List. KENNETH MURDOCH. THOMAS WILSON.

Choice Farms for Sale. The undersigned have for sale a large number of improved Farms in Ontario on easy terms. Also several thousand acres of Farm Lands in Manitoba, near Winnipeg, and Ste. Anne la Prairie, from three dollars to ten dollars per acre. List of lands will be furnished on application. BANKS BROTHERS, 60 Church Street, Toronto.

NORMAN'S ELECTRIC BELT INSTITUTION, ESTABLISHED 1874. 4 QUEEN'S ST. TORONTO. Nervous Debility, Rheumatism, Lame Back, Neuralgia, Paralysis, and all Liver and Chest Complaints immediately relieved and permanently cured by using these BELTS, HANDS and INSOLES. Circulars and consultation free.

PERUVIAN IRON TONIC SYRUP. Cures Dyspepsia, Nervous Affections, General Debility, Fever and Ague, Paralysis, Chronic Diarrhoea, Boils, Dropsy, Humors, Female Complaints, Liver Complaint, Remittent Fever, and all diseases originating in a bad State of the Blood, or accompanied by Debility or a low State of the System.

TO PRINTERS. For Sale, at a Low Price AND ON EASY TERMS, One Wharfedale Press, bed 37 1/2 x 47 1/2. Four rollers. One Hoe Drum Cylinder Press, bed 27 1/2 x 33 1/2. Two rollers. These Presses are in good order, and capable of doing good work. They can be seen at THE PRESS-STEAMER Office, No. 5 Jordan Street, Toronto, Ont. where terms, etc., will be furnished.

LIBRARY EDITION OF STANDARD WORKS in Large Demy 6vo., with Steel Plates, Vignettes, Handsomely Bound, Roxburg Style, gilt top, \$1.75 each. Mailed free. The Arabian Nights' Entertainments, with 100 Illustrations; Josephus; The Whole Works of Flavius Josephus; The Works of Jonathan Swift, D.D. (carefully selected); The Complete Works of Daniel Defoe; The Works of Tobias Smollett; The Canterbury Tales and Faerie Queene, etc., etc. Fielding; The Writings of Henry Fielding. CLOUGHER BROS., Booksellers and Stationers, 27 King Street West, Toronto.

TO MINISTERS. Marriage Certificates NEATLY PRINTED ON FINE PAPER, IN GREEN, GOLD & CARMINE Mailed to any address, postage prepaid, at 50 cents PER DOZEN; OR TWENTY-FIVE for \$1.00. ALSO MARRIAGE REGISTERS, 25 CENTS. BAPTISMAL REGISTERS, 75 CENTS. COMMUNION ROLLS, ETC., ETC., ETC. C. BLACKETT ROBINSON, Jordan Street, Toronto, Publisher.

JUST PUBLISHED. 44 pp. Price 10 Cents. DOCTRINES OF THE PLYMOUTH BRETHERN. By Rev. Professor Crocker, M.A., Magee College, Londonderry. A comprehensive and very complete exposition in short space of the Errors of Plymouthism. Mailed to any address, postage prepaid, on receipt of price. Wherever Plymouthism is trying to get a foot-hold within the bounds of Presbyterian congregations, parties would do well to circulate copies of this pamphlet. In quantities, \$8 per 100. C. BLACKETT ROBINSON, Jordan Street Toronto, Publisher.

THE SABBATH SCHOOL Teacher's Companion. BY REV. JOHN McEWEN, The Teacher and Senior Scholar's Companion to the Old Testament Series of the International Lessons, beginning with the Book of Genesis, on the first Sabbath of every month ready. This book will be found to meet a felt want in the International System of S. S. Lessons. It presents the entire Book of Scripture in a connected and progressive form—taking up the dropped links of connection between the lessons. It has a Normal Class Exercise on Bible Investigation, illustrated by the Book of Genesis. Price 5 cents per copy, or \$5.00 per dozen. Sent to any address, post free, on receipt of price. C. BLACKETT ROBINSON, Publisher. 5 JORDAN ST., TORONTO.

RECENT PAMPHLETS. "The Rule of Faith and Private Judgment." A lecture delivered at the close of the session of Knox College on 7th April, 1880, by the Rev. Prof. McLaren. 24 pages. Price 10 cents. "Professor McLaren has done well to accord to the wishes of his friends by giving to the public in a neat and permanent form his exceedingly able lecture. We hope that in this form the lecture will receive, as it certainly deserves, a very wide circulation."—Canada Presbyterian.

"Hindrances and Helps to the Spread of Presbyterianism." By Rev. D. E. MacVicar, LL.D. Price 10 cents or \$6 per 100. "It should be read by every Presbyterian in the land."—Bowmanville Statesman. "Worth a score of pastoral letters."—Rev. David Wishart. "Doctrines of the Plymouth Brethren." By Rev. Prof. Crocker, M.A., Magee College, Londonderry. Price 10 cents. "A comprehensive and very complete exposition in short space of the errors of Plymouthism."—Canada Presbyterian.

"The Perpetuity of the Reign of Christ." The last sermon preached by the late Rev. Alex. Topp, D.D. Price 10 cents. "The Catholicity of the Presbyterian Church." By Rev. Prof. Campbell, M.A. Price 10 cents. "Contains passages of great eloquence, and prove its author to be a master in Ecclesiastical History."—Canada Presbyterian.

"The Inspiration of Scripture." A lecture by Rev. P. McLaren, Price 10 cents. "The more extended circulation which will thus be given to it is not greater than it deserves."—Canada Presbyterian. Mailed to any address post free, on receipt of price. C. BLACKETT ROBINSON, Jordan Street, Toronto, Publisher.

MARRIAGE CERTIFICATES, Suitable for any Province, and may be used by the clergymen of any denomination, beautifully printed on fine heavy paper in carmine, blue and gold, constantly on hand, 50 cts. per dozen. Twenty-five copies mailed to any address, free of postage, for ONE DOLLAR. C. BLACKETT ROBINSON, P.O. Drawer 2007 Toronto, Ontario—5 Jordan Street.

PRESBYTERIAN Normal Class Teacher, OR PREPARATORY COURSE OF STUDY, Designed to help the present and future Christian worker in the Church to a larger grasp of the Word of God, and to aid in preparing them for the important office of Sabbath School Teachers. BY REV. JOHN McEWEN. Every Sabbath School Teacher, as well as every intending teacher, should have a copy of this work. Price 30 cents; in cloth, 50 cents. Mailed to any address free of postage. C. BLACKETT ROBINSON 5 Jordan St., Toronto.

USE A BINDER. Subscribers wishing to keep their copies of the PRESBYTERIAN in good condition, and have them on hand for reference, should use a binder. We can send by mail. A Strong Plain Binder for 75 Cts., POSTAGE PRE-PAID. These binders have been made expressly for THE PRESBYTERIAN, and are of the best manufacture. The papers can be placed in the binder work by week, thus keeping the file complete. Address, OFFICE OF THE PRESBYTERIAN, Jordan Street, Toronto.