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.

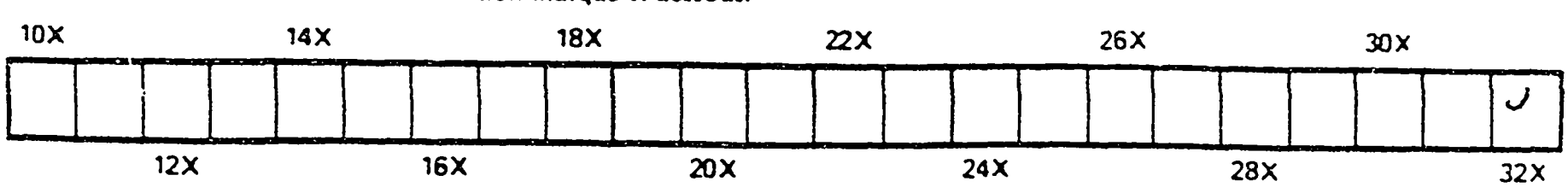
- ☐ Coloured covers/ Couverture de couleur
- ☐ Covers damaged/ Couverture endommagée
- ☐ Covers restored and/or laminated/ Couverture restaurée et/ou pelliculée
- ☐ Cover title missing/ Le titre de couverture manque
- ☐ Coloured maps/ Cartes géographiques en couleur
- ☐ Coloured ink (i.e. other than 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.



THE RURAL CANADIAN.

Vol. II. No. 4. *Toronto, April 2nd, 1883.* $1 per annum, in advance.

RURAL NOTES.

A good dose of potash over the ground and a wash of the tree each spring with lye, a New Jersey peach-grower says, will both prevent and cure the yellows.

It is proposed to introduce the culture of flax into Southern Australia. It is thought that the seed and lint can be exported cheaper than any of the crops generally raised.

Strawberries should be well mulched in the spring, this being essential to the gathering of a clean crop of berries. The mulch also protects the plants against the effects of drought.

Scions for grafting should be cut before the buds swell, and kept in a cool, damp place until used. Grafting work may be carried on from the time when the buds are bursting to the end of May.

When our farmers can be convinced that they may increase the present average yield 100 per cent. by a small increased outlay there will be greater effort made to accomplish that end.—*Rural Home.*

Mr. Peter Henderson is quoted as saying that the future garden seed of this country will be produced in California. The business there is already important; 20,000 pounds of lettuce seed was shipped East last season and 80,000 of onion.

For condensing milk use a boiler having a water jacket, like a glue kettle, or one vessel inside another with water between them to keep the milk from scorching. Condense to the consistency of syrup, sweeten with sugar, and pack in sealed glass jars.

Portable pens for pigs, partially roofed in to afford shade during the hot hours, are very useful on the farm. They may be moved every day or two; if this be done the pigs will be given fresh earth and grass continually, and the ground will be richly and evenly manured.

An Iowa correspondent of the *Germantown Telegraph* makes his granary distasteful to rats by daubing all the angles on the outside of the building with hot pine tar for the width of three or four inches, and also any seam or crack where a rat or mouse can stand or gnaw.

A Pennsylvania girl thinks the advertisements of agricultural societies are the best commentaries on the management of their fairs, "Look at the premiums," she says: "For the fastest trotting horse, $50; for the next fastest, $25; for the best team of work horses, $5; for the best loaf of bread, 50 cents."

The Germantown *Telegraph* says: "Our judgement and practice have always been to treat the soil in which the trees, fruit and ornamental, grow, as far as can be done, the same as soil that is cultivated for vegetables or general farm crops, and we have always been satisfied with the result."

Roses, fuschias and many other flowering plants will sustain unhurt for a short time a temperature of 120 degrees. If infested with insects, a good and safe remedy is to dip the plants in water of say 120 degrees temperature. Ferns, petunias, begonias and many other plants of soft texture will endure 140 degrees.

Early chicks well fed and cared for are generally the finest and best. They have, too, the greatest vitality, and are useful for breeding purposes the next year. A good supply of animal and vegetable food, with fresh air and a scant ration of corn, will promote a healthy growth. Corn produces an excess of animal heat.

Black Poland fowls have solid merits, but they are subject to cold and roup. In warm, genial situations, on well-drained ground, and with shelter to which they can resort during rains, the Polands will do well and repay their owners with an abundant supply of eggs. Their flesh is good for the table, they are prolific layers and never want to sit.

Bare spots in lawns are generally caused by standing water, for which draining is the best remedy. It may also be necessary to level up the soil, in which case the work should be done in early spring and the new ground seeded. Three or four hundred pounds of superphosphate of lime to the acre, if the soil is poor, will make a great change.

Don't read books and papers which suggest thoughts you would not utter. They stain the soul, they burn the heart. Can you thrust your hand into soot and bring it out white and clean? Can you singe your clothes and not have the smell of fire on your garments? Beware of books which are suggestive of evil, though they may be clothed in purple and gold of fine language.

The blinder was a stupid invention. It makes the life of a horse miserable, and only cultivates the evil which it is intended to cure. A rational mode of treatment is worth more than all the blinders in the world. What would the servant man think of it were he sent to the field every morning with his eyes walled in so that he could see nothing but the work straight ahead of him? He would make a row over it certainly.

"Anything will do for sheep, such as barren hillsides, rocky, worthless wastes, or among the scrubs," is the advice once given by an enthusiast on sheep breeding. The farmer who adheres to such a system thinks "there is no money in sheep." We admit that sheep will consume much that would otherwise be lost without their aid, for they are industrious foragers, and not very particular in taste, but for all that they must be carefully provided for in every respect if the best results are desired.

The Hessian fly did a good deal of injury to the wheat crop of Illinois last fall. A recent report estimates its extent at 25 per cent. of the crop. Favourable reports come from Missouri and Kansas, and unfavourable ones from Indiana and Michigan. In the last named State the wheat fields were covered for several weeks with a thick coating of ice—the result of February's thaw and the severe cold spell that succeeded it. The condition of the crop in Ontario will be watched with interest.

Mr. A. R. Whinney, says the *Farm Journal*, sets the walnut trees in rows a rod apart each way. Among these he plants soft maples in rows four feet apart each way. The maples are set in the spring at one year old, 2,720 plants per acre. These can be bought very cheap, or be grown from seed. The walnuts can be grown from seed or be bought cheap of any nurserymen. The maples grow rapidly, shade the walnuts, inducing an erect growth without branching. The ground is cultivated until the maples are cleared off, which is done after the walnuts are well established with straight trunks, when the ground is seeded to green grass, and becomes a pasture field. Such plantation will grow into value rapidly, especially as the price of walnut timber annually advances.

It is a tradition among farmers, remarks a correspondent of the *N. Y. Tribune*, that *plaster* is better when freshly-ground. It may be a mistake, but my supply is always obtained in winter. The only disadvantage is, it is apt to get a little lumpy, but the lumps are easily crushed. By waiting until needed, work on the farm has to be stopped, which is often inconvenient, and on this account the plaster is not obtained. Its use is, in my judgment, so important in putting in seeds that I prefer to get it ahead of time, so as to make sure of having it. The grain is wetted with barnyard juice, and as much plaster mixed with it as will stick to it, and it is sowed in this form with decided advantage. On fields seeded with grass, plaster is sown broadcast to stimulate the growth of the young plants after the seed comes up. Plaster is cheap, and will always pay when applied in this manner.

FARM AND FIELD.

BONES AND ASHES.

A [correspondent in the *Country Gentleman*, asking about the value of ground bone compared with that which has been reduced by the use of wood ashes, gives some of his personal experience in the preparation and use of phosphates that is worth reading and acting upon. He says:

"After an experience of several years in softening bones by the use of ashes, I think that each farmer can easily prepare an amount sufficient for his own farm wherever the bones and ashes can be reasonably purchased. Bones are worth $8 to $10 per ton, and ashes $15 per hundred bushels, in this country, and the cost of preparing them need only be a trifle.

"I first began softening them by placing them in alternate layers with ashes in a large kettle, and boiling moderately for two or three days. When softened so that a stick could be easily thrust through the mass, they were boiled nearly dry, and were shovelled into a plank box and ground under a hoe in the same manner that mortar is mixed for plastering. If not dry enough to handle, a few dry ashes were added. This method requires some labour, as the fire needs attention several times each day. If the kettle is set in a brick or stone arch, a cord of wood will be sufficient for two or three tons of bones. The large bones should be broken so that all may soften together. Three bushels of ashes are enough for one hundred pounds of bones.

"After preparing in the above manner what I wanted for use on my corn and potatoes in the Spring of 1881, I had a half ton of bones left through the Summer. In October these were placed in a plank box with ashes, and all the water added that the ashes would retain without leaching. The box was left uncovered and the rain kept the ashes damp, but was not enough to leach them. In May following the bones were softened so that a shovel could be easily passed through them, and nearly all were readily pulverized and made fit for use. The labour and expense is much less in this way than by the use of the kettle and fire. I have since used a bin made by laying a floor of two inch planks on joists six or eight inches from the ground. The floor is twelve by twelve feet, and the sides of the boards five feet high, kept in place by strong stakes driven into the ground. This is large enough to hold four hundred bushels of ashes and four tons of bones, which is as much as I care to use in one year. So far it has not been necessary to cover the bin, as the rain does not leach through.

"I have used this mixture of bone and ashes at the rate of twenty-five bushels to the acre on corn and potatoes with good results. A small handful is applied to each hill after planting, using care to scatter it over a space a foot or so in diameter. I have used some of the best brands of superphosphate for several years, but think the home preparation of bone and ashes is better for potatoes."

SUCCESS IN LIFE.

Without unremitting labour, success in life, whatever our occupation, is impossible. A fortune is not made without toil, and money unearned comes to few. The habitual loiterer never brings anything to pass. The young men whom you see lounging about waiting for the weather to change before they go to work, break down before they begin—get stuck before they start. Ability and willingness to labour are the two great conditions of success. It is useless to work an electrical machine in a vacuum, but the air may be full of electricity, and still you can draw no spark till you turn the machine. The beautiful statue may exist in the artist's brain, and it may also be said to exist in a certain sense in the marble block that stands before him, but he must bring both his brains and his hands to bear upon the marble, and work hard and long, in order to produce any practical result. Success also depends in a good measure on the man's promptness to take advantage of the rise of the tide.

A great deal of what we call "luck" is nothing more nor less than this: It is the man who keeps his eyes open, and his hands out of his pockets, that succeeds. "I missed my chance," exclaims the disappointed man, when he sees another catch eagerly at the opportunity. But something more than alertness is needed; we must know how to avail ourselves of the emergency. An elastic temperament, which never seems to recognize the fact of defeat, or forgets it at once and begins the work over again, is very likely to insure success. Many a great orator has made a terrible break-down in his maiden speech. Many a merchant loses one fortune only to build up another and a larger one. Many an inventor fails in his first efforts, and is at last rewarded with a splendid triumph. Some of the most popular novelists wrote very poor stuff in the beginning. They were learning their trade and could not expect to turn out first-class work until their apprenticeship is over. One great secret of success is not is not to become discouraged, but always be ready to try again.

EGGS AS FOOD.

Eggs, at average prices, are among the cheapest and most nutritious articles of diet. Like milk, an egg is a complete food in itself, containing everything necessary for the development of a perfect animal, as is manifest from the fact that a chick is formed from it. It seems a mystery how muscles, bones, feathers and everything that a chicken requires for its perfect development are made from the yolk and white of an egg; but such is the fact, and it shows how complete a food an egg is. It is also easily digested, if not damaged in cooking. Indeed, there is no more concentrated and nourishing food than eggs. The albumen, oil and saline matter are, as in milk, in right proportions for sustaining animal life. Two or three boiled eggs, with the addition of a slice or two of toast, will make a breakfast sufficient for a man and good enough for a king.

According to Dr. Edward Smith, in his treatise on "Food," an egg weighing an ounce and three-quarters contains 120 grains of carbon and 17½ grains of nitrogen, or 15.25 per cent. of carbon and two per cent. of nitrogen. The value of one pound of eggs, as food for sustaining the active forces of the body, is to the value of one pound of lean beef as 1584 to 900. As a flesh-producer, one pound of eggs is about equal to one pound of beef.

A hen may be calculated to consume one bushel of corn yearly, and to lay ten dozen or fifteen pounds of eggs. This is equivalent to saying that three and one-tenth pounds of corn will produce, when fed to a hen, five-sixths of a pound of eggs; but to produce five-sixths of a pound of pork requires about five pounds of corn. Taking into account the nutriment in each and the comparative prices of the two on an average, the pork is about three times as costly a food as the eggs, while it is certainly less healthful.—*Boston Journal of Chemistry.*

THE CARE OF FARM MACHINERY.

We have noticed that plows last, on an average, about three years; waggons, eight to ten years, reapers, five to eight; drills, eight to ten. We think these figures are fully as large as the truth warrants. We know of many implements that have not lasted so long, and of many which have lasted much longer. We to-day can point to waggons that have been in constant and hard use for twenty years, reapers that have stood the wear and tear of liberal use for more than fifteen years, drills that have been in use as long, and other agricultural implements that have stood the wear of fully twice the average age of such implements. These implements were not made of unusually good materials nor were they suffered to lie idle. They were put to constant use. What, then, is the secret of their greater endurance? It is simply this—they were taken care of. When not in use they were put away, and put away properly.

These implements not only lasted longer, but while they were in use they very rarely failed. They were always ready for work. The reapers did not break down in the middle of harvest and compel all hands to lie idle while some one went to the railway station to get repairs; the drills did not fail just when the wheat ought to be sown; the waggons were not always breaking down and occasioning delays and vexations. Another thing may be said in their favour, and that is that they always did good work. The reapers cut a smooth stubble and put the grain down in good condition; the plows did not refuse to scour; the drills put the wheat in just as a first-class drill would; and these implements did good work not only while they were new, but till last year they were used. —*Ohio Farmer.*

UNNECESSARY STEPS.

How many of our readers have ever thought of the significance of a single unnecessary step in the performance of those duties of the farm or household which must be attended to several times each day? Suppose it be only in the distance from the well to the kitchen, or from the feed-bins to the manger, and that it be traversed but once each way, morning, noon and night, the total unnecessary travel in a year is more than a mile. but how many of our houses or barns are so arranged that all the daily duties can be performed with so little waste of travel? How many spring-houses are built at the foot of hills twenty, forty, sixty or more yards from the house, to which the weary housewife must trudge several times in the preparing of every meal, thus multiplying this one mile by twenty, fifty, or often a hundred! How many barns are likewise unnecessarily distant from the dwelling house, or inconveniently arranged with respect to their various parts, so that the care of the stock involves as many more miles of travel for the farmer! This is one of the little wastes unnoticed because so small, yet constantly dripping, dripping, which in the end makes many a farmer poor, and drives his wife into an untimely grave.—*Farm and Fireside.*

WHERE AND HOW TO APPLY FERTILIZERS.

It is often difficult to decide—for barn-yard or stable manures, or for any artificial fertilizer—whether to put in the hill or broadcast it; and whether to apply it on the surface or bury it deeply. Here is a hint or two. If not strong enough to injure the first tender roots, a little manure near at hand gives the plant a good send off, like nourishing food to the young calf or other animal; the aftergrowth is much better if the young animal or plant is not dwarfed by imperfect and insufficient diet. Therefore, drilling innocuous hand fertilizers in with the seed is useful, as in putting some well-rotted manure or leached ashes into hills of corn, potatoes, indeed with all planted seeds. But there are good reasons for distributing

most of the manures or fertilizers *all through the soil*, and as deeply as the plant roots can possibly penetrate. The growth and vigour of all plants or crops depend chiefly upon a good supply of strong roots that stretch out far, and thus gather food over the widest extent of soil. If a flourishing stalk of corn, grain or grass, be carefully washed, so as to leave all its roots or rootlets attached, there will be found a wonderful mass of hundreds and even thousands of roots to any plant, and they extend off a long distance, frequently several feet—the farther the better to collect more food and moisture. Put some manure or fertilizer in place two feet away from a corn or potato hill, or from almost any plant, and a large mass of roots will go out in that direction. So if we mix manures or fertilizers well through the whole soil, they attract these food-seeking roots to a greater distance, and they thus come in contact with more of the food already in the soil, and find more moisture in dry weather. A deeply-stirred soil, with manure at the bottom, develops water-pumping roots below the reach of any ordinary drouth, and the crops keep right on growing—all the more rapidly on account of the helpful sun's rays that would scorch a plant not reaching a deep moisture.—*American Agriculturist for April.*

REPAIRING BUILDINGS.

The barns are usually empty at this season, and now is the best time to make any necessary repairs. If experience has shown the stables to be inconvenient, let the improvements be made before the barns are again filled. There may be some holes in the roof, and a little patching may save many times its cost, if done in season; in short, leaks of every kind about the farm buildings should be promptly stopped. Look well into the granary for mouse-holes, through which the profits of a whole field may pass. They may be closed with a strip of tin. The work of half a day in looking for and closing these places, may be the most profitable of any done on the farm. The roofs, the floors, the sides, the doors, and all other parts of the barns, should now be put in good order, and another coat of paint be applied if the last one is beginning to wear through. A stitch in time saves more than nine in such repairs.—*American Agriculturist.*

GREASING WAGGONS.

An ordinary farm waggon, one which, while it may be used nearly every day for heavy hauling, is seldom driven faster than the walk of an average farm team, should be greased well every Monday morning, as should be the cart; and by making a set time to do it, it will rarely be forgotten. A farm waggon, a spring one which goes to the mill, to market, and to divers other places, at an ordinary jog-trot, should be greased after it has run forty or fifty miles, according to the speed, while a light carriage, being driven faster, and having less surface or room for the grease, should be greased after it has run every thirty miles or so, always wiping the spindle clean and bright before applying the grease. For carriages use only sperm or castor oil, and only a few drops on each spindle; but for heavy business or farm waggons use the common axle-grease, free from salt.

GRASS AS A FERTILIZER.

Grass is the cream of the soil. Every element in its composition has been drawn from the soil; and if that grass were returned, as it should be, to the hungry land, every leaf and stem would add to the productiveness of the seed-bed. Yet a great many people who supervise the management of lawns and gardens direct every green thing in the form of grass to be cast on the beaten track of the highway, as if such plant-growth, if allowed to decay where it grew, would exert a pernicious influence on the fertility of the land. There is no better fertilizer for lawns than the grass which the lawn-mower cuts down. The mown grass should never be raked off the lawn. If allowed to remain where it grew, every spear and stem will soon settle around the live roots of the growing herbage, where it will decay, and thus provide excellent pabulum for the roots that produced the crop. If grass and weeds must be raked off and removed, let all such accumulation be spread neatly around the vines of strawberries, or near the bushes of blackberries or currants. If weeds and grass be collected in a pile during hot and dry weather, every root and stem will soon die. All the grass, weeds, and grass-roots that can be collected together should be utilized for the purpose of mulching growing plants. Decayed grass will make rich land, and will keep the surface of the soil mellow.—*American Garden.*

A CLEAR CASE.

Auburn hair inclined to curl,
  Honest eyes and winning smile,
Form to set the brain awhirl,
  Lips that might a saint beguile—
    That's the girl.

Taller than the maiden coy,
  Truthful, fearless, handsome, strong,
Heart of gold without alloy,
  Halting ne'er 'twixt right and wrong—
    That's the boy.

Window panes festooned with rime,
  Leafless trees and hillsides bare,
Town clock sounding midnight's chime,
  Street lamps glimmering here and there—
    That's the time.

