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THE RURAL CANADIAN.

AND FARM JOURNAL. With which is Incorporated THE CANADIAN FARMER & GRANGE RECORD

Vol. VIII, No. 6.
Vol. IV, No. 6—New Series.

Toronto, June, 1885.

\$1.00 per annum, in advance.

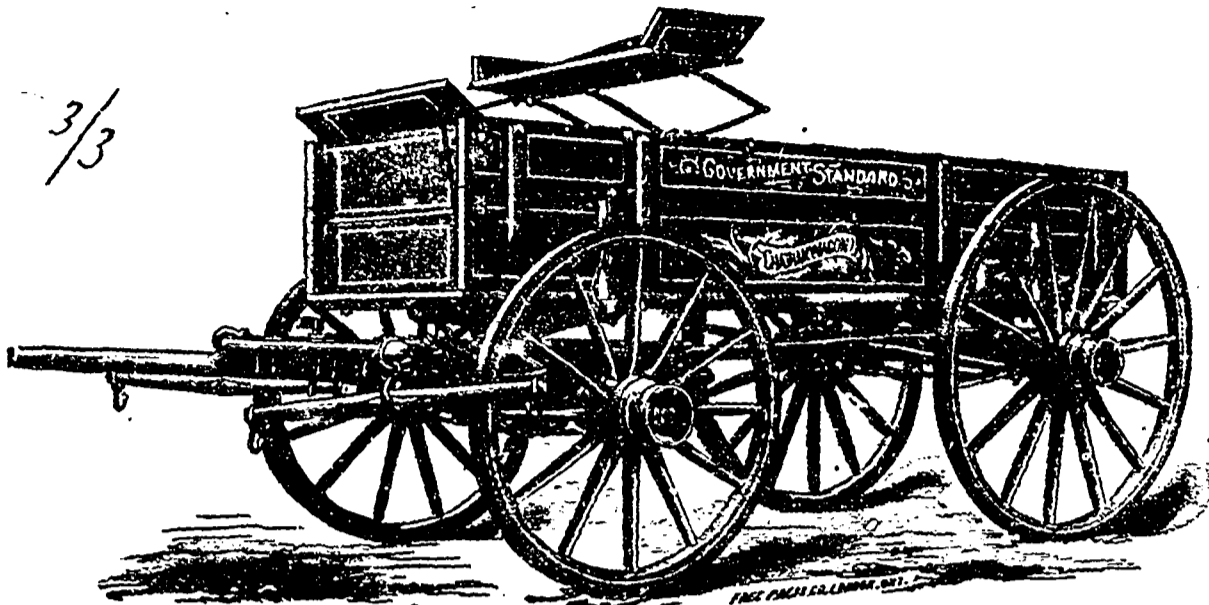


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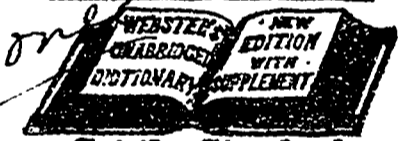
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Rural Canadian and Farm Journal,

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Vol. VIII., No. 6.
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RURAL NOTES.

DRYNESS, with a free circulation of air and a full exposure to the sun, are the material things to be attended to in choosing a residence. One of the primal causes of consumption is a residence on or near a damp soil.

MANURE does most good when thoroughly mixed with the soil, for then it acts as an absorbent of moisture and its richness is more generally distributed. The usual way of ploughing it under causes half of it to be lost, and the top-dressing method is not much better.

THE way to get a gloss on shirt bosoms and collars is to mix a little spermaceti with the starch, use a flat-iron slightly rounded at the edges, and press on the linen with great force. The chief secret is what is vulgarly known as "elbow grease," and that means hard work to the laundress.

THE so-called American exhibition of 1886 in London appears to be a money-making scheme of one or two speculating characters who understand the art of advertising and who have succeeded in beguiling a number of respectable men into lending the use of their names. The chances are that it will do the United States far more harm than good in the opinion of Europeans.

IN England the farmers pay annual rentals per acre larger than the price of some farms in this country. They live only by keeping the land in the highest state of cultivation. If English farmers can afford such a system, there is no reason why our farmers, who own their lands, should not make their farms pay a handsome profit every year.

NO one appreciates the many points required in a good farm horse until he tries to buy one to use. He will find scarcely one that is not defective in some respect, and before he finds the right one will be obliged to pay dearly for him. A farmer who has a horse that is reasonably satisfactory should hesitate long before selling. The horse will be more difficult to replace than he now supposes.

AMERICAN farmers are decreasing their flocks of sheep in consequence of the low price of wool. We do not think that Canadian farmers should in this matter follow their example. The fact is that for a number of years sheep farming for the wool product has not been a very profitable business in our country, but sheep farming for mutton is another industry altogether, and it will pay to keep at it.

A LARGE area of peas is likely to be planted in the Province this year. The bug did very little harm to last year's crop, and farmers are hopeful that it has disappeared for good. It will be a piece of rare good fortune to our farmers, should this prove to be the case, for there are few crops grown that pay better than peas when the bug lets them alone. We would not be too sanguine of the bug's departure, however, last year may only have been a bad season for him, and he may come up smiling again this season.

THIS is an opportune time for giving a reminder to farmers who would this year grow a crop of clover for seed. The general prevalence of the midge renders it almost impossible to get a seed crop if a hay crop be first taken off the ground. The only safe way is to pasture the clover fields until about the middle of this month; then turn the cattle off and let the seed crop grow. It will be far enough advanced for safety before the second brood of the midge is ready to attack it.

A FARMER who kept some hogs in a close, damp, dark pen, and others in a pen open to fresh air and sunlight, noticed that he lost one or more of the former yearly, but none of the latter. A *post mortem* examination showed that death was caused by consumption. The conditions were changed and no more hogs died, thus showing that even a hog cannot live in health if forced to breathe damp, impure, and stagnant air in a dark pen. How much greater the risk with cattle and horses. Fresh air and light are essentials to animal life.