Nestling at the mountain's base,
  With its one long, quiet street,
Clasped in winter's white embrace,
  Quaint old village, prim and neat—
    That's the place.

Truant arm and shy embrace,
  Tender vows in willing ear,
Kisses on an upturned face,
  Whispered "Yes, I love you, dear"—
    That's the case.

—H. A. F. in *New York Sun.*

POTATOES.

The past two years no crop has paid better for high manuring than potatoes. It is possible, with everything favourable, to get much larger crops of potatoes than are usually grown, and the difference between a crop of seventy-five bushels and one of two hundred bushels or over is much more than can be made by any amount of manuring with oats, wheat or other grains. The tendency of this is to induce farmers to save all the barnyard and stable manure they make for the fields intended for potatoes. Possibly for a single crop this may be the best use of manure to make the most money. But it must be remembered that the potato crop returns little to the land, and if it gets the first use of all the manure made it is likely to take more than is best for the maintenance of fertility.

THERE is something charming in nature and rural life. It is so natural, so pure, so unalloyed by the manœuvering and the hypocricy of social existence.

PERFECT unity of the producing classes is the only thing that will ever compel the just recognition of that class, by greedy railroad kings and grasping monopolists.

BROAD tires have many advantages for farm waggons. They are indispensable for drawing manure on land at any season, and their advantage in road use is that they improve the road bed, helping to fill up ruts made by narrow-tired vehicles. It is probable that broad tired waggons will in the future come into more general use for farm purposes.

HINTS FOR THE HOUSEHOLD.

O happy, happy time of spring!
On budding boughs the bluebirds sing,
The rill meanders sparkling by,
The wild-fowl northward swiftly fly.

IF a glass stopper won't move, hold the neck of the bottle to a flame, the heat will expand the neck of the bottle before it can reach the stopper.

Too much starch should never be put on napkins. No one wishes to wipe his lips on a board, and a stiff napkin comes very near being a board.

THERE is a peculiar charm about a clean linen collar fastened with a simple pin; a white tie or soft lace at the throat, and nothing can take their place.

SPIRITS of ammonia diluted with water, if applied with a sponge or flannel to discoloured spots on the carpets or garments, will often restore the colour.

IT is said, by a good housekeeper, that it does not at all injure pianos or other varnished furniture, to wash them off in tepid water, with a chamois skin.

DRESS sleeves are fitted very closely to the arm; they are high on the shoulder and short at the wrist; linen cuffs are seldom used, because white cuffs of embroidery are worn outside the sleeve.

THE Jersey tunic is a short overdress of Jersey webbing trimmed with soutache. It may be made useful as a polonaise to wear with the skirts of dresses after their basques have become shabby.

To those wishing to break off from tobacco, genetian root coarsely broken, chewed and the saliva swallowed, is recommended as an antidote to the craving for the weed that will at first be felt.

A SIMPLE and graceful overskirt has a deep, round, apron front that reaches to the foot of the underskirt. Several thick, full plaits are laid at each side of the apron, and the back has two full breadths of the material to be draped in soft folds.

AN infant that had been accidentally drugged with laudanum, and was fast sinking to its fatal sleep, was saved by administering strong coffee cleared with the white of an egg, a teaspoonful every five minutes until the drowsiness had passed away.

THE following is an old receipt for a salve which is not excelled by any in application to burns, cuts, bruises and sores of any kind. One hundred years may testify to its excellence. Two ounces of Burgundy pitch, half an ounce of beeswax; one tablespoonful of lard. Melt and mix and keep it always ready.

WHEN an old ingrain carpet has been turned inside out, and upside down until it is no longer presentable, have it cut sewed and woven like a rag carpet. It then makes a good covering for the middle of a floor much used, as a dining-room or nursery. It is heavy enough to hold its place, and yet can be taken up frequently, and shaken. The uncovered part of the floor can be painted in some pretty, serviceable colour, at small expense.

MAHOGANY may be polished by rubbing first with linseed oil and then by a cloth dipped in very fine brick dust. Some hard woods have a natural polish and do not require a polishing medium. A fine gloss can be produced by rubbing with linseed oil and then holding shavings or turnings of the same material against the work in the lathe. A very perfect surface can be obtained with glass-paper, which, if followed by hard rubbing, will give a beautiful lustre. Lustre can also be given to carefully finished surfaces by applying a small quantity of thinned varnish, shellac or "fillers," by a cloth, and carefully and thoroughly rubbing.

GARDEN AND ORCHARD.

MUSHROOMS.

The Mushroom is a very accommodating plant. We have seen them growing in old tubs, in out-of-the-way corners of sheds, in abandoned greenhouses, on shelves in stables, and in every case giving apparently a good and healthful crop.

All that is needed for success is a temperature from fifty to sixty degrees, some fresh horse manure, and a little spawn. Having procured what fresh horse manure is needed, mix it well with about one-third of its bulk of good loam, and you are prepared to make your beds in whatever place you prefer. If you determine to form beds, make them narrow—certainly not more than five feet in length and about fifteen inches in breadth. The material must be made compact by beating down, as evenly as possible. If under cover, the beds may be made flat on the top; but if in the open air, they should be rounded to shed the rain. After the beds have been made a week, there will be considerable heat produced by the fermentation of the manure.

Bricks of spawn should have been secured previously, and they can be sent anywhere, postage or expressage free, at about thirty cents a pound. Break them into pieces as large as walnuts, and insert in the beds just below the surface, about ten inches apart. One pound of spawn is sufficient for a space two by six feet. If there seems to be much heat, do nothing for a week or ten days, until it somewhat subsides. Then cover the bed with an inch or more of good earth, pressing it down with the back of a spade. It is not likely in a large bed water will be needed at all; but, if the material should appear very dry, water lightly with warm water. In small beds or pails, or anything of the kind, it is probable water will be needed once or twice.

Mushrooms will begin to appear in about six weeks after planting the spawn and can be gathered for three or four weeks. In gathering take up the mushroom entire, leaving no stem in the bed, and placing a little earth in the hole made by its removal. When the crop is gathered, cover the bed with a little more earth, beat it down gently, and give a pretty good moistening with tepid water, and in about a month more another crop will be produced.—*Vick's Illustrated.*

EXPERIMENTS IN CROSSING APPLES.

Prof. W. J. Beal writes as follows upon crossing apples, in the *American Agriculturist.* Will the pollen, or flower-dust, from one variety of apple change the appearance of another variety? It is not uncommon to see apples of a variety which is usually smooth, bearing strips of russet from the stem to the blossom end. These russet strips have often, even by good botanists, been considered evidence of a cross, or a partial cross, by pollen from a russet variety. On examining several such apples, I can not now remember to have seen a single one where the russet stripe corresponded to a cell or carpel of the fruit. This we should expect in case the russet stripe was due to the russet pollen. A few years ago, I crossed some smooth variety with pollen from a russet tree. No effect was produced on any of the apples. In 1881, the experiment was repeated, using the pollen of a Golden Russet on the stigmas of the Northern Spy. In no case was there any indication of russet on the skin of the Spy apples. I think the russet stripes found on apples, which are usually smooth, are to be attributed to what we call a "sport." I have seen a white pæony and a pink one coming from the same root; a yellow sweet potato coming from a stalk which bore the rest of the crop of a red colour. It is not very uncommon to find a similar change in colour in common potatoes. These are slight changes, or sports, the cause of which is not known.

FLORICULTURE IN SOUTHERN FRANCE.

Back of Cannes and for miles about the peasants are engaged in the culture of roses and violets and olives. Winter and summer the roses bloom on the rocky parterres of the Estrells, sheltered by the thick, gray satin foliage of the olives. Besides supplying the 100,000 pleasure-seekers all along the coast, from Marseilles to St. Remo, San Carlo, Monaco, Nice, Mentone, these exquisite products are packed in cotton with some innocuous chemical preservative and sent to Parisian, London and even Viennese florists. Never was an unpromising soil made to produce more abundant treasure. A species of red sandstone, apparently as susceptible of fertility as a bed of granite, this soil gives abundant support to plenteous crops of grapes, olives, roses, violets, pansies and other hardy flowers. Besides sending them to all the European capitals, the thrifty Provençales—for Provence embraces all the shore of the Mediterranean nearly—preserve them and carry on an enormous trade in candied violets and roses glace. Just at the foot of the second range of the Estrells, in a well-protected valley, is the town of Grasse, the seat of a hive of manufactories, principally perfumes, candies and pottery. The perfumes of Grasse are known the world over. In fact, all French perfumery is made at this modest little Mediterranean retreat. Of a summer day the exquisite country roads leading thither from Nice and Cannes are filled with visitors in all manner of vehicles, sampling pottery, violets and perfumery.—*Philadelphia Times.*

MANURING FRUIT TREES.

A rule adopted by old writers, says the *Pacific Rural Spirit*, gave the length of the roots as equal to that of the branches above. It is safe to say this rule does not indicate generally more than a tenth of the ground which the entire roots really occupy. Many years ago I made an experiment on a row of peach trees planted in grass and within a few feet of each other. They had been set three or four years, and were eight or nine feet high. Within a few feet of one end of the row the ground was very rich with a heap of manure. Its stimulating effect on the nearest trees was such that the shoots made in one season were two feet and a half long. The tree, which stood seven feet from the manured ground, made shoots fifteen inches long, and at eleven feet distance the shoots grew seven or eight inches. At fifteen feet no perceptible effect of the manure was visible, the growth not exceeding three inches. The experiment showed that a decided benefit was gained to the tree at eleven feet distance through the few roots on the one side, and that the roots formed a radiating circle at least twenty-two feet in diameter. The absurdity of the practice of applying a small heap of manure at the base of the trunk of the tree is obvious.

TO RAISE GOOD POTATOES.

I have not been growing potatoes of late years, but as so much was said about the deterioration of the early rose, and the market seemed to confirm it, I planted some the last spring as a test. The soil, an old sod, was prepared last fall, and an early working given in the spring when the planting was done. Selecting the soundest seed I could find, I planted some in the usual way, covering two or three inches deep, others six and eight inches. The first were a failure—a few small potatoes in a hill and of poor quality. This agreed with the general crop of the neighbourhood. It was a matter of gratification—and to the neighbours a surprise—to see the fine, bright tubers that came up when the deep-planted were dug—which was the middle of June—those covered six inches ripening earlier, as they also came up earlier after planting. They were clean and sound, and when cooked were white, mealy and sweet, with no rank, unhealthy odour. The objection to deep planting, that it is more expensive to harvest the crop, holds good so far as the digging is concerned, but it is in no way an offset to the other advantages of a larger, sounder and more uniform crop to take one season with another, drouth having much less effect. The greater freedom from disease, which results, is a point that can hardly be overestimated in view of the widespread unsound condition of the tubers, for there is less chance for deep planting in well drained soil, the tubers being further down and better protected—at least there is greater success. —*Exchange.*

THE KITCHEN GARDEN.

A good kitchen garden well stocked with different vegetables means a bountiful supply of healthful food for the table. If the farmer lives near a village, especially one with large factories, he may dispose of cabbage, green corn, peas, roots, etc., with profit. It will pay to look closely to this matter, and see if a small plot of ground in garden vegetables will not yield larger returns than a whole field in farm crops. There is but little out-of-door work in the garden in mid-winter. Whenever the soil will permit it may be worked in mild weather, and thus facilitate the spring operations. Implements should be put in order, and new ones sought out and procured for spring operations; even a plough point or cultivator tooth put in stock now, may save a half-day in the busy season. Now is the time for overhauling the seeds, testing them as to their vitality, that there may be no serious losses, later on. Any stakes or labels that may be needed should be provided beforehand.

Roses need very rich soil to bring them to perfection, thriving best in a mixture of well-rotted manure, sand and garden loam, and to stint them of nourishment is indeed poor economy.—*Exchange.*

A Pennsylvania fruit-grower, when he plants a strawberry bed, applies manure at the rate of thirty to forty tons per acre, and dresses it annually afterward with a fall mulch of twenty-five tons more. He raises 5,000 quarts to the acre, and they are big berries.

Candytufts are now produced of almost every shade, from pure white to deep carmine. The varieties come true from seed. The seed of the darker varieties does not seem to germinate so well as that of the white, and it might be well to sow it more thickly on this account.

In a recent French work on the philosophy of pruning the following rule is given: "The system is based on the fact that, as wood is formed by descending sap alone, a wound made on a tree can only become covered with healthy new wood when its entire surface is brought into connection with the leaves by means of the layer of young and growing cells formed between the wood and the bark. To make this connection it is necessary to prune in such a manner that no portion of the amputated or dead branch shall be left on the trunk. The cut should always be made close to and perfectly even with the outline of the trunk, without regard to the size of the wound thus made. This is the essential rule in all pruning and on its observance the success of the operation depends."

THE DAIRY.

A CHAPTER ON BUTTER-MAKING.

I set my milk in shallow crocks (as I prefer them to pans for various reasons) and when the milk is sour I skim the cream into a four-gallon jar which I use for a cream crock. I also save about one quart of strippings from each cow, which I strain in with the cream until I have the crock full or it is ready to churn, which it will be as soon as it becomes sour. Much depends on churning just at the right time. Don't wait until it foments and the whey eats up half the cream. We have only two cows this winter, and I churn two or three times a week; in the summer I churn nearly every day. I use a common churn with a revolving dasher, but have made just as good butter with a common up-and-down dash-churn.

When done churning, rinse down with salt water in the summer, and clear water in winter. Have your bowl and paddle (mine are wooden, and the paddle homemade at that) well scalded; then rinse with cold water; gather your butter, and take it out in your bowl, and wash with strong brine. Here, I suppose, some one will kick, but just let him kick, and go ahead with your butter. Pour the brine off, salt, and set away from ten to to twelve hours in the winter, and from twenty to twenty-four hours in the summer, unless you have a winter temperature in your milk-house. Then work every particle of water out. Yes, and do it with a common wooden-paddle, and you will have double-extra, gilt-edged butter, good enough to set before any one who knows what good butter is.

Wash and scald your churn thoroughly as soon as done churning, then let it stand open where the air can circulate through it until you want to use it again. Keep crocks, pans (if you use any) and buckets well scalded and aired, and, if by following the few hints I have given, you don't get something nice, just let me know.

It is a lamentable fact that many farmers' wives don't make butter fit to eat, but they leave their crocks, buckets, and even the churn standing around dirty for the cats and dogs to lick out, until they want to use them; then perhaps wash them with a little cold water, and then expect to get sweet butter out of a dirty, stinking churn. As for creamery butter, I don't know anything about it, but am of the opinion that there are many persons eating creamery butter that never tasted as good butter as is made by many of our farmers' wives.—*Aunt Jennie, in Ohio Farmer.*

WORKING BUTTER.

The most cultivated taste now demands butter so fresh that the delicate natural flavours are left the most prominent, and the quantity of salt varies from none at all in France, and often in England, to one-quarter of an ounce to the pound, by actual weight (not actual guess), in the American dairies that command the best prices. However safely the butter may have reached this point it is not out of danger. A rough, hasty hand may yet ruin it all, especially if a butter-worker is used that is gifted with the power of rapid compression. Buttermilk worked *out* is an improvement, but buttermilk worked *in* is destruction. If a groove is pressed with a lever-worker in a mass of butter it will soon fill with beads of milk and moisture; if this is allowed time to drain away, or is removed with a sponge covered with linen wet with brine, it is gone once for all, but, if a second movement of the lever reincloses it, it is pressed into the butter, and loss of dry grain results.

This is a common evil with labour-saving workers that fail to give the moisture any chance to get away; as they roll and re-roll the butter until it is so soft that it gives oleomargarine a good start on the road to market. Perhaps at the end of this chapter it may be said that all this is lots of trouble; so it is; but if neatness, care and intelligence can double the value of all the dairy product and the labour of the farm, while elevating the business, is it not a reward for lots of trouble, if it be such to conduct a dairy with dainty hands?—*Breeder's Gazette.*

PROMOTING MILK.

The following from the London *Live Stock Journal* is a good statement of some practical points, suggesting the extent to which milking qualities are dependent on treating and training:

A copious flow of milk, sustained through many months, is a quality which has been produced by art in domestication. Wild cattle will rarely provide more than enough milk to rear their offspring, and the flow of it is of comparatively short duration. Small in volume, the milk is rich in quality, but the lacteal organs soon dry off again. This, of course, is in harmony with the requirements of the young animals in a wild state, and is a correlation of the roving life and hap hazard feeding of the dams. More milk than the calf calf requires under such conditions would be a waste of material energy which nature does not encourage. It would moreover be an encumbrance to the mother. Wild cattle are neither good milkers nor good fatteners, and in parts of England where calves are allowed to run with their domesticated dams generation after generation, the breed of such animals is not famous for milk-giving. Like that of the mare and ewe, the milk is smaller in quantity, rich in quality and short of duration. The desultory and irregular sucking of a calf, or foal, or lamb is not conducive to the development of a large flow of milk. Hand milking of similar character has the same effect. Young people are allowed to learn on cows which are going dry for calving, not those which are still in full flow. New beginners soon dry up a cow's milk, and bad milkers do the same.

Heavy milking properties, then, are artificial in the sense that they have been developed under some domestication and by careful breeding for a given end; yet, like many other qualities, which are mere germs in nature, they become hereditary by long usage.

In the Southern States the dairy business is growing rapidly.

An experienced dairyman says: "In the case of an unusually large and well-developed heifer there is no objection to having *her first calf* before she is two years old, but when undersized or at all weakly, it is safer to let her reach the age of two and a half or three years. If thrifty heifers come in at an early age and are properly attended to, they usually make better milkers than when they come in late."

A writer in an American contemporary pays this tribute to the farmers' wives: "We take the ground that, other things being equal, the farmer's wife can make the best butter that can be made. Give her the improved method of setting milk, the improved churns, give her the knowledge the creamery man has, and with her twenty to fifty or a hundred cows, with the milk direct from the cows to the setting cans, and the cream direct from the cream cans to the churn, without it being carted about for hours in a summer sun and mixed with all sorts of other cream, and good sense dictates that such a woman, with her private dairy all under her own eye and immediate control, can beat the best creamery men."

CREAM.

Relic of Burns—Blisters.

Fast colours—The jockey's.

The favourite air—The millionaire.

The joint control—That of the cook.

A board full of nails is the worst we ever saw.

Pill-makers are among the most expert boxers.

An epicurean - Surely one who goes in for epics.

A chasm that often separates friends—Sarcasm.

Rude remarks—Remarks that get you into trouble.

How to get out of a scrape—Let your beard grow.

To get up a dinner of great variety cooks should be allowed a wide range.

The mosquito as a public singer draws well, but never gives satisfaction.

Did Richard III. exclaim "Give me another horse," because he was tired of the nightmare he had been riding?

"Man, Jock, ye're an awfu' slow eater," said a farmer to his new herd-boy. "Maybe, maister," replied he, "but I'm an unco sure ane."

George Washington never allowed his temper to become ruffled; but he was very particular about having his shirt bosom frilled.

"After all," said Mrs. Ramsbotham, "there's nothing like Sir Walter Scott for novels. I think his 'Tallyman' one of the best romances I ever read."

"I wish to state," writes a provident minister, "that I have procured an alarm clock that will wake up the congregation as soon as the service is over.

A modern novel has this thrilling passage: "With one hand he held her beautiful golden head above the chilling wave, and with the other called loudly for assistance."

Medical professor to a raw student: "Where is the glottis?" "I don't know, sir; I think you put it on the shelf in the dissecting room with the rest of your surgical instruments."

Here is probably the shortest courtship on record. A miner in California fell in love with a girl at first sight. She was equally smitten with him, and the entire courtship was, "My pet," "You bet."

An Irish gentleman, who had been spending the evening with a few friends, looked at his watch just after midnight, and said, "It is to-morrow morning; I must bid you good-night, gentlemen."

John, a Scotchman, meeting James, was asked if he knew a certain Peter. "Ken Peter?" said he. "Hoots, man! fine dae I ken him. Him and me's sleepit thegither in the same kirk for the last twenty years."

Rector's wife (severely)—"Tommy Robinson, how is it you don't take off your hat when you meet me?" Tommy—"Well, marm, if I take off my hat to you, what be I to do when I meet the parson himself?"

An illiterate millionaire visited the Continent. A travelled friend asked him what he had seen, mentioning all the noted sights. Among other places he enquired if he had seen the Dardanelles. "Oh yes," answered Old Money-bags, "they dined with us the last night we were in Paris."

High art is indispensable. Lady—"But, Professor, how came you to offend Mrs. Smith? Professor—"Ah, I will tell you. Madame Smit the come to me and she say I want my daughter so sing so high as Mees Brown, and she fly in one rage and say as dere is nosing low in her family when I say Mees Smit she haf a low voice."

HORSES AND CATTLE.

MENTAL CHARACTERISTICS IN THE HORSE.

Those who have had extended experience with the horse, not merely to use them as beasts fit only for the drawing of loads and carrying weights, but under circumstances where the horse, in order to perform certain intricate duties to the satisfaction of the master, required more than what is usually counted as mere brute capacity, have learned that horses are possessed of mental characteristics akin to those of the human being. If his moral attributes do not take in so wide a range as in the case of the human being—and in this some horses are on a higher plane than some men—he certainly is not devoid of the sentiment of benevolence, and he has approbativeness, firmness, and the sentiment of veneration for his master, and is strong in his attachments.

The brood mare has love of young in intensity not much short of that possessed by the human being. Of the elements of intelligence, mainly depending upon the perceptive faculties, the horse evidently is in possession of pretty much all that the human being can boast of, yet in a lessened degree. Thus the horse has perception and memory of localities, of form, colour, size, sound, memory of events ; takes cognizance of kind treatment, and rebukes ill-usage. He learns the meaning of words, obeying the commands of his master with promptness. This is seen in a most striking manner in the troop of horses trained for parade, as they go through the evolutions with exactness not excelled by any company of well-drilled soldiers, and do this at the word of command, spoken in any ordinary tone of voice. In this and in other ways it has been proved that the horse can be taught to understand, not merely a single word of command, but a combination of words.

The susceptibility of horses to training is no where shown with more clearness than in the fire departments of our large cities. Thus, the following may be taken as one of the very many instances that the horse can become an expert in the line in which he is trained. A horse doing duty in the fire department of an eastern city, was eating his morning ration of grain, having had no feed since the night before, and upon the word, "Jack ! come here ! " being spoken in a mild tone of voice in a distant part of the stable, the horse instantly abandoned his feed and trotted to the place occupied by the man giving the order. The mate of this horse did the same thing on being called. Upon the words, "Go back !" both horses trotted to their feed. The harnesses were removed from both horses, and each one in turn being told to go and put on his collar, did so promptly, these being placed on end in a manner that made it possible for the horses to work their heads through the collar.

The body of the harness being suspended in such way that the horse could place himself directly under it, thus enabling the groom to drop it instantly to its place, each horse took his position in turn, placing himself exactly in the required position for the hames to drop into the collar. A horse, an old stager in military life, learned to slip his halter during the night and go to the grain bin. On a certain occasion he was heard in the act. The officer in charge heard the movement from without, and going to the door suddenly and unlocking it, heard the horse hurry to his stall, and there saw him thrust his head into the halter, standing as though no mischief had been done. The attendant, appearing to see nothing of the movement, retired, locking the door and walking away. The horse, thinking the coast was clear, again got clear of his halter and made straightway for the grain-bin. The officer then returned, securing the animal with a halter he could not slip off.

In our own experience we had a horse entirely competent to comprehend everything relating to the harness, carriage, etc. On one occasion, when moving along at a brisk trot, he, without giving any warning, stopped suddenly from a trot to a dead stand-still, not going into a walk and then stopping. He looked around, as much as to say he knew what he was about, and had stopped for cause. Stepping out, it was discovered that the neck-strap, holding up the breast-collar, had become detached at one end, and that the breast-collar was down across his knees. Most horses would have plunged ahead, stepping over the collar, allowing the shafts to drop. The animal referred to above, seemed to unite his understanding with that of the driver, comprehending all the motives connected with being hitched to the carriage. If any strap happened not to be buckled, he would invariably stop after going a few steps, give his head a significant toss, and look back to give a hint that something was loose.

If water was offered this horse, when he wanted his oats, instead, he would touch his lips to the water, give it a slight splash, that the groom might know that he recognized the fact of the water being at hand, then raising his head in an impatient manner, would look in the direction of the oat-bin. Though safe and harmless under any and all circumstances, if the groom happened to be later than usual in coming around to give the regular meal, he would lay his ears back and make pretences of kicking, as much as to say come on time or I will punish you. If horses were placed in school, as children are, when young, and taught with the care that should be given them, those who now consider them mere brutes, with only intelligence sufficient to enable them to turn to the right or left, when guided by the rein, would be surprised to witness their mental capabilities under training.—*National Live Stock Journal.*

FACTS ABOUT FEEDING.

The editor of *The Massachusetts Ploughman* contrasts farmers of his acquaintance in respect to the important matter of feeding all animals. Some with sixteen pounds of hay and four quarts of cornmeal per day to each cow keep their dairy herds in better condition than others on a ration nearly twice as large. Regularity is of great advantage, and the proper supply is the point to be most carefully considered.

"Over-feeding results in the derangement of the digestive organs, the loss of appetite, and finally the loss of flesh. An animal thus injured cannot be brought back to as good condition as can one that has grown poor by feeding half rations. A hog that has once been overfed is rarely ever brought back to a good, healthy condition. In fatting hogs great care should be taken to never give them more than they will readily eat up clean. Whenever a hog fails to eat at once what is placed before him, it should be taken away. While it may not be as important to make other farm stock eat up clean all that is fed out, it is never good policy to permit food to lay before any animal, after it has satisfied its appetite. We have always noticed that successful feeders of cattle are particular to clean out the crib as soon as the cattle have done eating."

From the *Germantown Telegraph* we take this advice about feeding horses, many of which are irreparably injured by mistaken liberality with rations.

"At times horses are habitually overfed, and their systems become so disordered by it that their health suffers and the power of digestion failing, they lose flesh instead of gaining it, and will recover condition only by diminishing from one-fourth to one half the quantity of their allowance. Frequently old horses become thin on account of their teeth wearing unevenly, so that it is not in their power to masticate their food. In such case a farrier should be employed to file them ; or the owner, if he possesses the particular kind of file used, can file them himself. In this case, much less food will soon restore the horse to a proper condition. Rock-salt should of course be ever present in the manger, as a horse was never known to take too much of it."

Mr. A. W. Cheever cites, in his *New England Farmer*, an incident in proof of the fact that "a great many animals are seriously injured by overfeeding" (and of course abused) and he refers to a point in his own successful practice :

"We know of a barn full of cattle that were fed almost nothing the past winter but good, merchantable upland hay, grown by high culture and liberal manuring. The cattle were kept warm, were nicely bedded, the stables were cleaned often, and water was freely provided, yet the cattle came out thin in the spring and made but little growth. The difficulty was that the good hay was given far too freely, or certainly too much at a time. There was plenty of hay in the barn, and the attendant wanted to make a good showing of his skill in stock feeding, so he filled the racks and mangers full at each feeding. At first the cattle, coming in from a short pasture, would eat heartily, but, with little or no exercise, there was less food called for, and the quantity given was greater than the system required. Of course a portion would be left uneaten after the whole had been picked over and the choicest portions taken out. The rest was breathed over till nothing would eat it, when it was hauled under foot, trodden upon and wasted. We have for many years made it a practice to feed cattle but two meals per day, one in the morning, the other in the afternoon, aiming to divide the twenty-four hours as nearly as convenient into two equal periods, though the time between night and morning is usually a little longer than the time between morning and evening. A cow's stomach is so constructed that she can easily take enough good food into it to last her twelve hours, and we have long been of the opinion that food is more thoroughly digested when but two meals are given."

TO TELL A HORSE'S AGE.

At three years old the horse should have the central permanent nippers growing, the other two pairs wasting, six grinders in each jaw, above and below, the first and fifth level, the others and the sixth protruding. The sharp edges of the new incisors will be very evident, compared with the old teeth. As the permanent nippers wear and continue to grow a narrow portion of the cone-shaped tooth is exposed by the attrition of the teeth on each other. The mark will be wearing out and the crowns of the teeth will be sensibly smaller than at two years. Between three and a half and four years the next pair of nippers will be changed, the central nippers will have attained nearly their full growth, a vacuity will be left where the second stood, and the corner teeth will be diminished in breadth, worn down, and the mark in the corner of the tooth will become faint. The second pair of grinders will be shed. At four years the central nippers will be fully developed, and sharp edge somewhat worn off, and the marks somewhat wider and fainter. The next pair will be up, but they will be small, with a mark deep and extending quite across them. The corner nippers will be larger than the inside ones, but smaller than before and flat, and the mark nearly effaced. The sixth grinders will

have risen to a level with the others, and the tushes will begin to appear. At five years the horse's mouth is almost perfect. The corner nippers are quite up, the long deep mark irregular in the inside and other nippers will bear evident tokens of increased wear. The tushes are nearly grown, the sixth molar is up and the third molar is wanting. This last circumstance will prevent the deception of attempting to pass a four-year-old as a five year old. At six the mark on the central nippers and fast wearing away in the corner teeth. The tushes are rounded at the points and edges, and beginning to get round on the inside. At eight years old the tushes are rounded in every way; the mark is gone from all the bottom nippers. There is nothing remaining in them that can afterward clearly show the age of the horse. After this the only guides are the nippers in the upper jaw. At nine years the mark will be worn from the middle nippers, from the next pair at ten years, and from all the upper nippers at eleven years. At nine years the centre nippers are round instead of oval. At ten years the others begin to become rounded, at eleven years the second pair are very much rounded, at thirteen years the corner ones have the same appearance; at fourteen years the face of the centre nippers become somewhat triangular; at seventeen years they are all so.

RAISING A COLT.

A colt is regarded as an incumberance because he is useless until he arrives at a suitable age for work, but it really costs very little, compared with his value, to raise a colt. When the period arrives at which the colt can do service, the balance sheet will show in his favour, for young horses always command good prices if they are sound and well broken. One of the difficulties in the way is the incumbrance placed on the dam, which interferes with her usefulness on the farm, especially if the colt is foaled during the early part of spring. Some farmers have their coalts foaled in the fall, but this is open to two objections. In the first place, spring is the natural time, for then the grass is beginning to grow and nature seems to have provided that most animals should bring forth their young in a season beyond the reach of severe cold, and with sufficient time to grow and be prepared for the following winter.

Again, when a colt is foaled in the fall he must pass through a period of several months' confinement in the stable without exercise, or else be more or less chilled with cold from time to time. Should this happen, the effect of any bad treatment will be afterward manifested, and no amount of attention can again elevate the colt to that degree of hardiness and soundness of body that naturally belong to a spring colt. Besides, a colt foaled in the spring will outgrow one foaled in the fall. An objection to spring colts may be partially overcome by ploughing in the fall, or keeping the brood mares for very light work, with the colts at liberty to accompany them always. A colt needs but very little feeding if the pasture be good and there is water running through it. He needs then only a small feed of oats at night—no corn—and if he is given hay it is not necessary to give him a full ration. What he will consume from the barn will not be one-third his value when he is three years old, and if he is well bred the gain is greater.

When a farmer raises his horses he knows their disposition, constitution and capacity. It is the proper way to get good, sound, serviceable horses on the farm. It should not be overlooked that a colt must be tenderly treated from birth, and must be fondled and handled as much as possible. He should never hear a harsh word, but should be taught to have confidence in everybody he sees or knows. This is an easy matter if his training begins from the time he is a day old. He can be thus gradually broken without difficulty, and will never be troublesome. No such thing as a whip should be allowed in a stable that contains a colt. Colts should not be worked until three years old, and then lightly at first, as they do not fully mature until they are six years old, and with some breeds of horses even later. Mares with foals at their side should be fed on the richest and most nourishing food.—*Philadelphia Record.*

STARVING COLTS.

In early life (sixty years ago) we were taught that it was important that in order to have a strong and hardy horse that the colt must be allowed to shift for himself, live out doors through the winter and support himself by gleaning in the stalk fields. And this doctrine is believed, or at least practised, at the present day, not in solitary cases, but the instances can be found all over the State. There is no doctrine more fallacious, and no practice more detrimental to the future usefulness of the horse or injurious to the interests of the owner of the colt. The first year of a colt is all important to his future usefulness, and no item in his care and treatment is as essential as plenty of good nourishing food. He needs as much, if not more, than a fully matured horse. Just as a boy's appetite and the demands of his growing system require more food than the man of mature age, so the colt needs more at the period he is building up his flesh and bones than at any other period. So give the colts plenty of good food, not in proportion to their size in comparison to the horse, but feed in proportion to the appetite and the use they have in building up their system. Wallace, in his monthly, says colts need more food than an ordinary horse. Give the colts pure water, not too cold; good air, clean quarters, plenty of room, backed by an abundance of strong, nourishing food. Then he will add growth and strength, a solid constitution, and valuable powers. And during this solid winter let the men and the boys on the farm recollect the difference in the appetite of a boy and a man, and treat the noble little colt, whose appetite is keen as a boy's who has been all day fishing, and he will repay it in efficient work when he wears the collar.—*Iowa State Register.*

WHY DO ANIMALS NEED SALT?

Professor James E. Johnston, of Scotland, says: "Upwards of half the saline matter of blood (fifty-seven per cent.) consists of common salt, and this is partly discharged every day through the skin and kidneys. The necessity of continued supplies of it to the healthy body becomes sufficiently obvious. The bile also contains soda (one of the ingredients of salt) as a special and indispensable constituent, and so do all the cartileges of the body, Stint the supply of salt, therefore, and neither will the bile be able properly to assist digestion, nor the cartileges to be built up again as fast as they naturally waste. It is better to place salt where stock can have free access to it, than to give it occasionally in large quantities. They will help themselves to what they need if allowed to do so at pleasure; otherwise, when they become 'salt hungry,' they may take more than is wholesome."

THE GALLOWAY.

The secretary of the Galloway Society, of Scotland, says: "There are strong indications that a great demand for them will rise in Canada and the United States, as more Galloways have been sent out during the last few months than for many years previously, and the American people are beginning to appreciate the merits of the breed. The Polled Angus is a magnificent breed for particular circumstances; but not a breed possessing so many recommendations to American breeders as the Galloways. There is no breed of polled cattle in Britain so impressive and influential as the Galloways in crossing with horned cattle, with the view of getting quit of the horns. Where a pure, well-bred Galloway bull was put to cows of any horned breed, the produce in 99 cases out of every 100 would be polled; and he would leave those in a position to judge to say whether there were any other polled breeds of which the same could be said. Then there is their hardy character, which is a great point in their favour. There is no breed, except, perhaps, the West Highland, so peculiarly fitted for exposure to the extremes of heat and cold experienced in many parts of the Western States, where a large number of cattle have to lie out at all seasons."

THE practical man can tell at a glance the exact condition of his stock, if he is fit for this business.

EVERY care and attention shown to horses, no matter what their condition is, will bring its reward. The kind of influence thrown around a young horse will have its effect on its character in after years.

There is a general movement in Providence, R. I., to dispense with blinders on horses—a reformation begun years ago in England and on this continent, and now fast spreading throughout the civilized world.

THE use of sulphur with live stock of all kinds has a value in preventing many forms of disease, and especially skin diseases. It must be used cautiously, as it is an active poison. The average hired hand must not be trusted in using it. Mix thoroughly and there is no danger in giving it.

A WESTERN cattle breeder reports that the greatest profit is made in the first year of an animal's growth. This is increased, but in less proportion the second year. If kept a year longer not only is there no profit, but all the clear gain of the second year is wasted. This is a striking commentary on the advantage of early maturity.

A VETERINARY professor says that "a great majority of ring-bones in young horses come from the failure to shorten the toes." To this may be added that ring-bone is apt to be formed if colts are allowed to stand on a plank floor, or anywhere else where the footing is hard, during the first eighteen months of their age. Whether in stable or yard during this period, let them have earth for standing or walking, free from stone or gravel.

THE practice of dosing horses with heavy quantities of medicine every time they are ailing is not only an expensive and ludicrous habit but one that is cruel in the extreme. In nine cases out of ten, those administering know but little of the medicinal qualities of the stuff they give them. There is no question that medicines and timely aid are often necessary, but should always be given under the advice of some one who knows something about them.

LINSEED meal is an excellent food for stock, when fed in connection with grain. It should be fed sparingly at first, mixed with grain ration, and can be increased to a quart for each grown fattening animal. For store stock, half that quantity is sufficient for a full ration. Calves and colts should have a handful per day each. It keeps them in a thrifty growing condition, and the coat is very glossy. For sheep it is specially valuable, and fattening sheep can be given all they will eat after they become used to it.

SHEEP AND SWINE.

CARE OF BROOD SOWS AND YOUNG PIGS.

Although swine-breeding is looked on with contempt by some breeders, the fact remains, nevertheless that to become a successful swine-raiser one must make the science a thorough study. We see annually the failures of many novices who think that it requires no study to breed hogs. Some hog raisers seem to think that their breeding sows can get along without any care except at farrowing time and then only for a few days. The eye of the careful and successful breeder daily notes the condition of his animals; if anything is wrong with any member of his herd he cares for it at once. At this season, as a general thing, there are many sows due to farrow and strict attention to mother and litter must be paid Beginning about the month before farrowing the sow should be fed with slops, composed of bran, middlings, oatmeal, etc., such food tending to the secretion of milk. A week or ten days previous to farrowing the sow should be penned up that she may become used to the place; put in a good supply of straw, so that it shall have become well trampled by farrowing time. Indications of parturition are readily noticed, the sow will collect all available bedding, the teats will become full and hollows appear on both sides of the tail. While we think that in most cases a sow in ordinary breeding condition will need no aid in delivering her pigs, the feeder to whom the sow has become accustomed should be near at parturition to give aid if necessary. Great care must be exercised in feeding the sow after farrowing, feed should be administered sparingly and of a character tending to keep the bowels open and eradicate fever. The removal of the long sharp teeth (often black) from the pigs should be made with a pair of nippers as soon as possible after birth, if not removed, these teeth aggravate the sow, she will not let the pigs suckle, and will often kill them. The young pigs should be taught to eat as early as possible, and the sow must be fed well with nutritious, milk-producing food. The swine-raiser must always bear in mind that although he may have the best bred hogs money can buy, *without a judicious use of feed, good blood will avail nothing.* In rearing pigs we should keep the fact before us that during the first few months of the young pig's life, its future character is established and the profitable and advantageous gain is made.—*Farmer's Review.*

THE FEED OF SHEEP.