DR. TAYLOR, of the Washington Department of Agriculture, has been making some interesting discoveries in the structure of butter globules. From their form and motion he can determine if the butter be fresh or stale, genuine or bogus. This is interesting from the scientist's point of view; but the ordinary consumer of butter can't have a microscope or a polarizer always at hand when making a purchase of a few pounds of butter, and we are not sure that these fine instruments would be of much value to more than one housekeeper out of a hundred thousand any way. The old test of the tongue is the one that must of use can apply most efficiently, and it answers the purpose very well.

THE past winter has been hard on bee-life, and a great many colonies are said to have been lost. It is a difficult matter to know just what to do with bees in our winters. It does not answer to keep them too warm, and there is a risk of losing them by exposure in one cold night. Last winter there were many nights and days in which the mercury fell below zero, and it would seem to have been one of the seasons when prudence would have dictated the giving of extra care to the bees. But then it is so easy to be wise after the event. The bee farmer is growing in importance with us, and it may be hoped that the Beekeepers' Association will undertake to study the best mode of treating bees in relation to our own climate. It is obvious that a good deal remains to be known on the subject.

THE butter factory at the Model Farm has this year been placed in charge of Professor Barré, late of Montreal. Professor Barré has given a good deal of study to the subject of butter making, and he has the reputation of being well up in the theory and practice of it. He spent a considerable time in Germany and Denmark, studying the systems practised in those countries, and doubtless, also, he has a good knowledge of the creamery system, with which he has to do in the position which he has been called upon to fill. If in addition to his duties at the Model Farm Creamery he will attend the meetings of Farmers'

Institutes in different parts of the country, he may render our farmers very valuable service in communicating to them information of a scientific and practical character on a subject of large importance to them.

THE Commissioner of Agriculture has justly a good opinion of the utility of Farmers' Institutes, and he is taking steps to procure the establishment of one for every electoral district of the Province. At the last session of the Legislature he obtained a vote authorizing him to make a grant of \$25 to every Institute that may be organized, on condition of an equal grant being made by the council of the county in which the electoral district is situated, and subject to certain regulations approved by him. These regulations require: 1. That an Institute shall be composed of not less than 50 members, each paying an annual fee of 25 cents; 2. That a majority of the board of management shall be practical farmers; and 3. That at least two meetings of each Institute shall be held annually in different parts of the district. County councils are invited to take steps for making the Government grant at their June sessions.

THE loss of many cattle by starvation in some of the northern counties of the Province during the past winter, and notably in the County of Bruce, will be a matter of surprise to many. And what is hardly less surprising is the fact that while hay was finding eager buyers in the northern townships of Huron and in Bruce, Grey and Simcoe at \$18 to \$20 per ton, farmers in Kent, Elgin and Norfolk could not dispose of their surplus at \$5 to \$8 per ton. In the one district there was a state of famine caused by a local drought last summer, and in the other there was over-abundance as the result of two very heavy crops in successive years. But another of the curious things about the matter seems to be that the abundance of the south was unknown to the farmers of the north, and the scarcity in the north was unknown to the farmers of the south. Some valuable service in such a matter as this might have been rendered by a mid-winter bulletin of the Bureau of Industries.

NEVER such a late season as this one! Never for thirty years! Never for forty years! Never in the memory of the oldest inhabitant! And of course every farmer who is behind hand with his work, or whose seed is ungerminated in the ground, is in a state of semi-despair. We are getting used to that story now, more or less. Last spring was cold and late, so was the spring of 1883, so also was the spring of 1882. Yet the spring crops in all three years were remarkably good, and in two of them the fall wheat harvests were among the best on record. In 1883 the fall wheat was a failure, but that was not due to a late spring, and if an early autumn frost nipped some of the late fields of spring grain it was a fatality of which the proverbial oldest inhabitant could not readily recall a parallel. The fact is—and it is almost a proverbial fact too—that low temperature and copious rainfall in April and the first ten or twelve days of May is one of the conditions of an abundant harvest. We shall be surprised indeed if the coming harvest in Ontario is not an abundant one.

FARM AND FIELD.

WALKS AND TALKS AMONG THE FARMERS.—NO. XIII.

I AM obliged to own as the result of my observations that farmers generally are a "stiff sot" class of people, instinctively averse to innovations. It is not easy to convince them that a particular course of action will be an improvement, and even when convinced of this, they are apt to doubt if it will "pay." So, I was well pleased the other day on calling at a certain farm to find that a suggestion of mine had been adopted with the most satisfactory results. It was in regard to a cistern. A large barn with extensive roof capacity had been built. It was a bank-barn, and I pointed out what an advantage a capacious cistern would be, and how easily it could be so constructed as to supply the entire basement with water. The plan was adopted, and after a winter's trial of it, my friend was enthusiastic over its merits. A drinking tub had been placed in the cattle stable, and another outside in the shed, the latter being protected from frost. At these daily, and several times a day, the cattle had all winter quenched their thirst. They had never thriven so well, or been taken care of with so little trouble, as during the past long, severe winter.

I DO maintain, Professor Brown to the contrary notwithstanding, that an ample water supply, and plenty of good dry fodder, is far ahead of turnip feeding. The chief advantage of a turnip diet is that cattle get an abundance of moisture, little and often, which is the true way of satisfying their thirst. Even in summer, when there is a running stream flowing through the field, they drink small draughts of water many times during the day, and if this is their wont when on green feed, how much more do they need free access to water in winter when on dry forage? There is no getting round the fact that turnips are ninety per cent. water, and it is cheaper to supply the water from a cistern, spring, or creek, than it is to raise a bulb which is really only a cup full of water, the cup furnishing ten per cent. of food. Let us grow clover for that ten per cent., and make cisterns or utilize springs to furnish the ninety per cent. of water. The clover will keep up the fertility of the land, and it is far easier to handle a ton of clover than it is to manipulate several tons of water and turnip fibre.