There is no better or healthier food for any kind of sheep, and none they like better than good, bright corn fodder—though Mr. Fowler has written against its use for breeding ewes. I have wintered breeding ewes for the last fifteen years mostly on corn fodder and hay, fed alternately twice a day each without grain, until the corn fodder was gone, and then topped off in spring with a little corn in the place of corn fodder, and the sheep invariably came out in excellent condition, and I have had as good, or better luck in raising lambs as when no corn fodder was fed. Clover, when cut in the right stage of ripeness and cured without getting wet, is excellent hay for sheep, but once wet in curing—as it frequently is on account of being so long in operation—it is the poorest hay that can be fed to sheep. Timothy, when sown thick and intermixed with finer grasses, is as good as the best cured clover, and there is not so much waste in feeding it to sheep as in feeding clover, for sheep will not eat clover stalks so close as horses or cattle, hence it is not as good economy to feed clover hay to sheep unless it is fine in the stalk, cut early and cured in the best possible manner, then, as above stated, it is excellent hay for them.

Sheep are more fastidious in their tastes about food than other domestic animals, and twofold more loss results from careless, slipshod feeding and bad management generally that from such maltreatment of any other stock on the farm. A horse, steer or mule may by neglect and poor keeping run down and get poor, and then by better care and feeding be restored to good condition and no great loss result—except that it takes five times more food to restore lost flesh than would have been required to prevent that loss. Not so with sheep, when sheep run down and get poor of course there is just as much loss in the carcass of the animal as in the case of other stock; and there is also an equal or greater amount of loss in the fleece. A sheep well kept for a while has a healthy growth of wool, and then poor keeping for another while, before being restored to its former condition, will leave a joint, or weak, rotten place in the fleece, and such wool is of but little value for manufacturing purposes, and is termed "jointed wool" by writers on sheep husbandry. Hence to avoid this double loss by poor management, give the flock good care and an even keep the year round.

It requires more nice, discriminating care and judgment to feed sheep successfully in winter than any other stock. Just the quantity should be fed each time that they will eat clean; if a little more than they will eat is given, cut them short the next time, and by a little practice the right quantity can be gauged very accurately. By overfeeding a few times and leaving some sorts in their racks they will acquire the habit of wasting hay, and when once acquired, it is hard to break. It is good economy to feed store-sheep a little grain when it is not too high; by so doing they can be made to eat hay up very close and do better; but when no grain is fed all the hay is forced into them that can be, and they are liable to be overfed, hence a waste of hay. Salt is conducive to the health of sheep, and they should have it once a week at least, either by brining the sorts left in their racks or by salting in their feed troughs, but never give salt when sheep depend on snow for drink; it creates a thirst that snow will not quench, and damage rather than benefit results.—*Carlos Mason, Lake Co., Ohio.*

SUCCESS WITH LAMBS.

Over-feeding ewes with heating grain, such as corn, and no exercise, has a tendency to make lambs small and weak; if fed heavy on grain, half oats or wheat bran mixed with corn is better than clear corn; clear oats are better still; it is not heating, and makes muscle, and is healthier, while corn produces heat and makes fat. When feeding very light with grain, corn does well enough. With full feeding on hay and corn fodder (if you have it) with a small grain ration once a day, and plenty of exercise, with plenty of water, and an open shed, well bedded down with straw, to run in and out at pleasure, and bred to a vigorous ram, ninety per cent. of Merino lambs ought to be raised in large flocks, and a larger proportion in small flocks, without any trouble. When a ram runs at large in large flocks the first get are largest and best, and more ram than ewe lambs. It takes more pains to raise high-bred Merino lambs than common or runabout breeds.

Last spring I had a good many lambs dropped that were strong enough to get up, but did not know enough to find the teat, but after catching the ewe and putting teat in lamb's mouth two or three times while the ewe was standing, the lamb would go along and take care of itself. Most any lamb just dropped that has any life in it with proper care can be raised; it is astonishing how much vitality an almost dead lamb possesses. When too far gone to try to suck when chilled, place close to the fire where it is quite warm, feed a little warm milk containing a little hog's lard, and it will soon be on its legs bleating; have its dam close by; place the teat in its mouth while the ewe is standing, and it will feed itself. In some cases this may have to be repeated two or three times before the lamb gets a good send-off. The lard in the milk, as every one skilled in raising lambs well knows, prevents costiveness, which cow's milk in a young lamb has a tendency to produce.

A lamb that has strength enough to get up and get hold of the teat, will start for the milk without any help, but when so weak it can't do this, it may be well with the thumb and finger after being wet with a little saliva to gently start the milk, but if they will suck they generally have power enough in the jaws to accomplish the desired result. It is not profitable to breed Merino ewes until they are coming three years old; if bred younger they are apt to run off and leave their lambs. In such cases shut sheep and lamb in a small enclosure and while holding the unnatural mother for the lamb to suck have the dog in the pen with you, which in many cases will frighten her to her senses, and after keeping up for a day or two she will own her lamb. To make a sheep that has lost her lamb own the lamb of another, skin her own dead lamb and wrap the skin around the lamb you wish her to raise; in this way, it is said, many an old sheep has been fooled.—*Carlos Mason, in N. Y. Tribune.*

TO KEEP HOGS FROM ROOTING.

If you want to keep hogs from plowing up your fields, I can tell you of a plan adopted with complete success by the late cattle king, Jacob Strawn, of Morgan Co., Ill., who was also a very extensive raiser and dealer in swine. Mr. Strawn's plan was to have what he termed "snouting day," when all hogs to be operated upon were collected in an enclosure. The hogs in turn were caught and brought to a block of wood, when a man with a sharp chisel sliced off the rooter on the top of the nose. They were then turned into a clover pasture and were perfectly harmless so far as plowing up the ground was concerned. I have seen hundreds of hogs in Mr. Strawn's fields, but never saw any damage done by them. The plan is simple and effective, and does away with the expense of buying rings.

WATERING SHEEP.

A writer urges more careful study of pure water and of drinks in general, on the economy of animals. The privation of water tells more rapidly on health than abstinence from food. In every kind of beverage, the part efficacious in assuaging thirst is the water. The quantity of water required by an animal varies with the air's temperature and humidity. A sheep requires least, a pig most water, horses and cattle come between. In the care of sheep much water thins the blood. They ought never to be deprived of water, as many shepherds practice, nor at the same time allowed to fully slake their thirst. The latter observation applies also to horses. The sheep and horse are, of domestic animals, the most sensitive to impure water. For draught animals and sheep warm drinks are enervating.

If sulphur is well dusted around the sheds and hog pens it will effectually drive off lice. Dust it on the hogs also, and leave a little in the troughs for them to eat.

Scientific and Useful.

DAMP CLOSETS.—For a damp closet or cupboard, which is liable to cause mildew, place in it a saucer full of quicklime, and it will not only absorb all apparent dampness, but sweeten and disinfect the place. Renew the lime once a fortnight, or as often as it becomes slacked.

TO KEEP seeds from the depredations of mice, mix in some pieces of camphor-gum. Camphor placed in drawers or boxes will warn away mice, as well as moths.—Spots on varnished furniture are readily removed by rubbing with spirits of camphor or essence of pepper-mint, and afterward with oil or furniture polish.

AN EXCELLENT SOUP.—An excellent soup can be made by taking one can of corn and boiling the corn in one quart of milk and water in equal proportion; season with salt, pepper, and butter. After it has boiled for about ten minutes stir in it three well-beaten eggs. Serve hot, with a little rolled cracker, added just before sending to the table.

THREE KINDS OF CAKE FROM ONE RECIPE.—The housekeeper who is limited as to time and materials will find the following recipe a most excellent one: One pound of flour, one pound of sugar, three-quarters pound of butter, ten eggs. Mix as for pound cake. Divide into three parts: cake one-third flavour with lemon, or to taste, and bake as pound cake. Mix one cupful of raisins, one cupful currants, piece citron, cut thin, spices to taste, with second one-third, and bake as fruit cake. To the remainder add flour enough to roll and cut.

CRULLERS.—Happy is the woman who can have for use in cooking genuine, freshly-made buttermilk. The following recipe for crullers is a proof of this: Half a pint of buttermilk, a small teacupful of butter, two cups of sugar and three eggs. Beat the eggs and then add the milk and sugar. Half a teaspoonful of soda, dissolved in a little hot water should then be added. Grate half a nutmeg and stir in with a teaspoonful of salt and half a teaspoonful of ground cinnamon of good strength. Work in flour enough to make a firm, smooth dough. Roll this and cut out cakes in fancy shapes, or twist like ordinary fried cakes. Fry in hot lard.

LADY FINGERS.—Lady fingers made after this recipe are very nice for tea; they should be eaten while fresh: Rub half a pound of butter into a pound of flour; to this add half a pound of sugar, the juice and grated rind of one large lemon, and, lastly, three eggs, the white and yolks beaten separately and the whites stirred in after all the other ingredients are well mixed together. This dough, if properly made, will be stiff enough to make rolls about the size of a lady's finger; it will spread when in the oven, so that it will be of the right size and shape. If you wish them to be specially inviting, dip them in chocolate icing after they are baked. Take pains to see that the icing is so hard that it will not run, and set the cakes on a platter in a cold room until the icing is firm.

AN orange basket, or a plate of Orange baskets, makes a handsome decoration for the table, particularly for a birthday party or a holiday meal. Take the fruit from the peal through as small an incision as possible to make and yet to draw the fruit throught it, then cut the skin of the orange in the shape of a little basket, with a handle. This may be filled with candy, with ice cream, whipped cream, jelly, (wine jelly with currant jelly on the top looks pretty), or with anything you choose. The fruit is not to be wasted, by any means, it may be used for an orange pie, for marmalade, or for ambrosia—that is, cut in small pieces and put in a dish with a layer of cocoanut and powdered sugar between each layer of orange. This is very delicate for dessert with ice cream and cake.

LEMON CUSTARD.—Custard is simply milk thickened with eggs. When a lemon custard is required rub lumps of sugar over the rind of lemons to get the "zest." This is a more delicate way than using the juice of the lemon, which is apt to curdle the custard. From the lemon rind you get the oil, which makes a better combination. Take half a pint of milk, boil it in a small saucepan, and pour it into a jug. Put a large saucepan on the fire half full of boiling water. Break two eggs into a bowl and beat up yolks and whites together, adding the hot milk (which has been sweetened) a teaspoonful at a time, and beating so thoroughly that all the glair of the egg is broken up. When all the milk is added set the bowl in the saucepan of polling water and stir until the custard thickens. Pour into cups and set aside to cool. English cooks stir the custard until it is nearly cold. Very delicate custard can be made with rice flour or corn starch, the recipe for which comes with the package.

The Rural Canadian.

TORONTO, APRIL 2ND, 1883.

WITH our Ontario farmers the Berkshire pig is the great favourite. In Ohio and Illinois the Poland-China ranks first. It matures early, is quiet in its habits, and is an excellent feeder. The farmers of such pork-producing States as Ohio and Illinois doubtless know the merits of the best breeds, and they have tried the Berk.

THE value of rock phosphate for manure consists wholly in its fineness. If well pulverized it becomes slowly soluble in the soil, but the coarse rock is useless. The same remark applies to bone manure. Coarse fragments may stay in the soil unchanged for years, whereas the fine particles soon dissolve.

WHEAT is a deep feeder. In a favourable soil its roots will penetrate forty inches. The roots of barley and oats go thirty inches below the surface in search of food. One of the advantages of underdraining is, that it renders the ground porous and gives freer scope to the rootlets—a matter of great importance, especially in the dry season.

THERE is considerable enquiry among farmers concerning the provisions of the "Tree-planting Act." Wherever it is intended to take advantage of the bonus system this year prompt action should be taken by the township councils. The right time for transplanting deciduous trees is before they have come out in leaf in the spring, or after the leaves have dropped in autumn. They may grow if transplanted in full leaf, but they require close trimming and copious watering.

THE clover crop, having been a failure last year, seed is scarce and dear. Yet farmers can't afford to do without it. The plant lives only two years, and it would be a great mistake to miss a year's seeding. What if the crop should be a failure two years in succession? Besides, the enriching of the soil would pay even at a high price for seed. One bushel is enough for ten acres, and the cost of it is a mere fraction of the value of a crop for feeding purposes and manure. No thoughtful farmer will be hindered by the high price of seed.

THE Ontario Bureau of Statistics has proved a marked success. The first report in cloth binding is now ready for circulation. We can cordially endorse every word in the following notice from the *Globe*: "Since the report was first put out in paper covers it has added to it a map showing the distribution of the rainfall and the height above sea level of the several parts of the Province. The volume is one mass of interesting and mostly new facts, obtained with intelligence and digested with infinite care. It will form the *vade mecum* of every person who wishes to be acquainted with the characteristics of Ontario, and it forms without doubt one of the most valuable documents ever sent out of a public office. When the Government entrusted the conduct of the Bureau of Industries to Mr. Blue it made a happy hit, and the Secretary is to be congratulated upon having made a perfect success of an enterprise which very few men would have ventured to undertake."

FARM DWELLING.

The perspective view, ground-floor and chamber plans of a medium sized farm house, given on another page, may prove useful to any of our readers about to build. It will be noticed at a glance that the arrangement is both compact and convenient, giving accommodation to a fair-sized family; and that the rooms can be easily and economically heated. The price will, of course, vary according to the material used in construction, and the style of finish. The scale is twenty feet to an inch.

BAD REPORTS OF FALL WHEAT.

The heavy rains of February which swelled the Ohio river to overflowing, and destroyed millions worth of property in the cities and towns along its banks, did a great injury in another way. They cleared away the snow which sheltered the wheat fields, and the tender plant was left exposed to the hard frosts and biting winds which followed. Nor was this effect confined to Ohio only. It extended over Indiana, and portions of Illinois, Wisconsin, Michigan, and other States of the winter wheat region. Ontario did not wholly escape, for in the southern and south-western counties there were several days of rain and thaw. And now we are beginning to know how the wheat has suffered in consequence. An official report of the Ohio Board of Agriculture, based on returns received from seven hundred townships in that State, shows that the condition of the wheat is only fifty-three per cent. as compared with last year, or little better than half a crop. Even with favourable weather and genial showers throughout the next month, it is stated that the condition cannot improve to more than sixty per cent. of last year's. Reports almost equally discouraging are made for Michigan, Wisconsin, Indiana, Illinois, Kansas, Kentucky and California, the best being only seventy-two per cent. of last year's cut at the same date. Now, when it is borne in mind that those States produce fully three-fourths of all the winter wheat grown in the United States, it must be admitted that the outlook for this year is not very cheering. Under the most favourable circumstances the crop is likely to be considerably under an average; so that looking at the bright side only it seems to be almost absolutely certain that the surplus available for foreign markets will be much less than last year. The present surplus in the United States is less than usual at this time of year, and, taking these several circumstances into account, (in addition to the bad reports of the crop in Europe), there is a likelihood of a speedy rise in the wheat market. Our Ontario farmers have been making slow sales since the drop of last fall, and we will not be surprised now if it turns out that they have been very fortunate in holding on.

HOW TO GROW EARLY POTATOES.

No doubt every farmer thinks he knows how to grow potatoes, and possibly every farmer does. But there are degrees of knowledge, and he is a wise man who tries to profit by the experience of others. How many farmers are there in Ontario for instance, who make an effort to realize the good prices of the early market? The first potatoes of the season often fetch a dollar a bushel in Toronto and other cities, sometimes more, and this continues for two or three weeks, or until the supply becomes plentiful. To how many farmers does it occur that there is a little mint of money in raising early potatoes for the first market? To very few, we venture to say. They leave the market gardeners to enjoy a monopoly of it. Yet, there is no farmer within ten or fifteen miles of a city market—or within fifty miles, if he is convenient to a railway station—who might not grow early potatoes with great advantage. Suppose that he can have the produce of an acre (say 300 bushels) ripe for the market by the 15th July. It will yield him two dollars for every one dollar of a crop two months later in ripening. But, to succeed, it is necessary to follow certain rules. In the first place, the seed planted must be of an early variety and of good quality. A late variety will not ripen early, no matter how early it may be planted; and a poor quality will be a drug in the market. In the second place, the ground should be thoroughly prepared for the seed. It should be warm, mellow, well drained, and thoroughly worked by fall and spring ploughing, with harrowing and cultivating added—all the better if it have a south-western slope, for, in that case, it is warmed for the night, and the morning air will not strike it injuriously on a frosty morning. In the third place, it should be well manured; either with good barn-yard compost or a suitable kind of artificial fertilizer. Some people prefer the latter, because the potatoes have smoother and thinner skin: they are not injured by worms, as is frequently the case with potatoes grown in ground enriched with stable manure. In the fourth place, plant as early as the ground can be got into fit condition—if possible, as soon as the frost is out. Plant at least six inches deep, for the tubers require a good covering. In the fifth place, keep the ground clean. Harrow and cultivate frequently, but avoid furrowing or hilling, for this destroys the rootlets. And in the sixth and last place, watch the ripening of your crop, and as soon as it is ready dig and ship to the best market. It is needless to say that you must keep an eye on the bugs.

A CORRESPONDENT of *Our Continent* says:—"I think I will have the new pantry made something like this:—Low cupboards next to the floor, for things that need to be shut up and yet must be handy; on the top of these, which will be not quite three feet high, a very wide shelf; over this several open shelves, as high as I can easily reach; and above the shelves, filling the space to the ceiling, short cupboards entirely around the room, for cracked dishes that are too good to throw away, but are never used; for ice-cream freezers in the winter, and a great many other things that belong to the same category—a sort of hospital for disabled or retired culinary utensils."

FROM the new edition of Messrs. Geo. P. Rowell & Co.'s "American Newspaper Directory," which is now in press, it appears that the total number of newspapers and periodicals of all kinds issued in Canada is 596. There are no less than 74 daily papers, while the monthlies number 57. The weekly papers number 423. This is an excellent showing for the Dominion, though it cannot of course equal the United States and Territories, in which the journals and periodicals of all kinds now reach the imposing total of 11,196. This is an increase of 585 in twelve months. Taking the States, one by one, the newspaper growth in some is very considerable. The present total in New York State, for instance, is 1,399—a gain of 80 in the past year. The most remarkable change has occurred in the Territories, in which the daily papers have grown from 43 to 63, and the weeklies from 169 to 243—Dakota being the chief area of activity. The number of monthlies throughout the United States grew from 976 to 1,034, while the dailies leaped from 996 to 1,062. Referring to our own journalistic growth, it is interesting to note that the newly-settled regions of our Canadian North-West are productive of newspapers as well as of wheat, for the number of journals issued in Manitoba was nearly doubled during the year.

ROTATION OF CROPS.

A young farmer, living in a grain-growing region, says the *Country Gentleman*, desires some information as to the best rotation of crops, as he was brought up where a hap-hazard want of system largely prevailed. In compliance with his request, we offer some suggestions, with the remark that peculiarities in soil, circumstances, and markets may considerably modify any rules laid down, and the farmer must therefore, at least to a considerable degree, exercise his judgment in connection with experience.

The first great requisite for success—the foundation for all work in a succession of crops—is thorough underdraining. An occasional slough or wet spot in a field will spoil all regular operations. Land which requires two or three weeks in spring to become dry enough to plough will occasion delay sufficient to make all the difference between success and failure. Another important general requisite is a rotation which will keep up a constant succession of returns in crops, without breaks or periods when nothing is coming in. For this purpose, the following course, now largely adopted in the grain-growing districts of this State and elsewhere, is one of the best, requiring five or six equal fields:

1st year, corn and corn fodder on inverted sod, after manure spread the previous autumn and winter.

2nd year, barley, followed by sowing of winter wheat, the ground top-dressed before harrowing and sowing with manure made late in winter which was too coarse for spring spreading, but now well rotted.

3rd year, wheat seeded with clover.

4th year, clover meadow the second crop for seed.

5th year, pasture, top-dressed with manure in autumn or winter, for corn the following spring.

This course may be modified if more grazing and hay are required by another year or two of grass before ploughing for corn. Sometimes there is only one year in clover where grain is the main object, but this does not allow feed for a sufficient number of animals for the copious production of manure. It will be observed that there is no vacant period of any considerable length of time when something is not growing.

There are some smaller crops which may be worked in as desired, as for instance, beans, potatoes and other root-crops with the corn; peas or spring wheat with the barley; or rye with the wheat.

Under peculiar circumstances, with small farms, or where a large amount of fodder is desired, the following simple course may be adopted:

1st year, corn, with rye sown immediately after the corn is removed, the ground being wholly prepared with an Acme or disc harrow. 2nd year, the rye turned under as a green crop late in May, and the corn fodder drilled in, or turnips sown. 3rd year, barley or any spring grain, seeded with clover and timothy. 4th year, and longer as desired, meadow and pasture. This course may be employed where wheat is not raised.

Where summer fallow is required for destroying weeds or for putting rough land in a smooth condition, in a good wheat region, the following rotation may be employed:

1st year, summer fallow, and sown winter wheat.

2nd year, wheat.

3rd year, corn (and roots).

4th year, barley or peas.

5th year, wheat seeded with clover.

6th year, meadow, pasture, etc.

This course, while one summer is lost in fallow admits of a crop of rye sowed after the wheat, to be turned under for green manuring late in the following spring before the corn-planting.

The rye in any of the preceding course may also be cut and dried for spring hay, or fed green, or employed as ensilage. The first and the third courses may be modified by leaving out the barley, and sowing the wheat after the corn, provided some early-ripening corn is planted, to be removed in time early in September.

The amount of labour to be expended on the different crops is more nearly equal since the introduction of improved implements, and especially since the more general extermination of weeds by farmers. For instance, hand-planting corn is obviated by using the tubes of the wheat drill or horse-planter; hand-hoeing is superseded by the frequent passage of the fine slant-tooth harrow until the plants are a foot high, and the two-horse and one-horse cultivators afterward, leaving a clean field for the following grain crop.

It is better not to depend on any particular crop for the main profit, but to bring all in for profitable returns. The following estimates, which every farmer will vary more or less, will show the importance of depending on a continual succession without breaks:

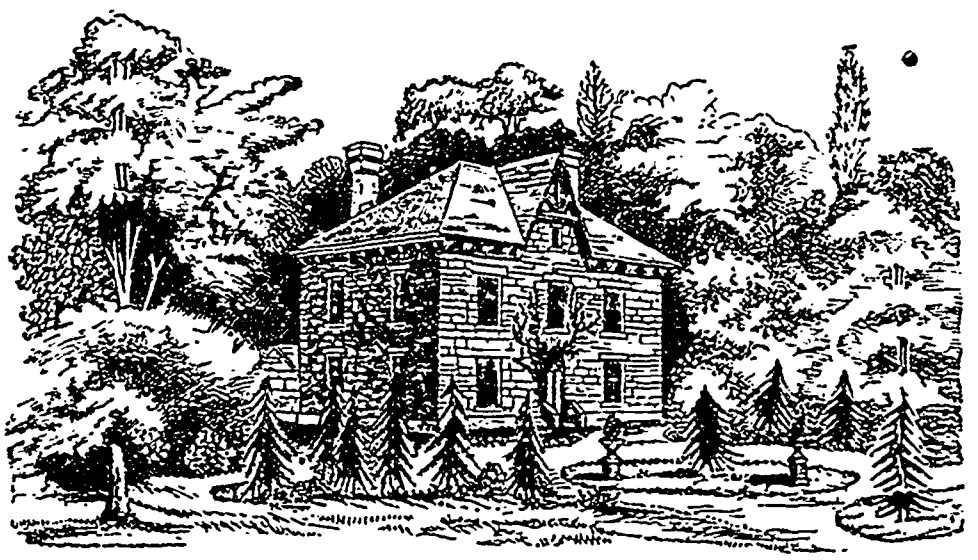
First described rotation, five years—

1. Corn, 50 bush'ls per acre, and 2 tons fodder	$45
2. Barley, 35 bushels per acre, and straw	30
3. Wheat, 25 bushels per acre, and straw	30
4. Clover hay and clover seed	22
5. One year of pasture	12
Crops of five-year course.	$139

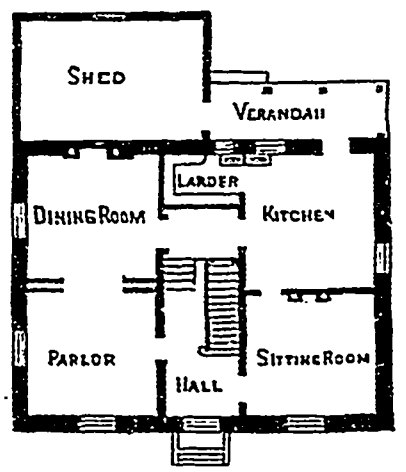
The *third described rotation* of six years, after losing the one vacant year of summer fallow, will give about or nearly the same returns, the more frequent occurrence of the wheat crop tending somewhat to reduce the land; but if both are alike encumbered with foul seeds or roots on the start, the summer fallow, if thoroughly treated, would be likely to leave the ground more free from weeds. A half-way fallow will be useless; no weeds or grass must be permitted.

Whatever course may be adopted, take every opportunity to clear out the weeds with broad cast implements drawn by horses, and avoid the expensive and tedious work of weeding by hand. Harrow thoroughly before planting or sowing, and repeat it often as soon as the corn is harvested.

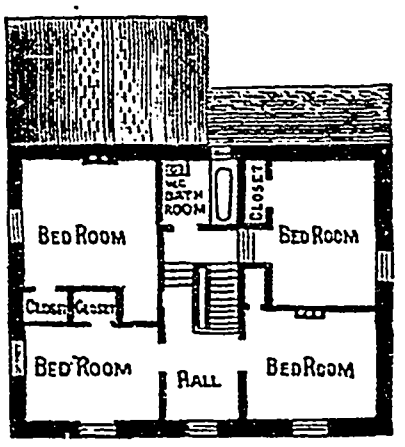
We give the preceding views and estimates with the hope that farmers with successful experience may favour us with their views on the comparative advantages of different modes.



PERSPECTIVE VIEW.



GROUND FLOOR PLAN.



FIRST FLOOR PLAN.

SCALE—20 feet to an inch.

PLASTER scattered over the floors of fowl houses is a powerful absorbent, preventing all bad odours.

GROUND oats form one of the best feeds to promote a flow of milk either in cows, ewes, or in breeding sows. The oats will grind better if one bushel of corn is mixed with every two or three of the lighter grain.

NURSERY stock has suffered severely the past winter. Many trees have been eaten by mice under the snow banks and many killed outright by cold. As there is likely to be a heavy demand, farmers desiring to plant trees should send in their orders early. This is always good policy, but just now especially advantageous, as the price is likely to advance or the supply to run short later in the season.

BEES AND POULTRY.

INCUBATORS.

SOME FACTS OF VERY GENERAL INTEREST.

Editor Nor'-West Farmer:

DEAR SIR,—Kindly give me all the information at your command, through the columns of your valuable journal, respecting incubators.—Yours very truly,

"ONE WHO WANTS TO KNOW."

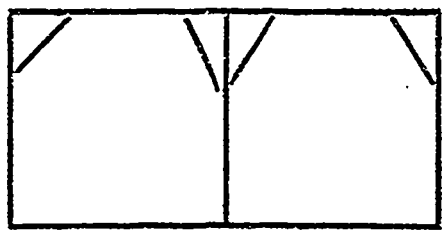
In reply to the request of our correspondent we would say at the outset that the hatching of poultry by artificial means is not a modern invention. There were *mamals* or hatching ovens in use among the Egyptians 2,000 years ago, in which chickens were brought into the world by thousands. The Chinese have reared ducks in this way for ages, and incubators of large size have been found among the ruins of Thebes. Charles VIII had a poultry establishment at Amboise in the fifteenth century, where chickens were hatched by means of incubators. A contract is in existence made by Francis I. at a later date, according to the terms of which the poulterer to his majesty agreed to hatch 1,800 eggs at the rate of 4 sols 2 deniers per 100, from which it would appear that the incubating business was in full blast then, and that royal tables were supplied with "spring chicken" by this means.

It is no wonder that mankind have endeavoured to supersede the hen as a hatcher. She is capricious and wilful, and often clumsy and blundering. Some breeds of fowls are non-sitters, and the different varieties are so "mixed through other" that there is enough of the fitful tendency distributed among them all, to induce many hens to desert their nests long before the time when the chickens are due. The troubles of chicken-rearing with a natural mother are not ended when the little chirpers are safely out of the shell. In fact, they are only begun. A hen that has hatched out a large clutch will perhaps, before long, stamp most of the weaklings out of existence with her broad feet and fusy foolishness; finally strutting around with one poor survivor, over which she shows as many airs and graces as if she had a baker's dozen at her heels. Hens in the defect of being, many of them, very poor mothers, only resemble some other bipeds of larger growth but destitute of feathers, who have more intellect and ought both to know and do better. Notwithstanding these and other difficulties in the way of natural chicken-rearing, it will not pay any but those who keep fowls on a large scale to practice artificial incubation. Indeed, many poultrymen have discarded the practice after repeated trials, and returned to the natural method, as, on the whole, the most practicable and profitable, with all its drawbacks.

One reason for the discouragement and failure which have attended the use of incubators has been the needless complications attached to most of these in the market. They have been beyond the comprehension and management of ordinary people. There is absolutely no need of these. The "automatic regulators," electric and magnetic alarms, and various other devices, have been like the moth-traps and similar humbugs attached to bee-hives, which are not only useless as helps, but downright hindrances to the honey business. The actual necessity of egg hatching are few and simple, so much so that they can be easily fulfilled by any one who is able to read a thermometer and boil a kettle of water, provided he has a suitable hatching apparatus. It is all a matter of even temperature, and though about this there has been much difference of opinion, no one will go much astray who keeps the temperature of an incubator at from 98° to 104° steadily, with the exception of short intervals corresponding to those during which the hen leaves her nest for the purpose of feeding. This varies from ten to fifteen minutes to an hour, or sometimes two hours. During the absence of the hen the temprature has been known to sink to 70° or even 65° without loss of vitality, or injury to the future brood.

Those who have had the most successful experience with incubators warn beginners against meddling much with the eggs during the hatching process. It used to be supposed that they must be turned over and moistened frequently, but this has been found to be quite unnecessary. Many fine-spun arguments about the hen turning over the eggs, and the moisture of her body affording them the necessary dampness, have been overthrown by repeated cases in which batches of eggs have been successfully hatched without the use of these precautions. It is easier to hatch the chickens artificially than it it is to rear them after they are hatched, though still it is mainly a matter of temperature. They must be kept in a room equably warmed with a stove, and some device resembling the brooding of the mother must be provided. One of the best plans is to have small coops that will accomodate not more than twenty chickens, lest some should die of overcrowding. Small doubled blankets laid in these coops, with the edge raised a little for the chickens to creep under, are now commonly used. The coops are made much as here shown:

These are boxes twenty four inches long by twelve wide and six deep. The bottom has a narrow strip two or three inches wide nailed along the front, and there is a partition dividing the box in the middle. The lid, with a handle, is shown raised up a little, and, in the day time, may be lifted off. A number of strips of thick flannel or blanket two inches wide and six inches long are nailed by one end to the lid, so that they hang down and reach the floor of the coop. The chicks nestle among these and keep warm. If extra heat is needed, a few bricks made hot on the stove may be wrapped in flannel, and laid on the top of the coop. Bags of warm sand may be used for the same purpose, or shallow tin boxes filled with boiling water. If the room is kept warmed up to 70°, the chickens will require no other heat. The coops must have no square corners into which the chicks would crowd and smother. The corners should be cut off by pieces of wood being nailed on as here shown.



Food for the young chicks is the next prerequisite to warmth. The best is coarse oatmeal steeped in warm water or sweet milk. This should be fed every hour, in very small quantities, for the first few days. After a week, coarse cornmeal may be given, and a few bread-crumbs, or crushed wheat. Overfeeding must be guarded against. Sand or gravel will be needed in the course of a week or two, when a little must be put in the feeding dishes. Water will be required when dry food is given. In warm weather, nothing is better for young fowls than an out-door run. They may be allowed to wander freely in a cabbage or melon patch, which they will keep free from insects very assiduously.—*Nor'-West Farmer.*

THE GAME FOWL IN GREAT BRITAIN.

Among British farmers there is no more popular bird than the Game fowl, and in many cases families can boast of particular strains which which have been identified with the farms for almost a century. There are two reasons why the Game is so great a favourite, first, because it is preeminently an old British variety, and second, because it is exquisite upon the table. Years ago the fighting propensities of the Game fowl were a recommendation to it, but now these are an objection. It is singular that some landlords used to require the holders of their land to keep cocks for them at their farms, which were walked so as to be kept in prime feather when required. As to the antiquity of the breed, we certainly have descriptions of birds resembling the Dorking which carry us back into remote ages, but with this exception we believe there is no fowl which can be traced so far back as the Game fowl. The Earls of Derby have for generations kept a select yard of them which are known as Derby Reds, and which used to be sought by cock-fighters in all parts of the country. The Game fowl of to-day is changed somewhat in type, and whereas in the fighting days he was a medium-limbed bird with plenty of feathers and a huge, well-sickled tail, he is now quite the reverse, more slender in body, with but a small quantity of feather, which is very short and fine in texture, his limbs are abnormally long, and the bird stands, as it were, upon a pair of stilts. There are four recognized sub-varities of the Game fowl which are considered leading breeds, but others are bred in some parts which, although equally pure, are not so perfect. The first and most popular is the Black-breasted Red, which is the cock red bay in the neck-hackle, shoulder and saddle, with a green black bar on the wing, a black tail, breast, thighs and underparts. The hen is what is called partridge-coloured, a finely-mossed brown, in all but the neck, breast and underparts; the neck is golden striped with black, and the breast almost a salmon-colour. The combs in all Game fowls are single, but it is customary to cut off that of the cock, a process which is termed dubbing. The faces are all red, the eyes red except in the Brown-breasted Reds when they are as nearly black as possible, and this breed is also an olive black in the leg, the legs of all the others being willow-coloured, although some of the Piles are yellow. The head is very fine and long, the beak powerful, the neck long and fine, the breast full and plump, and the heel straight; the stern is narrow, and the tail small and drooping—not erect like most fowls. The wings are hard and powerful, and the flight feathers are the stiffest and toughest of any domestic poultry. All Game fowls are alike in conformation, but not in colour. For instance, the Brown-Breasted Red is purple or gypsy-faced; his hackle, saddle and shoulder are a rich gold, and his breast is black, edged with gold. The hen to match him has similar eyes, feet and face, but her hackle is golden and black like her breast, while her body is an olive black of very great beauty. The Duckwing cock has a yellowish hackle and saddle, a maroon back, a bright mellow golden shoulder, a black bar on the wing, black breast, tail, thighs and underparts, and is one of the most gorgeous of fowls—a perfect bird, being excessively handsome. The hen to match him again resembles the Partridge hen exactly, if we substitute a silver for a brown ground. These Duckwings are most difficult to breed, and are not found in the same perfection as are the other varieties. The Pile or Pied Game is nearly a white-breasted red, instead of a black, and is identical with the first described variety, except that the black parts are replaced by white. The

other varieties are Whites and Blacks, but these are not much bred. It may be mentioned that one or two individuals have maintained a breed of Henny, or hen-feathered Game, the cocks being exactly like the hens in feather. The pit is now a thing of the past, and so persons have turned their attention to breeding for the exhibition pen; hence birds of the Game breed are seen of exceeding beauty. Whether the question of dubbing, or cutting the combs, ears and wattles from Game cocks is an open one or not, we need not suggest, but at all events the question is frequently raised, and although the practice is regular, it is dangerous to be seen operating, for a certain society has proclaimed the wickedness of the practice, without any regard to the sufferings entailed upon the birds which fight with these appendages left on. The fact is, a Game cock will fight, do what you will, but deprived of purchase, he rarely inflicts much damage upon his opponent, and a deprivation of the head gear depreciates the after suffering.

As farm poultry, Game fowls are but moderate layers, but they are not to be surpassed upon the table for flavour, and their cross with the Dorking makes almost, if not absolutely, the meatiest fowl which can be found. No fowl is better for crossing, for imparting quality for table purposes. The hens sit, and sit well if let alone, and allowed to select their own nest, but they are not to be handled, being high-spirited, and to some extent wild. They are brave in defence of their young, and will even attack a cat or dog should one show any signs of interference. The chickens grow fast, and it is surprising how large they become before any one is aware, for, carrying so little feather and such plump bodies, the eye is deceived constantly, and estimates them at a much smaller size than they are.—*London Mark Lane Express.*

THE HONEY PRODUCTION OF TO-DAY.

The Germantown *Telegraph* gives this description of the honey of to-day, as compared with that of yore:

The honey culture, in fact, is a science, and should inspire in those who pursue it a love for it outside of the profit account, and in this case the enjoyment which it imparts must be considered as a part, and a very desirable part of the returns.

The improved hives, which have taken the place of the old, cumbrous ones that were so awkward in handling and failed to yield an equal supply of honey when compared to these re-modelled ones, makes the care of bee-keeping much easier and pleasanter. The small sections, each holding one or two pounds of honey, which go with their disposal, make the article much more salable than formerly, though they require careful handling. The bees have a way of hermetically sealing the combs, and if these are kept intact, the contents will remain undiminished in quantity and unimpaired in quality. If, however, the combs become cracked for want of care in packing, handling and transporting, the sweet store crystallizes and becomes opaque and unmarketable, though not very materially injured. Altogether, with due care and a proper management of this beautiful and interesting branch of domestic industry, the apiary should be found upon a dozen farms where it is now found only upon one.

PROVIDING PASTURAGE FOR BEES.

The *Indiana Farmer* makes the following very sensible remarks on the subject:

Planting for honey has ceased to be an experiment, and is sure to be one of the certainties of success in modern bee-culture. Situated as we are we feel very perceptibly the several regular honey drouths, as any lack of the nectar flow in the several regular honey-producing plants. We have not had the time or room for extensive experiments in this line, but have watched closely those made by our friends and neighbours. And we note the fact that the best and most progressive bee-keepers of America as well as those of the Old World have decided it a success. Sweet clover (melilot) is probably at the head of all special honey-producing plants for planting, under all conditions and circumstances, and we noticed, even up to the middle of November, the bees working, on a few scattered flowers of this plant in protected places.

Figwort is a decided favourite and has some advantages as it does not die out, but grows from the root year after year. Spider plant is another. J. Lammey, Bateham, Ind., says in a letter to us, Oct. 15: "The spider plant seed I got of you last spring was a decided success. It began blooming July 1, is in bloom yet, and to see the bees on it of a morning would delight the heart of any bee-man." In planting sweet clover we notice that sown in the fall and winter does the best, and we conclude the cold of winter to be of some benefit to the seed thus sown. A united effort of the many bee-keepers would soon produce a flora in the land of uncalculable worth.