THERE is a question of humanity involved, as well as one of labour saving and profit. Cattle that are only watered once in twenty four hours must suffer much from the pangs of thirst. When driven, as is often the case, once a day to a pond, creek, or stream, they suffer from exposure to cold, and are compelled to drink water at an icy temperature. How often I have pitied the poor creatures that I have seen during the past winter, trying to drink at a hole in the ice, shivering and shaking in every limb in the many-degrees below zero weather, of which we had so much. This matter of water supply must receive more and better attention from farmers. In many cases it would require but little trouble and expense to utilize a spring, and make it feed a reservoir in the stable or shed, at which cattle could drink with not much loss of time on the part of an attendant and with no exposure or suffering to themselves. Where no spring is available, recourse can be had to a cistern, the cost of which need not be very great. If we are allowed stock to the best advantage, drink as well as fodder must be provided. The care of stock in winter is laborious enough when every facility is obtained; why should we add to it by the

want of such facilities? It is in the interest of both man and beast that this matter should not be neglected.

ANOTHER lesson on drainage has come to us with the tardy spring, if spring it can be called, which we have had this year. Winter and summer have been strangely mixed. Talk of winter lingering in the lap of spring! There has hardly been a spring at all. Our first spell of warm weather brought our mercury up to seventy degrees in the shade, and the second brought it up to eighty, with intervals of keen, sharp frost. With a blazing summer sun over head, there was cold mud under foot. In what sloughs teams have had to work on many farms, and what a nasty job seeding has been! The soil has been harrowed up into cannon balls and bullets, and the grain has had to find a seed-bed among them as best it could. On low-lying lands there are extensive marshes and water stretches at the date of this writing, May 16. With proper drainage all this would have been obviated. We have had scarcely any rain, and the water-logging of the soil has resulted from the melting of snow, and the thawing of ice. How quickly all the superfluous moisture would have run off, with the help of ditches and drains. There are vast areas of land that can only be put into late crops, where there might have been reasonably early seeding with adequate drainage. It is not merely heavy land that needs this betterment. Soils reputed light, and even hill-sides, are apt to be springy, and when thawed ice and snow are added to the natural supply of water, the land is over-charged with moisture, only to be got rid of by artificial means. The undrained farm is at the mercy of the season, while the drained farm is independent of circumstances, and ready to work when the time comes.

NO sooner are the sheep turned out to grass than the newspapers begin to talk of dog ravages. I have read a great many paragraphs detailing havoc and loss in valuable flocks, thus early in the grazing season, and we have all summer before us with the same peril staring us in the face. What is the use of goading farmers into keeping more sheep when there is this formidable obstacle in the way? Only the other day I read an article in one of our agricultural papers reflecting severely on farmers for keeping so few sheep. It stated that if the whole country were put on a mutton diet, the sheep would be all eaten up in a month. Very likely, but sheep will only multiply on condition of the dogs being diminished in number. I wage no war against useful, well-trained dogs. A good dog is man's faithful friend; but nine-tenths of the curs that prowl around the country are nuisances and pests. They are a heavy tax on the resources of the country. I saw a calculation some time ago showing that the dogs of the United States cost more than the clergy of the great republic, and it would be a sorry thing if the clergy were no more beneficial than the canines! Why do not farmers rise up *en masse* and demand a more stringent dog law? With ample power in their hands to correct this evil, it is worse than folly tamely to submit to such a formidable hindrance to sheep husbandry. The foot of the sheep brings fertility, but we cannot have the foot of the sheep because of the murderous mouth of the dog. By hook or by crook, the dogs should be decimated until only an elect few remain, and those such as demonstrate by their usefulness to man their right to live. The poodle folly among city ladies is far exceeded by the cur folly of the other sex. Poodles are useless, but harmless. The prowling country dog is both useless and mischievous. In too many cases he is a wolf in

a dog's hide, and the sooner he is treated like a wolf the better it will be for agriculture, one of whose most important branches is crippled by these wild beasts of prey. "BEWARE OF DOGS."

W. F. C.

PERMANENT PASTURES.

A correspondent in the last RURAL CANADIAN made some very appropriate suggestions in reference to this all-important subject—suggestions which it would be well for some of our Canadian farmers to test the value of, viz.: the substitution upon their hay and pasture lands of a larger variety of grasses for the old time mixture of timothy and clover. That this latter combination has been a valuable one has been sufficiently demonstrated by the fact that it has been almost the only one availed of both here and in Europe for the last hundred years at least, and may be always ordinarily depended upon for valuable, if not "permanent" results. But that any combination can be relied upon to secure the desirable condition of a "permanent pasture," is just where the mistake is made. There is no such thing possible as permanent pasture save such as Nature herself provides, to be depastured only under such conditions as are also provided by her. Our extensive prairie lands are Nature's permanent pastures for sustentation of the immense herds of cattle which, numerous as they are, only crop the herbage afforded by them once, or perhaps twice, in a decade—the expanse occupied by these natural grasses being so illimitable that the herbage over enormous areas or tracts of country has seldom been depastured at all, but performs all its functions of growth, decay, deposition of seed, and reproduction undisturbed by either man or beast. But from the artificial production of grasses there can result no such thing as a "permanent pasture," all the conditions being opposed to such a result. In the first place, the grasses are not "to the manor born"—are not natives of the soil—and do not always take kindly to it, except under such conditions as are sufficiently stimulating and encouraging, secondly, they are cut down before their natural functions have been completed, and leave no seed behind them for the reproduction of their kind, thirdly, all attempts made by nature for recovery of the *status quo ante* are rudely nipped in the bud by the varied herds and flocks which the exigencies of the farmer compel him to place upon the aftermath. How it is possible then, under these circumstances, to look for permanency is something which it is impossible for us to conceive. To our mind it makes little difference what the peculiar character, variety, or combination of seeds may be—whether the old fashioned timothy and clover, or the meadow fescue, blue grass, sweet vernal, etc.,—all alike must fail in the production of a permanent pasture where the conditions essentially calculated for a successful cultivation of it are so ingeniously and studiously eliminated from our agricultural practice. If then, we cannot afford or permit ourselves to have permanent pasturages let us see what is the best thing to do to make them as permanent as possible:

Let us set out with the fixed conclusion that we cannot have everything because we want it, and without taking the slightest means or labour to secure it. If we expect our fields and meadows to produce herbage for the sustentation of our cattle through the winter, we cannot expect them to fulfil that requirement and add to it the other one of supplying them also with herbage during a portion of the summer, and that *permanently*. If the seeds which we plant are not permitted to reproduce themselves and to find conditions under which to develop their future growth upon the land whence they spring, all that we have

any right to expect is that such vitality as may have escaped the edge of the scythe or the subsequent depasturing will assert itself so long as it has the power to do so—a period which is limited by our correspondent to “three years, the average length of time which a meadow lasts in Ontario.”

Let any farmer who has the means and leisure to undertake the work, observe carefully the effect upon his pasture land of the conditions to which it is ordinarily subjected, and, if he is not a very stupid man, he will at once take a lesson from the book of Nature and experience from her practice. If he persists in withdrawing from his land the seed necessary for clothing it with perpetual verdure, and the food necessary to give that verdure a healthy and vigorous constitution sufficient to carry it over unfavourable conditions of weather and temperature, he compels Nature to accept his conditions and to do the best she can with them. Absence of fresh seed and sheer poverty of food will induce her, after a year or two, to discover or produce for herself other convenient substitutes adapted to the strength and character of the soil, and to offer him a crop of ox-eyed daisies. If the hint is not taken her disposition may become soured, and with it the soil, so that within another year or so, all she has to offer may be a crop of sorrel. If utter exhaustion is forced upon her, she finally offers him a luxurious couch of moss, quietly suggesting the idea that, having failed in all useful effort, he had better lie down and die.

There are two ways, and two ways only, of securing and maintaining a permanent pasturage, and they are so self-evident that “he who runs may read” them. They are not only within the means of every farmer, but they actually constitute—or should constitute—his most active and effective work. In a subsequent article we shall explain their character, and how best to render either or both of them effective, having regard to the purposes to which their products are to be applied.

GREEN MANURING AND ITS EFFECTS.

The name of “green manuring” has been commonly applied to the system of growing a crop for the purpose of ploughing it into the land as a manure before it has lost its verdant state. This method of farming may at first appear very much like giving back to the land only that which has been taken out of it, but there are many advantages which accrue from this practice. In the first place the green crop draws its plant food from all directions in the soil, and if it be a hardy crop, will probably gather food from depths to which other more delicate and surface loving plants never penetrate. From this cause new plant food is rendered serviceable which was previously out of reach. Again, from the fact that this food has already been assimilated or taken up by the previous green crop, it is ready for the new crop in a more complete and serviceable form. It is to the new crop like what partly digested food would be to the stomach of some delicate animal, in that it requires less work for its full digestion. Not only is this the case, but as the green manure becomes decomposed in the soil, the plant food is presented by degrees in a gradual manner, to be again taken up by the new crop. It is probable, too, that, during the decay of this green manure in the soil, acids are formed whose solvent powers tend to render the available supply of plant food greater. The chief value, however, of a green crop is the fact that it gathers from the atmosphere large quantities of organic matter which, together with the inorganic matter derived from the soil, is again returned to the land. This is a distinct addition of new matter, capable of exerting very marked influence upon the pro-

ductiveness of the farm, for in this way it is enriched by an increase of valuable nitrogenous and carbonaceous material. Prof. Tanner says. “The growth of clover root is one of the most general means of showing how greatly soils are improved by the presence of vegetable matter. It matters not whether it be upon light lands or heavy soils, or those of intermediate character, in each and every case we find the condition and the fertilizing powers of such soils improved and increased. It is a very important lesson which may thus be learned, and it should certainly lead us to value more highly the beneficial results arising from green manuring.” The clover crop is probably as well adapted for green manuring in the west as any other crop, for the reason that it affords a double profit, in that it may be cut or pastured for a year or two before turning under. In this interim it is not only making a growth above ground, but also below the surface. This depends somewhat on the management of the crop, for if it be grazed by cattle or sheep the roots suffer a proportionate delay, but when allowed to grow for cutting the roots grow in like proportion to the part above ground. We have thus shown the benefits to be derived from green manuring with clover, but would add before closing that there is no better or more speedy method of renewing worn-out land than this. Mammoth clover should be used in conjunction with the more usual varieties, as it is a strong, rapid grower, with a great amount of leaf and vigorous, deep-reaching roots.

The Drovers' Journal says: “It is maintained by many competent authorities that peas are a more profitable feed for stock than corn.”

Working oxen should have a separate feeding place and a due and regular supply of food. There should be no opportunity for them to interfere with other people, or being interfered with.

The best time to cut Canada thistles is when they are in flower, the root being then in its weakest condition. This cutting, while it of course will not kill them, renders it less difficult to destroy by later cuttings.

Turnips and rutabaga are generally sown broadcast, but by using a pound of seed to the acre in drills eighteen inches apart, cultivating the rows a few times, and thinning to five and six inches in the drill, much larger crops may be raised.

Green posts are not lasting. The best of timber placed in the ground before seasoning will decay in a few years. Sap in wood causes decay sooner than rain water, and when green posts are set in the moist earth the sap cannot readily escape.

On sandy soil, ashes are beneficial to all crops and can be applied in any quantity. On heavy soil there is commonly an abundance of inert potash though in old orchards even this is largely exhausted. No mistake can be made in applying ashes to fruit trees.

In building wire fences use more wire. Five strands are much safer than three, and the extra cost is money well spent. Ninety cases of injury in a hundred can be averted by this simple expedient. Put light scantling in place of the top strand, to make the fence visible.