Cleanliness is a most important consideration in keeping many fowls. If the hens are confined to the house the droppings should be taken up every morning. A hoe, or a scraper and shovel will be needed, and then a broom to sweep the floor. Keep a barrel near at hand in which to deposit the manure, which is best kept dry till used.

As fowls for egg-laying, a British authority says nothing could be better than a cross between the Black Hamburg and Minorca. Game on Dorking, he also says, gives "the finest table fowl known," having precocity of growth and the most and best flesh, while a cross between Houdan and Dorking yields a very large and precocious chicken, of vigorous development and a capital layer.

A French authority gives the following old recipe for testing the age of eggs:—Dissolve four and a half ounces of common salt in a quart of water. An egg, placed in this solution, on the day it is laid will sink to the bottom, one a day old will not reach quite to the bottom of the vessel; an egg three days old will swim in the liquid, while one more than three days old will swim on the surface.

Bee-culture has been powerfully advocated for the honey sake, and would probably be more general if sugar were not so cheap. There is, however, another advantage, which Darwin's researches have proved, viz.. The action of bees in the fertilization of flowers. Every farmer who grows red clover for the seeds sake is too familiar with the uncertainty of this crop, the seeds of which ripen with most vexatious inequality. Herr Haberlandt, who has followed up and confirmed the researches of Darwin in reference to these particular flowers, strongly recommends the rearing of bees on all clover farms for the special purpose of fertilization, even though their honey be disregarded, for it appears that clover is entirely dependent on insects for its fertilization, and chiefly on bees. The form of the flowers, and the manner in which the maturity of the lower florets precedes that of the upper florets, renders the success or failure of a clover seed crop simply a result of the employment or non employment of these humble farm labourers.—*Farmer and Manufacturer.*

GLEANINGS FROM MANY FIELDS.

The continued cold weather late in the season is causing severe losses of early lambs. In many cases it is almost impossible to save the lamb, which is soon chilled beyond recovery if exposed to the weather,

After a severe winter cows are generally not in as good flesh as usual. The scarcity and high price of corn also had its effect in the same direction, and must affect the butter and cheese production the coming season.

The granary should be entirely cleaned at least once a year, or it may breed weevil in the old grain. The wheat needed for flour for family use should be ground during some warm day in spring and kept in barrels in a cool place during summer.

A. J. Downing, who was one of the best horticulturists America has ever known, said: "If I were to preach a sermon on horticulture I should take as my text, 'Stir the Soil.' Frequent and deep stirring will enable one to grow fine vegetables on comparatively poor and slightly manured soil, while without it one fails to gain the proper advantage, even from the richest and finest soil."

The wise farmer will keep a good class of horses or none. There are cases in which circumstances may interfere somewhat, but the man who tries to run a farm and get the best results by getting along with old plugs of horses, certainly stands in his own light. The character of his horse is generally a pretty good indication of the character of the owner.

According to best German authorities, sweet corn contains more digestible matter, more muscle-making and fat-forming material, than common corn or oats, and hence is better for growing animals than either. A proof that there is also considerable nutriment in the stalks is the fact of making a large percentage of molasses from them after the ears have been removed.

The following, from an exchange, is certainly worth a trial, especially as sheep and pasture are plentiful and mushrooms are a scarce luxury: "The only certain mode of growing mushrooms is to pen up three or four sheep in a pasture lot, and in a year or two you will get a supply of all the mushrooms you can possibly consume. It will cost but a little to raise them in this way, as by keeping your flock of Southdowns the family will be occasionally regaled with the very best mutton as well as mushrooms."

For permanent pasture marl is one of the most beneficial substances that can be used, whether the soil be light or heavy, and on newly-seeded grass lands it is almost sure to guarantee a good sod Now, regarding the true value of marl, considering its chemical value, it is usually sold for about one third the price it is materially worth, and it is almost impossible to fail in securing more benefit from its use than the cost of procuring it. As marl and plaster are more abundant than many other mineral fertilizers, they are cheapened below their value from that cause.

When there are a number of girls at home it is an excellent plan to allow each one in turn to assume the responsibility of housekeeping for a certain time. It does not hurt girls to be made to take a measure of responsibility concerning household tasks, far otherwise it does them immense good. Let them in succession have, a week at a time, charge of the chamber-work, the mending, the cooking, the buying even for the family—all, of course, under proper supervision—and their faculties of reason, perception, judgment, discrimination and continuity will be more developed in one month of such training than in six months of common schooling.

VETERINARY DEPARTMENT.

GLANDERS AND FARCY.

BY WILLIAM M'EACHRAN, M.D., V.S., WINNIPEG, MAN.

THE DISEASE, GLANDERS,

is one which is of great antiquity, and is widely scattered throughout the globe, Australia being perhaps the only country in which it is not known. It appears in some countries in a more severe form than in others, and is found in its most virulent type in countries in which the laws of health are neglected or altogether ignored. It is, therefore, not at all surprising that it should prevail in Manitoba to a considerable extent, as in the hurry and rush of a new country which is besides, as a rule, flat prairie land, the laws of health are to a great extent unheeded. The terms, "Glanders" and "Farcy," are employed to designate two forms of the same disease; that is, Glanders and Farcy are essentially the same disease, but are manifested by external symptoms differing to a great extent. The term, "Glanders," is applied to the disease when the nasal and respiratory tracts, together with the glands between or beneath the jaws, are affected, while "Farcy" is applied when the disease manifests itself in localized spots on the skin and subcutaneous tissues. It will I think be unnecessary for me, in a paper like this, to attempt to prove this fact. suffice it to say that, according to the best authorities on such subjects, these two are considered to have been proven to be one and the same disease; that the poison from glanders, if innoculated in a healthy animal, will produce either Glanders or Farcy, and also that the poison of Farcy will produce one or other indifferently. Glanders and Farcy may be defined to belong to the class of specific diseases, that is, are due to a special poison peculiar to the horse, and which is only developed primarily in the equine species; though it is capable of transmission to other animals, and to mankind by direct innoculation or by infection. It is contagious and infectious; should be considered as incureable, and in a variable period of time is always fatal.

CAUSES.

The causes which produce Glanders may be said to be twofold, viz.: Predisposing and Active. In the first class are included all causes which produce debility and defective or perverted nutrition, these being held by the best authorities to be sufficient to produce the disease spontaneously. The disease is certainly found appearing constantly in places where hygienic measures are neglected, and the laws of health are ignored. In many of these places no history of the importation of a diseased animal can be got. Extreme fatigue and severe exertions, together with exposure in bad weather, with an insufficient supply of good food, will, in many cases, produce the disease. Confinement in low, damp and filthy stables, and, in fact, anything which will tend to lower the health and condition, may produce the disease. It sometimes follows upon old standing cases of mange and other diseases. The *second*, or Active, cause of the disease is, however, the most important, as while all these circumstances *may* produce the disease, the active poison once generated in the body of an animal certainly *will* produce the disease in other healthy animals. What the specific poison is has not yet been satisfactorily demonstrated, but that there is such a poison in glanders and farcy is well known. It is fixed and contained in all parts of the diseased animal, but is most active in the discharges from the nostrils and "Farcy buds" or ulcers.

SYMPTOMS.

As settlers and others will require to purchase horses for farm work on their arrival in this country, it is essential that they should be on the lookout for animals which unscrupulous persons may seek to dispose of, as not only will such an animal be useless to them, but is also dangerous to the rest of their stock and to themselves. They should, therefore, note carefully the symptoms presented in this disease, so as to be in a position to recognize it when it appears. There are two forms of Glanders, a *Chronic*, and an *Acute*.

CHRONIC GLANDERS

is the form most frequently met with, and is the most dangerous, because most insidious and lasting longest, thereby giving every facility for the spread of the disease if not recognized. It is usually to be met with in coarse, lymphatic, old and worn out animals, but may be also met with in any class where it has been contracted by inoculation. It may continue for months and even years, and yet no severe constitutional disturbances be manifested. There are three essential symptoms which should always be looked for in a horse suspected of Glanders. These are the *discharge from the nostrils*, the *ulceration of the mucous membrane of the nostril*, and the *enlargement and induration of the inter or sub-maxillary glands*. The disease usually commences with the signs of a cold in the head, or catarrh of the nasal passages, *a discharge* flowing from one or both nostrils. The discharge may be at first clear and watery, but soon becomes opaque and viscid, collecting round the nostrils flowing slowly and in strings, and collecting round the margin or snorted out in lumpy masses. This discharge comes from the seat of the ulcers. Rarely, there may be no discharge, and only the enlargement and induration of the glands to indicate the disease. After a short time the discharge becomes more copious, and forms greasy feeling brown crusts around the margin of the nostrils. It is at first albuminous in composition, but later it becomes purulent. At first there may be only a slight sickly smell, but later it becomes very fœtid, especially when it collects in the nasal sinuses, and is exposed to the air before being discharged. The *ulceration of the nostril* is the next symptom to be observed, and this should always be looked for carefully where the disease is suspected. At first they commence as small nodules on the mucous membrane, and may be found on the septum or just within the nostril; they may also be situated so high up in the nostril as to be out of sight. These nodules are about the size of a grain of millet seed, or sometimes as large as a small pea, and may be felt when they cannot be seen; they appear as small yellow bodies with a red circle around them; they are rapidly developed within twenty-four hours. In two or three days they liquify in the centre, and they become white and opaque, and the membrane covering them is detached and thrown off, and a drop of pus escapes from the nodule, leaving a concave depression. At the beginning this depression is circular, of a leaden grey colour, sometimes streaked with blood, or it may be bright red or violet coloured. Round this there is a hard circle which is slightly elevated. This sore or ulcer, once formed, continues to discharge matter from it, and displays no tendency to heal. The matter sometimes coagulates on its surface, forming a crust, which is easily detached. The ulcer spreads more or less rapidly, and if two or more are adjacent, they may join, forming one large rodent ulcer. This ulcer is easily recognized, and should never be mistaken for anything else, as in no other disease are the same characters presented. A simple means of determining the disease in a case which is doubtful is to take a little of the matter from the ulcer or nostril, and making a small cut in the neck or shoulder, the disease will as a rule develop itself in an acute form. *The third* symptom to be looked for is the alteration which takes place in the glands beneath or between the jaws. From this symptom the name Glanders is derived. This symptom is never absent in a confirmed case of Glanders. The alterations consist of an enlargement at first of the sub or inter-maxillary glands, the size being increased from that of a chestnut to that of a small apple. It is elongated from behind to before: it is irregular on its surface, being lumpy; at first it is soft and extremely painful on manipulation, but in a few days the tenderness disappears, and it becomes hard and indurated, smaller in size and closely attached to the surrounding tissue, sometimes being apparently attached to the jaw. The gland never suppurates, poultices or liniments not having any effect in softening it These are the characteristic symptoms of the disease, and in nearly all cases are all present. In advanced cases certain other symptoms may be observed—Sarcocele and enlargement of the joints and sheaths of tendons, swellings of the legs and lameness, bleeding at the nose (epistaxis), cough, irregular breathing and swellings of the sinuses of one side of the head from accumulation of matter—which, taken with the essential symptoms, will help in making a correct diagnosis of the disease. Accompanying these special symptoms there are certain general signs of the presence of the disease, fever, weakness and debility, unthriftyness, diminished appetite, loss of flesh, etc., all of which precede or accompany the active symptoms. When these appear there may be a deceptive recovery, the animal improves in health and condition. This may continue for some months, when a relapse takes place, and the disease continues its ravages on the system, the animal being subject to attacks at intervals, some of which may be so severe as to kill him in a few days by an attack of Acute Glanders. In other cases the disease may linger on until the animal dies from exhaustion or pyœmia from the formation of glanderous abcesses in the lungs or other organs.

ACUTE GLANDERS

may occur as a primary disease, or it may occur as a secondary affection terminating an attack of Chronic Glanders. The symptoms are somewhat similar, but developed much more rapidly, and being much more intense in their manifestations. There is at first high fever, loss of appetite, depression and rapid emaciation; a dry, unhealthy looking coat with an exceedingly high temperature, viz.: 106° to 107° Fahr. On slight exertions the animal perspires freely, and lassitude is most marked. There may be shiverings and tremblings, and sudden lameness without perceptible cause. The urine is increased in quantity, the breathing is hurried and irregular, forty to fifty per minute. The pulse is weak and quick; the mucous membranes are congested, or may be violet coloured, and sometimes tumified. These symptoms may last two to four days, when they may abate, and the essential lesions already described will present themselves, and after they are well declared the fever again increases, and the animal rapidly loses strength. Complications arise; pneumonia may attack the lungs, oedema of the chest, abdomen, sheath or mammæ may appear; the discharge from the nostrils becomes very copious, emaciation is rapid, and profuse diarrhœa may set in. Death will occur in from eight to fifteen days from the appearance of the fever, and will be due to exhaustion or lung fever as a complication of the disease.

FARCY.

There are also two forms of Farcy, a Chronic and an Acute.

CHRONIC FARCY

is the least dangerous of the glanderous affections from the slow development of the disease, and from the fact that the lesions are external. There are both local and general symptoms here also. It is usually found in common bred heavy horses which are old or worn out and ill-fed and stabled. The general symptoms are but little developed, being slight indications of fever which may pass unobserved. The local symptoms consist in the appearance in various parts of the body in the skin and subcutaneous connective tissue, of a variable number of indolent tumours or "Farcy buds" which soon ulcerate and become infecting chancres, being the specific feature of the disease. These tumours are isolated, and begin to form beneath the skin which is affected when they begin to ulcerate. Particular regions would seem to be selected in preference: the face round the eyes, nostrils and lips, inside the limbs, chest, flanks, thighs, legs and abdomen, and near the root of the tail, are more particularly liable to be the seat of Farcy buds. They vary in number, apparently according to the strength and constitution of the animal, and their development in the various parts may extend over months. When they are developed they soon undergo changes which always result in ulceration; they begin to soften in the centre, and from four to ten days after their appearance they will present a thin sac of pus which readily bursts, giving exit to a small quantity of thin yellow oily looking pus, the appearance of which is characteristic of the disease. The circumference of the ulcer now formed is circular, slightly ragged, elevated with a concavity, and of a dirty yellow or grayish hue. It now continues to discharge pus copiously, forming crusts on the hair and skin adjacent. The ulcer shows no tendency to heal, unlike an ordinary sore, and extends by eating into the the tissues around its margin. At the same time, or following the development of the buds, the lymphatic glands in certain regions become affected, and the chains along the neck in the course of the jugular, inside the forearm and thighs, may be felt as hard "cords" with knots here and there. These glands may in turn become Farcy buds, and so the disease extends. Large tumours will sometimes be developed in the course of the disease. But the chief characteristic of the disease, as already stated, is the Farcy bud, and this need never be mistaken. Chronic Farcy may last for years, and the animal appear comparatively well, yet, it is extremely dangerous as every ulcer is an inflecting sore, and there is consequent danger of the spread of the disease.

ACUTE FARCY

presents symptoms similar to the chronic variety, but runs its course in a much shorter space of time; in a few weeks or months they may die of exhaustion, if not killed before they reach that stage.

TREATMENT.

Glanders and Farcy being to all intents and purposes an incurable disease, it is mere folly on the part of the owner of any animal suffering from the disease to trifle with such a serious matter by attempting medicinal treatment, once the disease is so well marked as to be easily recognized. Should therefore any animal, which is even suspected of the disease, gain admittance into a stable, he should at once be isolated from contact with all other animals, and so kept until he is examined and pronounced upon by a competent veterinary surgeon, when if the animal be declared to have Glanders, he should at once be destroyed, and the carcass buried at least six feet beneath the surface, and a barrel of lime scattered over him, and not left, as is unfortunately too often the case, to rot on the open prairie, spreading the disease further. The stall with that adjoining, if in a large stable, and the whole stable, if a small one, should be thoroughly disinfected; the walls and woodwork should be scraped and washed with hot water, then whitewashed with lime, to which some disinfection, such as carbolic acid or chloride of lime has been added, and the place should be well aired for at least eight days before being used again. The utensils used with the infected animal—the buckets, brushes, halters, blankets, brooms, etc., will be best destroyed. The harness should be thoroughly washed in hot water, and dried in the air for ten or twelve days before being used again. The floor, if of wood, should be well scraped and limed, and if of earth, should have six inches removed and buried, and replaced by new earth. To prevent Glanders developing spontaneously should be comparatively an easy thing. Stables should be built on high ground if possible, so as to secure drainage; at least they should be built above ground, and not, as is too often the case here, underground; accumulations of manure and urine should not be allowed in and around or beneath stables; stables should be kept clean, a coat of lime-wash should be given two or three times a year; ventilation should be good, and a regular supply of good food and water. Should these points be attended to. there need be no fear of a spontaneous outbreak of Glanders. Once the disease has, however, broken out, suppression by the slaughter of the animal is the only method of treating the disease which will be a benefit to all concerned, and we are pleased to see that the Local Government of this Province are taking such active measures to rid the Province of this plague, and it behoves the owners of stock, not only in their own interest, but in the interest of the whole Province, to assist the Government by every means in their power to get rid of this disease.

BREAKFAST TIME.

HOME CIRCLE.

THE POWER OF INTEREST.

We have written on the power of interest, but for all that the subject will bear repetition. The power of interest is one of such absorbing attraction as to demand our earnest attention. It is one of the despotic claims upon our economical resources. It is exacting to the pound of flesh. It heeds no pitiable cry of distress, but is as heartless as the wrecker who, with his false light, leads the unwary mariner to destruction. So do the lords of interest allure with the glitter of the principal the necessitated borrower, while they calmly see enormous interest shattering his hopes upon the surest of all rocks of destruction—interest—one of the most ruthless of all the foes of political economy. Exorbitant interest tends to the accumulation of wealth in the hands of the few, thus jeopardizing the material interests of the many to an extent that tends to financial revolution. To show the actual working of this exhausting element, let us draw an illustration from the idea of an eminent economist. A man buys a house for which he pays ten thousand dollars. He leases it and charges the tenant seven per cent. upon its cost, clear of insurance, taxes and repairs. The rent is payable quarterly. A rate of interest of seven per cent. per annum, payable quarterly will accumulate a sum equal to the principal loaned or invested in property in ten years. In the first period of ten years, therefore, his rents build him as costly a house as the first. In twenty years his rents build three houses, in thirty years seven houses, in forty years, fifteen houses, in fifty years thirty-one houses, in sixty years sixty three houses, in seventy years one hundred and twenty-seven houses.

In seventy years all these are built from the accumulated rents of one house. These houses are worth one million two hundred and seventy thousand dollars, which sum has been paid for seventy years' rent of one house worth ten thousand dollars. If instead of being invested in the house and lot the ten thousand were loaned on interest at seven per cent., and the interest collected and loaned quarterly, the money would accumulate precisely the same amount as the property. Take another illustration of the power of interest: Two mechanics just come of age are desirous of becoming rich. Each is able to earn a dollar a day over and above his expenses. Every six months they invest the money thus earned at seven per cent. interest, the interest payable half-yearly. These men earn an average of a dollar a day besides their expenses three hundred days in each year, forty years and four months; their age is thus sixty years and four months. Each earns by labour three hundred dollars per year for forty years, or for the whole period twelve thousand one hundred and twenty—together, twenty-four thousand two hundred and forty. But the interest on their return, loaned half-yearly for a period of forty years and four months, doubling at seven per cent., paid and reinvested half-yearly, in ten years and four months amounts to one hundred and four thousand five hundred and fifty dollars and seventy cents, which added to the amount of twenty-four thousand two hundred and forty earned by their labour, makes the aggregate one hundred and twenty eight thousand seven hundred and fifty dollars and seventy cents. The interest on the same twenty-four thousand two hundred and forty dollars earned by their labour is one hundred and four thousand five hundred and fifty dollars and seventy cents, more than four and a quarter times greater than the amount they have earned by their labour. Suppose the two men live twenty years and two months longer, that is, to the age of eighty-one years and six months, and continue to loan their money during this period, it would double the sum, which makes the total accumulation in sixty years and four months five hundred and fifteen thousand and two dollars and eighty cents. The two men do not labour during the last twenty years and two months, and expend of their income for living during that period fifteen thousand two dollars and eighty cents, leaving to their heirs five hundred thousand dollars. The above figures are placed on exhibition to correct a false impression so prevalent that large estates are the creation of speculation, or owe their origin to lucky ventures, deeds of inheritance, or other come-by chance; but it is not so in a majority of cases, it is merely the result of moneys husbanded and faithfully applied to economic purposes, which grew to amazing conditions when allowed to accumulate. The converse of the proposition is that if the gatherer of interest accumulates so quickly and so largely, the borrower of necessity must lose or be diminished correspondingly, exhaustively so; hence a conservative view leading to defined action would suggest a rate of interest that would be ample compensation for the investor, while it did not oppress the borrower. What this rule shall be is an open question.—*Exchange.*

THE STOCKINGS GRANDMA KNIT.

In these busy days grandma's occupation is gone. This noisy, whirring, breathless machine has quite drowned the soft, irregular click of her knitting-needle, and while the dear old eyes are looking for a dropped stich, lost because some youngster's restless pate bobbed against the patient arm, the tireless machine has finished a long-legged stocking and is clamouring for more yarn. Grandma still sits on the south porch or in the warm chimney-corner and knits, but who waits now for the stocking to be finished? The rattling, clicking, noisy old mill, with its smell of dyes, its whirr of machinery and noise of steam, pours a steady cataract of socks and stockings on the market while grandma rounds the heel of a little one for Harry or points off the toe of a big one for Fred. Who waits for grandma's stockings now? Ah, well; we all wait for them now and then. The noisy old mill doesn't make them so warm after all. Does ever the breathless snapping machine stop to teach a bright-eyed urchin to knit a straight row on a pair of chicken quills? The wrinkled old hands, how softly they patted the cheeks of the romping grandchild, not half so soft in their childish curves as the touch of grandma's hands. The stocking grandma knit; how much love went into every stich, how many prayers were wrought into every round. Somewhere I once read about a nun who bent over her needle work and as oft as a tear fell from her eyes upon the snowy fabric she wrought about it and worked it with her deft needle, until at last the strange design wrought out a touching story of her loneliness and sorrow. And if we could read all the dreams, and thoughts and prayers that grandma wrought with those patient needles we would wear the stockings she knit on our hearts, rather than on our feet. For here is a dream of John, and there is a tear for Chris's Robbie, and here is a plan for Will, and here comes creeping in a quivering strain from some old, old hymn that is hallowed to us now because it's lips blessed it so often; see how a prayer quivered all along this round; here the stocking was layed down, while the old hands turned over the leaves of the Bible that seemed never to be out of her lap; here the old eyes looked out accross the pasture and the mowing-lot down to the wooded hills where the birds were answering winds; here the old eye sleep for a few minutes, and here is a knot. Ah, yes, Phillie and Annie are home this week and the house is full of their children. There will be many more knots in the yarn before the stocking is finished. Who is the boy whose fate it is to hold on his extended hands the skein of yarn while grandma winds it off after the romping youngsters who taunt him with shrieks of laughter as they desert him. But never mind, grandma comforts him with splendid stories of Uncle Doc's pranks when he was a boy and went to school at Carmichaeltown, until the boy wishes the skein was five miles long. And then he is rewarded by a great big cooky, sweeter than honey, because he was such a good boy. The only thing that took the edge of this reward was that all the other children got just as big cookies as he did, because somehow grandma's reward for the good boy and girl managed to include all the other boys and girls. To grandma all children were good; some children were better than others, but there were no bad children. A thousand blessings a thousand times told, on the dear old face and the silver hair that crowned the placid brow; on the wrinkled hands and the work they wrought; on the dear lips and blessed old hymns they sung; on the dear old book that lay in her lap, and the life that drew so much of love and faith and help from its pages. In every household and every nook of the land in the city tenement and in the roomy old farm house; in the mansion on the avenue and in the cottage down the lane, God bless grandma and the beautiful memories her figure always evokes.

THE MAIDEN'S CHOICE.

Genteel in personage,
Conduct and equipage;
Noble by heritage,
Generous and free.
Brave, not romantic;
Learned, not pedantic;
Frolic, not frantic—
This must he be.

Honor maintaining,
Meanness disdaining,
Still entertaining—
Engaging and new.
Neat, but not finical;
Sage, but not cynical;
Never tyrannical—
But ever true!

SAYINGS OF GREAT MEN.

The essence of the grandest sayings appears to be that in such sayings the speaker flings down his glove to all the forces which are fighting against him, and deliberately regards himself as the champion of some dramatic conflict the centre of which he is. Cromwell's "Paint me as I am," and the more elaborate, though not more memorable, "I have sought the Lord night and day that He would rather slay me than put me upon the doing of this work," or his reputed saying of Charles, "We will cut off his head with the crown on it," all implied his supreme conviction that he was the involuntary minister of a great series of providential acts. It is the same with Mirabeau's contemptuous thrusting aside of the part taken by Layfayette with the scornful remark, "He would fain be a Grandison-Cromwell?" and still more with his inflated, but still genuinely sincere, avowal in the Constitutional Assembly. "When I shake my terrible locks, all France trembles," and his brushing away of the thought "impossible,"—"Never mention that stupid word again." Even Voltaire, in his flippant way, regarded himself, and deliberately elected to regard himself as the one personal enemy of the Roman Catholic Church, when he said in reply to a friend who had noticed his reverence as the host passed, and who asked whether he had been reconciled to the Church, "We bow but do not speak." It is true that many such sayings acquire their dramatic meaning by the artificial moderation rather than the emphasis of their language, as when the Duke of Wellington spoke of the battle of Navarino simply as "an untoward event;" but this, too, was supreme assumption in disguise, for it meant that he was able entirely to ignore its drift as a battle, and to concentrate his attention and the attention of the world solely on its tendency to unsettle "the balance of power." The perfect silence in which he passed over the common place view of Navarino, and insisted in looking at it solely in the attitude of a diplomatist, indicated in the most graphic manner how completely indifferent he felt to the class of consequences which would first strike the popular mind. His serene indifference to the Turkish disaster as a disaster was quite Olympian. Perhaps the finest thing ever said was Burke's answer to Pitt, who declared that England and the British Constitution were safe till the day of judgment; "It is the day of *no* judgment I am afraid of;" but it is not certain that Burke really meant to convey all that the words do convey. Possibly, he meant it chiefly as a sarcasm on Pitt's want of judgement; but the larger sense of the saying, in which it means that it is not the day of divine judgment that is to be feared, so much as the day when the reality of divine judgment is hidden from men, and human beings go on in the frivolous, irresponsible pusuit of their own wishes, is quite worthy of Burke, and conveys a grander conception of the spiritual scales in which political negligence will be judged, than any other saying which even Burke himself has uttered.—*Spectator.*

FLYING FISH.

In the sea there are three flyers that really, from the extent of their flights, deserve the name. Those of our readers who have been at sea, especially in the South, may have seen the common flying-fish, with its brilliant blue-and-silver body and lace-like, sheeny wings. From the crest of a blue wave they dart, singly or in flocks, fluttering along, rising and falling, turning in curves, and returning to the water with a splash—perhaps to fall a victim to some watchful bonito (or dolphin) that has been closely following them beneath the water. These privateers of the sea are their greatest enemies, as they rise in the air following them under water, and emerging just in time to catch the luckless flyers as they descend. The dolphins will take great leaps of twenty or thirty feet in following the poor flying-fish, which, notwithstanding their long wings and wonderful powers, often fall victims to their tireless pursuers. They frequently fly aboard vessels at night, perhaps attracted by the lights, or, it may be, caught up by the wind from the crest of some curling wave, and carried in air against the sails.

The gurnard, though it has also long, wing-like fins, presents otherwise a totally different appearance. Its head is inclosed in a bony armour, from which project two sharp spines. Some of these fish are of a rich pink colour, while others are mottled with red, yellow, and blue, and as they fly along over the water, and the sunlight falls upon their glittering scales, they seem to glow with a golden lustre. With such hard heads, it will not be surprising information that they are disagreeable fellows to come in contact with; at least, so thought a sailor who was standing at dusk upon the quarter-deck of a vessel, near one of the West India islands. Suddenly he found himself lying upon his back, knocked over by a monster gurnard that, with a score of others, had darted from the water, this one striking the man fairly in the forehead. The gurnards are also chased by dolphins, and they are frequently seen to rise in schools, to escape from the larger fish, while hovering above them are watchful gulls and man-of-war birds, ready to steal them from the jaws of their enemies of the sea.

In company with these flying-fish may often be seen curious white bodies, with long arms and black eyes. They are flying-squids, members of the cuttle-fish family, and the famous bait of the Newfoundland cod-fishermen. On the Banks they are often seen in vast shoals, and during storms tons of them are thrown upon the shore. When darting from wave to wave, they resemble silvery arrows, often rising and boarding ships in their headlong flight. So valuable are they for bait, that four or five hundred vessels at St. Pierre are engaged in catching them by means of jiggers.

Many of the squid family leave the water when pursued. Even the largest of them, often forty or fifty feet long, have been seen to rise ten or fifteen feet in the air, and sail away as if propelled by some mysterious force, their hideous arms dripping and glistening. They are certainly the largest and strangest of the flyers without wings.—*From C. F. Holder's "Flying without wings," in St. Nicholas for April.*

WHY OUR GIRLS DO NOT MARRY.

Well most of them do marry when they get ready, and the the right one of "Our Boys" happens along. Sometimes, however, some of the very best girls are left out in the cold. A good deal has been said on this subject, both in books and newspapers, and it is generally supposed that it is a sufficient answer to say, "Marriage is a lottery, and all do not draw prizes." That is not the question at all. The real question is, rather, "Why are not all the *prizes* drawn?"

There appear from time to time articles in the newspapers upon this subject, and it might be talked over in many houses with good effect. These newspaper and book articles frequently take the form of communications from young men who have a limited amount of income, and who would like to marry, but who say that they dare ask no young woman whom they know to share their poverty with them. The amount that was formerly sufficient for the fathers and mothers, will not do, as they think, for the daughters—girls are so extravagant nowadays, and require so much. It may be that this is partially true, but I have grave doubts of it, and should like to ask who it is that make this sort of objection? Is it the girls themselves, or their parents? How many fathers and mothers are willing that their daughters shall begin life as they did, with just as simple surroundings? It is not the higher education that our girls receive that unfits them for it; there is nothing in mechanics or geology to inspire a girl with the notion that unless she can marry a man with ample means to support her in idleness, she cannot consent to a life with him. It is rather the false ideas instilled into her mind at home. They say, what folly in her to leave a luxurious home for the unpretending one her husband can give her, where she will be obliged to do her share towards the common work of making it what it should be. What obstacles are put in her way! Unless she is a girl of high spirit and great determination, and who can follow Montaigne's advice, and do what she is afraid to, she gives up, but not because she believes that she could not be happy and useful in the home offered to her. It is the old story that a woman will follow the man she loves "beyond the night, across the day, through all the world." The girls are not to blame, but the parents, who, like crusty gardeners, have watched and guarded the perfect bloom of the hot-house plant, and will not allow it to be taken from them till it has become withered and faded, and then they are themselves obliged to leave it after all.

YOUNG CANADA.

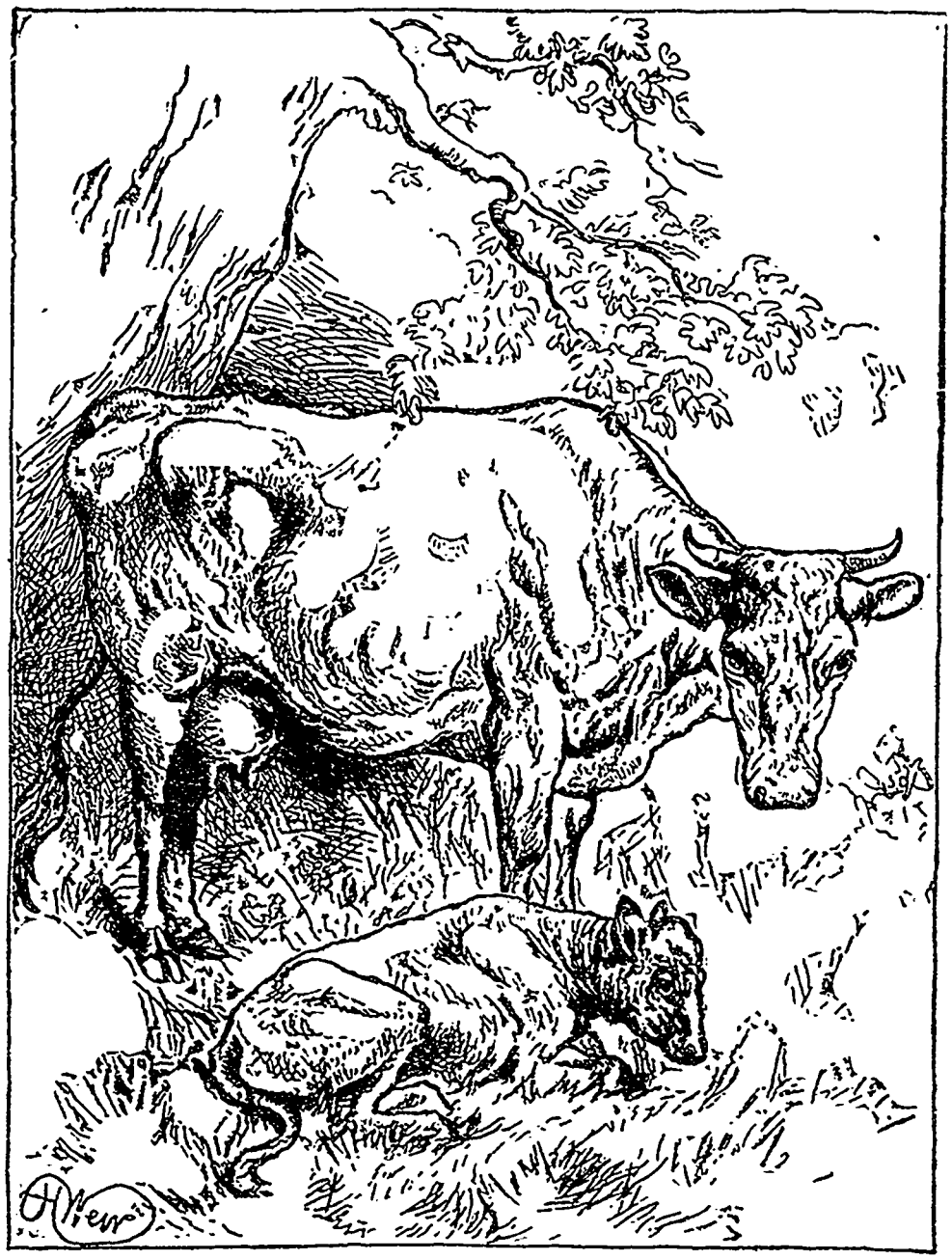
FUN WITH A LINCH-PIN.

Three boys of our acquaintance are good, kind-hearted, generous fellows, who would not intentionally do any mean act. They are also active, fun-loving. They have just the talent and abilities to make excellent men, and we have considered them among the best and most promising boys we know of. Recently they saw a farmer selling potatoes from his waggon, and made some jocose remark about one of his horses. He rather gruffly told them to go away. No doubt he was weary, and no one enjoys having sport made of what he may not be able to help. A few minutes later he carried a basket of nice potatoes to the cellar of a customer, and the boys noticed that the linch-pin which held one of the wheels on was loose and partly out. Had they acted on the impulse of their hearts' best and real feelings, they would have pushed it back into its place, or have told him about it. But, prompted by their fun-loving natures, in a thoughtless moment they pulled the pin out and dropped it on the ground, half wishing, or hoping, perhaps, he would see it, but yet thinking what fun it would be to see the wheel come off and the potatoes dumped into the street. So they went off a little distance, putting on an unconcerned look, but watching for the result. On starting the team the wheel left the axle, the potatoes did tumble and spread out in amusing style, and the boys had a hearty laugh. But the crash frightened the apparently dull team; they started on a jump which threw the farmer off his balance. He fell in front, and a wheel crushed the bones of his right arm, and barely escaped crushing his head also. He is now confined to his bed, and will never be able to use his arm at hard work. The horses ran against a tree, not only scattering the potatoes widely, but smashing the waggon, and the broken tongue so maimed one of the horses that he had to be killed.

Had these boys stopped to look ahead and see the possible result of what at the first impulse seemed so small a matter as pulling a bit of iron, would they have done it? We like to see our young friends cheerful, happy, we had almost said frolicsome—and will say it in the best sense of the word—but, dear boys whenever you are planning any enterprise or sport, remember the linch-pin, and stop long enough to think what may be the outcome, and don't run risks, hoping that chance may bring all out well.

A FOND MOTHER.

The accompanying engraving in THE RURAL CANADIAN for this month is from a picture by Harrison Weir, one of the best living animal painters. The spring time has come again, and the world is full of promise and hope. The young calf soon tired out with romping and play has lain down to rest. The mother stands beside it with her great patient eyes filled with affection for her little one. Readers fond of drawing will find this a good picture to make a copy of.



JOHNNY'S VELOCIPEDE.

"Hurry out of the way—I am coming
With a whiz and a whirl and a flash,"
And Johnny's velocipede—humming—
Went by with a wonderful dash.

Away down the road he went spinning,
At a very excitable pace,
As if he were certain of winning
The prize in some spirited race.

The squirrels grew wild in their chatter
(They're always afraid of the boys),
The bunnies were asking the matter,
The birdies peeped out at the noise.

A funny old cow in the clover
Looked up with a comical stare,
As poor little Johnny turned over
And landed with feet in the air.

BOY'S ESTIMATE OF HIS MOTHERS WORK.

"My mother gets me up, builds the fire and gets my breakfast and sends me off," said a bright youth. "Then she gets my father up, and gets his breakfast and sends him off. Then she gives the other children their breakfast and sends them to school, and then she and the baby have their breakfast."

"How old is the baby?" asked the reporter

"Oh, she is 'most two, but she can walk and talk as well as any of us"

"Are you well paid?"

"I get $2 a week, and father gets $2 a day."

"How much does you mother get?"

With a bewildered look, the boy said: "Mother? Why, she don't work for anybody."

"I thought you said she worked for all of you?"

"Oh, yes; for us she does. But there ain't any money in it."

WEAVING SUNSHINE.

"You can't guess, mamma, what Grandma Davis said to me this morning, when I carried her the flowers and the basket of apples?" exclaimed little Mary Price, as she came running into the house, her cheeks as red as twin roses.

"I am quite sure, darling," said mamma, "that I cannot; but I hope it was something pleasant."

"Indeed, it was mamma," said Mary. "She said, 'good-morning, dear; you are weaving sunshine' I hardly knew what she meant at first, but I think I do now; and I am going to try and weave sunshine every day."