Heavy soils, and those rich in vegetable matter, should receive frequent light dressings of salt. It does not act directly as a fertilizer except in very rare instances, but salt in small doses helps to dissolve and make available other plant food, of which heavy soils usually have an abundance, though not in available condition for use. On land entirely deficient in vegetable matter salt is usually of little benefit.

HOUSEHOLD HINTS.

The fashionable sandwich is made of thin bread and chopped chicken covered all over with thick paste.

Blue, old gold, brown olive, plum or gray are suitable colours for a piano cover, plush, felt or cloth can be used, and if desired an embroidered border can be stamped thereupon.

When the rubber rings used for closing preserve jars become so hard as to be useless, their elasticity may be restored by leaving them for half an hour in two parts of water of ammonia and one of water.

Round glass globes should not be used for aquariums, paper weights, etc., in positions where the sun can shine upon them. They act as “burning glasses,” and have caused many fires. Oval, square, or any shapes but round, are considered safe.

The oftener carpets are shaken, the longer they wear. The dirt that collects under them grinds out the threads. Do not sweep carpets oftener than is necessary. A broom wears them very much. When a carpet is faded, strong salt and water will often restore the brightness of the colour.

The indiscriminate use of tincture of arnica for petty sprains and bruises of horses is scientifically condemned. It has been demonstrated that if kept long in contact with affected surfaces arnica produces heating and blistering, thus aggravating the complaint sought to be cured.—*Cleveland Leader*.

Porcelain fruit-knives are among the novelties. The blades are white and semi-transparent, and the handles are in different colours. These knives are really a revival of an old style. They are beautiful, and possess at least one advantage over silver, inasmuch as they may be kept clean without so much trouble. But it is not advisable to drop them upon the floor.—*Louisville Courier*.

A very complete filling for open cracks in floors may be made by thoroughly soaking newspapers in paste made of one pound of flour, three quarts of water, and a tablespoonful of alum, thoroughly boiled and mixed. Make the final mixture about as thick as putty, and it will harden like papier-mache. This mixture may be used for moulds for various purposes.

The subjoined simple preparation is said to be desirable for cleaning and polishing old furniture: Over a moderate fire put a perfectly clean vessel. Into this drop two ounces of white or yellow wax. When melted, add four ounces of pure turpentine, then stir until cool, when it is ready for use. The mixture brings out the original colour of the wood, adding a lustre equal to that of varnish.

Everybody has a cure for sore throat, but simple remedies seem to be most effectual. Salt and water is used by many as a gargle, but a little honey and alum dissolved in sage tea is better. An application of cloths wrung out of hot water and applied to the neck, changing as often as they begin to cool, has the most potency for removing inflammation of anything we ever tried. It should be kept up for a number of hours; during the evening is usually the most convenient time for applying this remedy.—*Boston Globe*.

To stew chicken with peas, cut up a young chicken and lay the pieces in a saucepan. Add to it a little pepper, salt and a very small onion, a small piece of butter, a bunch of parsley and a half pint of gravy; cover the pan closely and set it where it will simmer slowly. When nearly done, add to the chicken a can of French peas, and let them stew until done. When quite done, thicken the gravy with butter and flour rubbed together. Serve the peas around the chicken on the platter.—*The Caterer*.

HORSES AND CATTLE.

BREEDING FOR SEX.

A correspondent of the *National Live Stock Journal* says:—

Six years ago, I had, as now, a large breeding herd of Jersey cattle, and, as the most profit was derived from heifer calves, I naturally read with interest everything that came to my notice upon the subject of controlling sex, having, as an additional cause to stimulate me to action, a large preponderance of bull calves constantly arriving. My attention was called to the Stuyvesant theory, which claims that service on alternate heats will produce alternate sex. I was using at the time two breeding bulls. One of them had sired more heifer calves, by a small number (up to that time),