"Mother," continued Mary, "Don't you remember that beautiful poetry, 'Four Little Sunbeams,' you read to me one day? If those sunbeams could do so much good, I think we all ought to try to be little sunbeams!"

After a few moments' pause a new thought seemed to pop into Mary's little head and she said, "Oh, mamma, I have just thought! When Lizzie Patton was here, she told me that her Sabbath school class was named 'Little Gleaners,' and I know another class called 'Busy Bees' Now next Sabbath I mean to ask our teacher to call our class 'Sunshine Weavers,' and then we will all go on weaving sunshine."

It is a good plan. Sunshine weavers will be kindly remembered long after cross, hateful people have been forgotten.

THE DOMINION LAND ACT.

FULL TEXT OF THE PROPOSED AMENDMENTS.

The following is the full text of the amendments proposed to the Land Act by Sir John A. Macdonald:

The term "*pre-emption entry*" means the entering on the books of a local agent of a preferential claim to acquire by purchase, in connection with a homestead entry, and on becoming entitled to a patent for the homestead, of a quarter of a section of land contiguous to such homestead; and the term "*pre-emption right*" means the right of obtaining a patent for such quarter section on the said conditions on payment of the price fixed by the Governor in Council at the time of entry in the class of lands in which such pre-emption entry is comprised, in respect of land subject to pre-emption entry, such payment being made in the manner and subject to the requirements of the Order in Council fixing the price.

CREATION OF A DOMINION LANDS BOARD.

The Governor in Council may appoint an officer to be styled "the Commissioner of Dominion Lands," and an officer to be styled "the Inpector of Dominion Lands Agencies," and such officers shall respectively have the powers not inconsistent with the provisions of this Act, and perform the duties that may be from time to time conferred upon and assigned to them by order of the Governor General in Council; the Governor in Council may also establish a "Dominion Lands Board" to investigate and settle all disputed questions arising out of the duties imposed upon the Commissioner of Dominion Lands and the Inspector of Dominion Lands Agencies, and all matters connected with the administration of the Dominion lands system in Manitoba and the North-West Territories; and such Dominion Lands Boards shall be composed of such persons, and shall have such powers and authority, not inconsistent with this Act, and shall perform such duties as shall from time to time be prescribed by order of the Governor in Council.

THE RIGHT OF PRE-EMPTION.

And if, in connection with the homestead entry, the settler has obtained a pre-emption entry in accordance with the provisions of this Act, he shall, on becoming entitled to a patent for his homestead be also entitled to a patent for the land included in such pre-emption entry, on payment of the price fixed in accordance with the provisions of this Act by the Govenor in Council; but such pre-emption right, if not exercised within six months after the settler shall have become entitled to claim a patent under his homestead entry, shall be forfeited.

THE PROTECTION OF LOAN COMPANIES.

If an immigrant to whom an advance has been made, as in this clause provided, and by whom or for whom a homestead entry, or homestead and pre-emption entry, has been obtained, forfeits such entry or entries under the provisions of this Act, the Minister of the Interior may, in his discretion, treat the person by whom such advance was made as if he were the person who had obtained such entry or entries, or as his legal representative, and as if, up to the time of his being so treated, no forfeiture of the entry had taken place; and if, under like circumstances, the immigrant, by or for whom a homestead entry or homestead and pre-emption entry has been obtained, has acquired a right to receive a patent for the land forming the subject for such entry or entries, and does not apply for the issue of the same, the person or persons by whom the advance was made may obtain such patent in the name of the person so entitled to obtain the same, or of his legal representatives, and thereupon the advance made shall be a statutory mortgage on such homestead.

DISCONTINUANCE OF PRE-EMPTIONS.

The privelege of pre-emption, in connection with a homestead entry, may be discontinued by order of the Govenor in Council; such Order in Council shall be published for at least six months in the *Canada Gazette*, and shall come into force and take effect on the expiration of six months from the first publication thereof.

MINING AND MINING LANDS.

It is hereby declared and enacted that no grant from the crown of lands in freehold or for any less estate has operated or will operate as a conveyance of the gold or silver mines therein, unless the same are expressly conveyed in such grant.

PATENTS.

And every patent for land and every lease and license issued under the provisions of this Act shall be prepared in the Department of the Interior and shall be signed by the Minister of the Interior, or his deputy, or by some other person thereunto specially authorized by order of the Govenor General in Council, and when so signed shall be transmitted to the Secretary of State of Canada, by whom, or by the Under Secretary of State, the same shall be countersigned, and the Great Seal of Canada thereto caused to be affixed: Provided that every patent for land shall be signed by the Governor or Deputy Govenor, as hereinbefore provided.

EXAMINING WITNESSES UNDER OATH.

The Dominion Lands Board, Commissioner of Dominion Lands, or Inspector of Dominion Land Agencies, and any person specially authorized to that effect by the Govenor in Council shall have power to summon before him any person by subpœna issued by him, to examine such person under oath and to compel the production of papers and writings before him, and—if any person duly summoned neglect or refuse to appear at the time and place specified in the subpœna upon him legally served, or refuse to give evidence or to produce the papers or writings demanded of him—may by warrant, under their or his hands or hand, cause such persons so neglecting or refusing, to be taken in custody and to be imprisoned in the nearest common gaol, as for contempt of court, for a period not exceeding fourteen days,

EXAMINATION OF SURVEYORS.

Should it be found expedient, local boards of examiners may be established under order-in-council for the Provinces of Manitoba, British Columbia, or the North-West Territories, such boards to consist of not less than three and not more than six members each, and to hold their meetings at such time and place as the Minister of the Interior may, from time to time, direct.

The Surveyor-General shall require every Dominion land or topographical surveyor, in addition to the oath by this Act required to be administered to him on receiving his commission as such, to take and subscribe an affirmation, on the return of his surveys of Dominion lands, that the same have been faithfully and correctly executed according to law and the instructions of the Surveyor-General; and if it is proved on satisfactory evidence before any court of competent jurisdiction that such surveys or any part thereof have not been so executed, the surveyor taking such oath or making such false affirmation shall be deemed guilty of perjury, and shall be punishable accordingly; and thereupon her Majesty's Attorney-General for Canada shall, upon the application of the Surveyor-General, immediately institute a suit upon the bond of such surveyor, and the institution of such suit shall act as a lien on any property owned or held by such surveyor, or his surities, at the time the suit is instituted.

MANITOBA WHEAT ABROAD.

WHAT THE LONDON "STANDARD" SAYS ABOUT IT.

The American consul at Winnipeg has just forwarded to this country four samples of wheat grown in the northern section of the Canadian North-West, which are of more than ordinary interest, for they completely dispose of the belief that has hitherto prevailed in many quarters that in the vast district just mentioned successful wheat growing is practically out of the question. The best specimen of flour is a sample of Scotch Fyfe wheat, from Fort Dunvegan, a post of the Hudson's Bay Company on the Peace River, in lat. 56°, long. 118°, and no less than 1,200 miles North-West of Winnipeg. It was sown on May 1st and harvested on August 20th last year by the officer in charge of the post, Mr. James McDougall, who, it may be mentioned, has never failed with his crops of wheat, barley, oats, and vegetables during the five years he has had charge of the post. The second sample is of spring wheat, variety unknown, grown at Fort Saskatchewan, near Edmonton, some 1,000 miles North-West of Winnipeg. This, though a very good wheat, is not so fine as the first specimen, produced 200 miles further north. The third sample of white Russian wheat from Battleford, in lat. 53°, long. 109°, or 700 miles North-West of Winnipeg; and the fourth is of white Scotch Fyfe, grown on an Indian Government farm near Fort Pelly, 300 miles North-West of Winnipeg. As already intimated the samples vary somewhat in quality, but they all reach a standard of excellence which abundantly shows that the wheat-growing capabilities of the immense area constituting the more northerly section of the Canadian North-West have been greatly under-rated in the past. And it is a fact of no little importance to the Dominion itself, to intending immigrants, and to British agriculturists generally, that the extent of the wheat-producing district in Canada's undeveloped interior should prove, as time goes on, to be so much greater than was at first supposed.—*The Standard, Jan. 31.*

AN INSTANTANEOUS LIGHT.

Such in a word is the unique apparatus on exhibition at the rooms of the Portable Electric Light Co., 22 Water Street, Boston. It occupies the space of only five square inches and weighs but five pounds, and can be carried with ease. The light, or more properly lighter, requires no extra power, wires or connections, and is so constructed that any part can be replaced at small cost. The chemicals are placed in a glass retort; a carbon and zinc apparatus, with a spiral platinum attachment, is then adjusted so as to form a battery, and the light is ready. The pressure on a little knob produces an electric current by which the spiral of platinum is heated to incandescence. The Portable Electric Light Company was recently incorporated, with a capital of $100,000, under the laws of Massachusetts. The usefulness of the apparatus and the low price ($5) will no doubt result in its general adoption. Some of the prominent business men of the State are identified with this enterprise. In addition to its use as a lighter, the apparatus can also be used in connection with a burglar-alarm and galvanic battery.—*Boston Transcript, Dec. 30.*

An Iowa farmer claims to have nearly doubled his crop of winter wheat by means of a thin autum mulch of straw.

RELIABLE BREEDERS.

Cards of four lines or less inserted in this column, and a copy of the RURAL CANADIAN sent for one year, for $5 per annum. Each additional line, or part of a line, $1.50 per annum. Terms: Cash in advance.

WM SMITH, Columbus, Ont., breeder and importer of Clydesdales, Cotswolds and Shorthorns. Choice young stock for sale. Satisfaction guaranteed.

JAMES GRAHAM, Port Perry, Ont., breeder of Durhams, Cotswolds and Berkshires of the most approved blood. Choice young stock for sale.

THOMAS GUY, breeder of Ayrshire Cattle, Leicester and Southdown Sheep and Berkshire Pigs, Sydenham Farm, Oshawa, Ont.

THOMAS IRVING, Logan's Farm, Montreal, breeder of Ayrshire Cattle, Clydesdale Horses, Yorkshire and Berkshire Pigs, and Leicester Sheep.

WM. SHIER, "Clear Spring Farm," Sunderland P. O., Ont., breeder and dealer in Shorthorn Cattle and Shropshire Downs.

EGGS from all varieties of Poultry. Circulars free. Send 10c. for New Book on Poultry. OAKLANE, Dwight, Mass.

1831 THE CULTIVATOR AND 1883 COUNTRY GENTLEMAN

THE BEST OF THE

AGRICULTURAL WEEKLIES.

THE COUNTRY GENTLEMAN is the LEADING JOURNAL of American Agriculture. In contents and practical value, in extent and ability of correspondence, in quality of paper and style of publication, it occupies the FIRST RANK. It is believed to have no superior in either of the three chief divisions of

Farm Crops and Processes,
Horticulture & Fruit-Growing,
Live Stock & Dairying,

while it also includes all minor departments of rural interest, such as the Poultry Yard, Entomology, Bee-Keeping, Greenhouse and Grapery, Veterinary Replies, Farm Questions and Answers, Fireside Reading, Domestic Economy, and a summary of News of the Week. Its MARKET REPORTS are unusually complete, and much attention is paid to the Prospects of the Crops, as throwing light upon one of the most important of all questions—*When to Buy, and When to Sell.* It is liberally Illustrated, and is intended to supply, in a continually increasing degree, and in the best sense of the term, a

LIVE AGRICULTURAL NEWSPAPER.

The Volume of THE COUNTRY GENTLEMAN for 1882 was GREATLY ENLARGED by increasing its size from 16 to 20 pages weekly, but the terms still continue as follow, when paid strictly in advance: ONE COPY, one year $2.50; FOUR COPIES, $10, *and additional copy for the year free to the sender of the Club*, TEN COPIES, $20, *and an additional copy for the year free to the sender of the Club.*

☞SPECIMEN COPIES FREE. Address

LUTHER TUCKER & SON, *Publishers,*
ALBANY, N.Y.

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, *undenominational* 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.

SPECIMEN COPIES forwarded to any address free of charge on application.

C. BLACKETT ROBINSON,
Publisher.
5 Jordan Street, Toronto.

THE KEY TO HEALTH.

BURDOCK BLOOD BITTERS

Unlocks all the clogged avenues of the Bowels, Kidneys and Liver, carrying off gradually without weakening the system, all the impurities and foul humors of the secretions, at the same time Correcting Acidity of the Stomach, curing Biliousness, Dyspepsia, Headaches, Dizziness, Heartburn, Constipation, Dryness of the Skin, Dropsy, Dimness of Vision, Jaundice, Salt Rheum, Erysipelas, Scrofula, Fluttering of the Heart, Nervousness, and General Debility; all these and many other similar Complaints yield to the happy influence of BURDOCK BLOOD BITTERS.

T. MILBURN & CO., Proprietors, Toronto.

ASTONISHING!

Cheapest Music in the World. Full size Large print.

Twenty of the latest and most Popular Songs and Choruses for $1. Six cents each. Mailed free.

161. "Ah! on Account of Eliza," Solomon, 35c. 162. "Angels, Hear the Little Prayer," Wyatt 40c. 163. "Baby's Empty Cradle," Skelly, 40c. 164. "Bob Up Serenely" (From Olivette), Audran, 25c. 165. "Carry Me Back to Old Virginia," Negro, 30c. 166. "Columbia's Noble Men," Turney, 25c. 167. "Darling, Has Your Love Grown Cold?" Plummer, 35c. 168. "Down by the Old Mill Stream," Read, 35c. 169. "Grandmother's Chair," Read, 35c. 170. "Hush, My Darlings, do not Weep," Operti, 40c. Etc., etc., etc.

CLOUGHER BROS., Booksellers,
27 King Street West, Toronto.

SALESMEN

FOR THE

FONTHILL NURSERIES.

LARGEST IN CANADA.

We offer better inducements than any firm in the business.

We can employ **100** first-class canvassers at once to start work on *Sales for Fall, 1883.*

We require men who can devote full time to the work. Active, successful men can earn good salaries, and obtain steady work the whole year round. Good references required.

Apply (sending photo, if possible) to

STONE & WELLINGTON, *Nurserymen,*
TORONTO, ONT.

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 and 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.*

TO MINISTERS.

Marriage Certificates

NEATLY PRINTED ON

FINE PAPER, IN GREEN, GOLD & CARMINE

ALSO

BAPTISMAL REGISTERS,

75 CENTS.

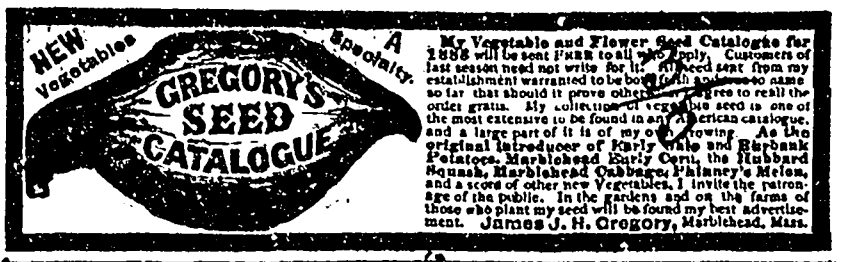
COMMUNION ROLLS, $1.

ETC., ETC., ETC.

MARRIAGE CERTIFICATES

Mailed to any address, postage prepaid, at 10 cents PER DOZEN; or TWENTY-FIVE for $1.00.

C. BLACKETT ROBINSON,
5 Jordan Street, Toronto. *Publisher.*



My Vegetable and Flower Seed Catalogue for 1883 will be sent FREE to all who apply. Customers of last season need not write for it. All need that from my establishment warranted to be both fresh and genuine so far that should it prove otherwise I agree to refill the order gratis. My collection of vegetable seed is one of the most extensive to be found in any American catalogue, and a large part of it is of my own growing. As the original introducer of Early Ohio and Burbank Potatoes, Marblehead Early Corn, the Hubbard Squash, Marblehead Cabbage, Phinney's Melon, and a score of other new Vegetables, I invite the patronage of the public. In the gardens and on the farms of those who plant my seed will be found my best advertisement. James J. H. Gregory, Marblehead, Mass.

HOLIDAY BOOK!

WALKS ABOUT ZION.

BY REV. JOS. ELLIOT.

172 pages. Cloth, 50 cents; in paper, 30 cent

Mailed to any address, free of postage, on receipt of price.

"Among good books for devotional or practical religious use we may mention with commendation 'Walks About Zion,' a series of brief interesting and practical addresses on religious topics."—*New York Independent.*

"Mr. Elliot is the master of a crisp and pure style His reasoning is clearly expressed. He is a most impressive expounder of the Word of God."—*Presbyterian Record.*

"These addresses are brief, pointed, eminently practical. Mr. Elliot is well known in this community as an accomplished expounder of the Word of God, and with the gift of saying much in little, much meaning, few words. This is the characteristic of these addresses which we most cordially commend to the thoughtful reader. We confess to be reminded by these brief and terse discourses of our dear old favourite, 'John Foster.'—*Presbyterian (Halifax) Witness.*

Usual discount to the trade.

C. BLACKETT ROBINSON,
5 Jordan Street, Toronto. Publisher.

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.

A lecture by Rev. Prof. McLaren, Price 10 cents. "The more extended circulation which will thus be given to it is not greater than it deserves."—*Canada Presbyterian.*

"The Catholicity of the Presbyterian Church."

By Rev. Prof. Campbell, M.A. Price 10 cents.

"Contains passages of great eloquence, and proves its author to be a master in Ecclesiastical History."—*Canada Presbyterian.*

"Doctrines of the Plymouth Brethren."

By Rev. Prof. Croskery, 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 Inspiration of Scripture."

"Professor McLaren has done well to accede 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. H 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 Wilkie.*

"Clear in thought, correct in expression, and cogent in argument and appeal."—*Halifax Chronicle.*

"The Perpetuity of the Reign of Christ."

The last sermon preached by the late Rev. Alex. Topp, D.D. Price 10 cents.

Mailed to any address post free, on receipt of price.

C. BLACKETT ROBINSON,
5 Jordan Street, 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 week by week, thus keeping the file complete. Address,

OFFICE OF THE PRESBYTERIAN.
5 Jordan Street, Toronto.

PRESBYTERIAN Normal Class Teacher,

OR A

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

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.

JUST PUBLISHED.

44 pp. Price 10 Cents.

DOCTRINES OF THE

PLYMOUTH BRETHREN,

By Rev. Professor Croskery, 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 receip 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, $3 per 100.

C. BLACKETT ROBINSON,
Jordan Street Toronto. Publisher.

THE STORY.

OF THE BIBLE is a simple Version of the main portions of the Bible, written in a style that can be easily read and understood by young & old. The

AUTHOR'S NEW EDITION!

Contains 704 Pages, 276 Illust's, Beautiful Colored Plates, Maps and Steel Engraving. 90,000 copies of this Book in various editions, have been sold. Published only by [illegible] FOSTER, 119 S. Seventh St., Philadelphia, Pa.

CUT THIS OUT

[illegible] Engravings, with TEN Orders, and you'll receive by mail, a Gold Band of Goods, that will bring you in more money in One Month than anything else in America. Absolutely Sure. M. Young, 113 Greenwich St., New York.

Webster's Unabridged Quarto

118,000 Words, 3,000 Engravings, Sheep, etc.

"A LIBRARY IN ITSELF."

An ever present and reliable school master to the whole family.—*N. Y. Herald.*

G. & C. MERRIAM & CO., Pub'rs, Springfield, Mass.