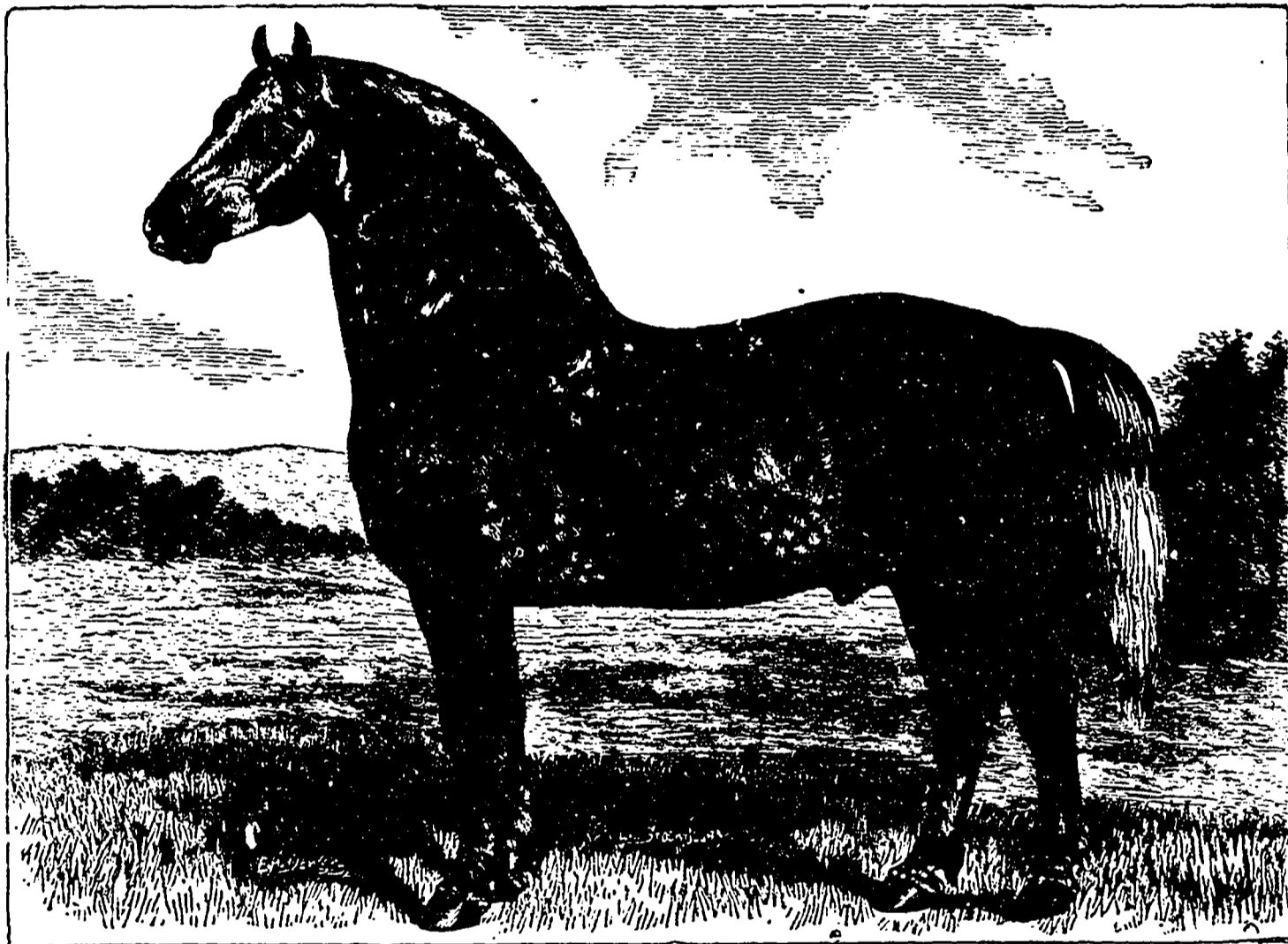
the first, after dropping the calf, made a record of the particular heat in which impregnation occurred. Occasionally, conception would take place by the first service, but by far the greater number of cases would extend over two or three heats and sometimes more. I have a table of forty-nine of these cases, resulting in twenty-nine bulls and twenty heifers; in other words, of forty-nine cows that were treated by the Stuyvesant theory to produce heifer calves, considerably more than 50 per cent. bore bulls, thus entirely exploding the idea that sex can be controlled by this sort of management.

I have tried other plans to gain this end, among them giving service in the beginning of the heat, and during the latter part. Both of these theories have their advocates, and men will declare that, in their own experience, if a cow is served the

THE DRAUGHT HORSE.

Capt. W. H. Jordan, at the meeting of the Iowa Stock Breeder's Association, had this to say of draught horses:

"The draught horse is the average farmer's best chance for an investment. It is for the reason that he is as staple in the market as wheat or bacon; he is a production upon which money can be realized at any period of his life, from the hour of his birth till the last day of his service. He is always in demand and will ever be while business is done. His record is not of minutes and seconds, but it is most emphatically that of prosperity. He will thrive and grow on coarse, cheap food, and mature for his work earlier in life than any other race of horses. The sphere of his labour is the very basis of personal pros-



PLUIOSE 3755 (683).

[Recorded with Pedigree in the Percheron Stud Books of France and America.]

Dark gray; 15 $\frac{3}{4}$ hands; weight, 1,690 lbs.; foaled 1882; imported 1884; got by Narbonne 1334 (777), he by Brilliant 1899 (756), he by Coco II. (714); dam Paquerette by Superior 454 (730), he by Favori I. (711). A compact yet stylish and very active horse, full of vigour and energy. In general form his harmony of proportion is rarely equalled, being unusually good in almost every point, as an extra good walker, and trots a very rapid gait for such a heavy horse. Property of Savage & Farnum, Island Home Stock Farm, Grosse Isle, Wayne County, Michigan.

than bulls; the other, just the reverse, in about the same proportion.

The trial was begun in the spring of 1878, with thirty breeding cows, all having had calves previous to that time. A very careful record of service was kept during the whole year, and if, in any case, a cow had dropped a heifer calf, and I desired her impregnated for another, she was not served the first succeeding heat, but was held over to the second. This course, it was maintained, would invariably produce the end sought. All of the thirty cows were thus treated, and were successfully put in calf by the two bulls named.

The result was that twenty-three of the calves were bulls and only seven were heifers. This satisfied me very conclusively that no reliance could be placed upon this theory. However, I did not entirely abandon the experiment, but took no special care to hold the cow back for the proper heat before serving; but, beginning with

first hour of heat, and impregnation takes place from that service, the invariable result is a heifer calf; others, equally enthusiastic, say the conception must be accomplished during the latter stages of the heat to insure heifer calves.

Many breeders claim that the sex of the calf is determined by the condition of the animals at the time of impregnation—if the male is sluggish and dull, and the cow the reverse with desires high and full of excitement, a bull calf will be the issue. Adherents of this theory aim to produce the proper state of things by a stimulating diet to the bull and adverse course with the cow.

But by a careful course of testing, and closely watching all these various theories and many more, with about the same measure of success as stated, I have arrived at the conclusion that Nature has reserved for herself the entire control of this matter, and that any attempt to interfere with it, or to produce certain results at will, can end in nothing but disappointment.

perity and national greatness. He may be possessed of scars and blemishes, and an uncouth form that would render valueless his brother of the road or track, without lessening his value a dollar, so that he can tip the scales well up in the teens. He can be grown to an age of usefulness as cheaply as a steer, and find a ready market at three times his price; and last but not least, he will not be likely to corrupt the morals of his owner by tempting him to take to the road or track, or to spend his evenings far from the home of his family or his business."

The Arabs are said to feed horses from the ground in order to maintain the curve in the neck. Without doubt the Arabian horses are among the finest in the world, and if feeding on or near the ground is one reason for their superiority, it is an argument for low mangers that should not be overlooked.

SULPHUR FOR HEALTH AND TO KILL LICE.

Persons who are constantly swallowing drugs are rarely in good health. If people would select wholesome food, take a moderate amount of exercise by doing some kind of useful work, breathe pure air, and live temperately, generally, there would be little call for medicine of any kind. Most of our domestic animals are better surrounded by the conditions necessary to good health, than are many of their owners and owners' families, consequently there is less disease and premature death among animals than among civilized (?) human beings. Yet our animals are not uniformly free from disease, and when they are ailing, special treatment must be given them. Lice are a very frequent cause of the poor condition of cattle and poultry, and whenever discovered, should be destroyed by some means.

Mr. A. B. Allen, writing to the *New York Tribune*, on the use of sulphur for killing lice, and promoting the general health of animals, says: Sulphur is a good tonic, and although my horses and cattle are well fed, and kept in fine condition, I give each one a heaping tablespoonful of sulphur once a week, as long as kept in stable on dry food. When in pasture they don't need it. If this is done Wednesday evening, then I give the same quantity of pure wood ashes in their meal mess every Saturday evening. I also give the same to my poultry. A tablespoonful is well mixed in a gallon of water, and the meal then stirred up evenly in it. This operates as a preventive of lice. When wanted to kill lice on cattle, a heaping tablespoonful is well mixed with about four quarts of bran, shorts, corn or any other meal.

It may be fed every day, provided it does not scour the cattle, and if so, then not so often. The effect of the sulphur must be watched. If the lice and nits are abundant, as the sulphur acts slowly, it will be better to take crude petroleum, dip a horse brush in it, and then brush the hair very lightly until the oil touches the skin. If no crude petroleum is at hand, then take kerosene, and mix it half-and-half with melted lard, and brush that in. The lard is necessary to reduce the strength of the kerosene, for if applied pure it would be too strong for the cattle. Some mix sulphur with lard to apply for lice, but this is apt to make little sores on the skin, especially in cold weather. If cattle are kept in good flesh, lice rarely attack them; if they get on calves they retard their growth badly, and otherwise injure them.

THE PULSE IN DOMESTIC ANIMALS.

The healthy pulse in the adult horse is from 36 to 40 beats in the minute, in the ox from 45 to 50, in the sheep from 70 to 80, and in the pig about the same as the sheep. In young animals the pulsations are faster, and in old ones they are slower than in those in their prime. In very young ones they are, of course, very much faster. The healthy pulsations may also vary in the same class of animals according to breed, temperament, or even individual peculiarities, and a very slight cause, such as a sharp word or a "start" may increase the beats in an excitable horse 10 or 13 beats per minute. The frequency of the pulsations may be taken anywhere that an artery can be felt, by light pressure on it with the finger, or the beatings of the heart may be felt on the left side, just back of the elbow. But were our knowledge as to the state of the pulse to be limited merely to the frequency of the beats, it would be small indeed. The tone, volume and force have also to be taken into consideration. A very frequent pulse often indicates great weakness. The pulse in the horse, ox, and in most

of the lower animals is most conveniently felt at the angle of the under jaw, where the submaxillary artery coming from the inside, passes under the lower edge of the jaw-bone, and mounts up towards the face, just in front of the large, flat muscle that closes the jaws. The frequency of the pulsations varies so much in different animals according to the disease, its stage, its severity, etc., that a detailed statement as to its beats would be too long and would be of little service to the reader. We will merely say that few horses will survive long with a continuous pulse of 100. A continuous pulse of 60 to 65 in abdominal disease, lingering colic, etc., would indicate danger, and a pulse of 60 to 70 is not uncommon in favourable cases of influenza, or other lingering or debilitating diseases of the organs of respiration of the horse.—*National Live Stock Journal*.

CAUSE AND CURE OF SHYING.

Shying or dodging horses are made so generally by impaired eyesight, which gives them an imperfect view of objects, and they do not recognize ordinary things and are frightened by them; whereas, if they could see well they would not shy. Poor eyesight may be caused by over-heating, over-drawing and by wolf-teeth. For the first there should be cooling diet, such as grass, carrots, and bran mash, together with laxative medicine, glauber salts being the best, fed daily with the mash, one-fourth pound, until the animal gives evidence by the brightness of its coat and general appearance that its blood has become purified and the fever is out of it. When this condition is reached, the eyesight will be improved and perhaps restored. Over-loading horses is both stupid and wicked, and strains the nerves of the eyes, for which the only remedy is to wash the eyes two or three times daily with a mild extract of witch hazel or some good eye-water. When this straining is severe, nothing will cure it, and the horse usually becomes blind.—*Stock Breeders' Journal*.

HOLSTEINS FOR FAMILY USE.

There can be no doubt, says the *American Cultivator*, that Holsteins, which combine large milk yields with a good proportion of cream and butter, are better adapted for family use than the Jerseys. The latter do not give large yields but what they do give is extremely rich. With a family owning only a single cow, quantity and continuity is quite as important as the quality of the milk yield. With a single cow in most families, the larger share of the milk never goes into butter, especially if the yield is small. For use as milk that from Jersey cows is too rich when not diluted, and not so good when mixed with water as the pure milk from cows giving larger yields.

IS SALT NECESSARY?

Dr. Julius Lehmann says: "Of special importance is salt, not only for the entire process of digestion—since it increases the action of all the organs engaged therein, inducing them to discharge saliva, gastric juice and all other digesting liquids—but also since it serves in the stomach as the material for hydrochloric acid, which is one of the most powerful means of digestion." Again: "The action of salt consists mainly in keeping the various constituents of the blood in a soluble condition, and also to exchange for other salts present therein its own constituents, thus forming certain combinations, which have their particular office to perform in the blood. Moreover, in consequence of its physical character, it introduces into the blood from other parts of the body, the required

amount of water, so that the blood remains in its vessels in an easy, movable condition." The following is from the report of a French government commission on the question of feeding salt to domestic animals: 1. That salt ought to be given to replace the saline parts washed out of the food by boiling, steaming, etc. 2. That it counteracts the ill effects of wet food and meadows to sheep and prevents rot among them. 3. That it increases the flow of saliva and hastens fattening.

Some breeders claim that white Shorthorns feed better than the reds.

It is unwise to kill the heifer calves of finely bred and finest class butter cows.

The *American Dairyman* holds that it is so doubtful whether twins will breed, that it is safest to turn them over to the butcher, instead of the dairy, and that it is a swindle to sell such animals as breeders, without fully notifying the buyer. By this, it is not held that twins do not often breed, but that they so often fail that it is unsafe to base expectations upon them.

Never use a breast strap in place of a collar, whether the horse is worked to a waggon or a buggy. With a good, nicely-fitting collar a horse can draw nearly twice as much, and feel more comfortable than with a breast strap, which often inflicts cruelty upon him, owing to the fact that many persons make no discrimination between the breast strap and collar, expecting the horse to do the same work under all conditions.

It is observed that "there are very few men who meet with the highest success in stock raising, for the simple reason that there are very few who study the nature, habits, and comfort of animals sufficiently to understand their requirements and provide for them. No farmer can expect to succeed in handling stock who does not possess inclination and taste for studying their habits, and is kindly enough inclined to make them comfortable at any expense and trouble."

When cows and horses lose appetite, and refuse food altogether, unless signs of injury or other causes of depression are discernible, they may receive, twice a day, a teaspoonful of the following mixture, which may be given in corn meal: One pound gentian, one pound fenugreek, one ounce sulphur, one ounce copperas, one pound black antimony, 8 ounces resin, and 8 ounces bi-carbonate of soda. The ingredients are cheap, and are found in nearly all condition powders.

An English officer, who has seen service in Egypt, states that the food of the Arabian horse consists of six pounds of barley, which is given at sunset. This custom seems to agree with the animal, and it enables his owner to carry in a bag food enough—sixty pounds—for a ten days' journey across the desert. The stomach of the horse is small, and for this reason it is the custom, in agricultural countries, to give him three meals a day. But in Arabia they make a virtue of necessity. Fast is broken but once in twenty-four hours.

In Holland the calf is taken from the cow immediately after birth. The cow does not see it as a rule. The cows produce their calves in the stable, the calves are taken away, and there is no bellowing or moaning on the part of the cows. There is a very great loss if the cow is allowed to lick her calf and remain with it for a time, for she becomes attached to it, and then it cannot be taken away from the cow without more or less uneasiness, and there is a loss, not only in milk, but in flesh, more, perhaps, in flesh and the condition of the animal.

SHEEP AND SWINE.

FEEDING PIGS FOR FATTENING.

A correspondent of the *Country Gentleman* writes:

An error quite prevalent among farmers and others in feeding and fattening pigs, which often leads to disappointing results, is the notion that the pig thrives best and fattens fastest upon the most concentrated food, and does not require bulk in its food to promote health. All are aware that corn, or corn meal alone, with water, is not a wholesome ration for the ox or horse, but think that the pig is so differently constituted that bulk in food is not essential. A greater error could hardly be conceived. In the natural, wild state the pig, as well as the horse and ox, is accustomed to bulky, less concentrated food, which seems to have been forgotten, and he is piled with concentrated food from weaning age till slaughtered, except in perhaps certain cases where economy or parsimony is studied.

From these exceptional cases lessons ought to have been learned that there is a better way of feeding than giving only the most concentrated food.

I have seen pigs fed, some on only meal with water, and others with meal mixed with other and bulky food, and have invariably found the latter the most healthy and always ready to eat when their food was offered, and no waste occurred. Where the pigs were fed with meal alone and drink, the pigs after a while seemed to become cloyed and ate less heartily, often wasting much of their feed.

Theory indicates, to my mind, that meal fed alone goes into the stomach in the state of dough, so that the gastric juice cannot penetrate the mass to perform its office properly, while the more bulky substance mixed with the meal acts as a divisor, permitting the gastric juice to pass through and digest it rapidly.

Clear meal being so slowly digested, lying so long in the stomach, creates disturbances and fever in the system, while the pigs fed with more bulky food are always healthy, lively and ready for their food. Pigs fed on meal alone are even less evenly thrifty, as they, after eating well for a time, will stop and fast a while.

They apparently recover, and then eat again, but never with the seeming relish of those fed with the more bulky food. This easily accounts for the fact that corn and cob meal are said by some to equal corn meal alone for feeding and fattening purposes.

When we consult the chemist he tells us what analysis decides; but when we compare actual results, we find that there is something that chemistry fails to reveal. We find this in many of our farm operations. Actual experience demonstrates that corn and cob meal is superior in feeding value to whole corn, not that the same weight of each contains the same nutriment, but that there is some factor which lies below the surface, and that factor is explained, I think, in the foregoing.

FEEDING AND CARE OF SHEEP.

The better sheep are cared for, the larger the profit to the owner. The flock master should understand the relative value of grasses, and the varieties of winter feed, and possess a sort of instinctive judgment in matters relating to sheep. Taking into account the various conditions of food, climate, and conformation of country, he will have to select the breeds best adapted to his requirements. Ordinary flocks may be greatly improved by the introduction of a pure-bred ram possessing specially desired characteristics.

Where a good market for either wool or mutton is available the sheep should be such as will best meet the demand.

The habits and instincts of sheep should be as nearly as possible adapted to the character of the range they are to occupy, as the process of acclimatization is often a very costly one. The heavy-framed Cotswolds and the plump Leicesters would not improve on a poor and impoverished soil or under conditions necessitating their carrying their heavy weight of flesh and fleece up the mountain sides. The lighter and nimbler breeds are the best adapted to upland country, while the heavier sorts thrive most on the rich and succulent grasses of the plain.

The original Cotswolds were, however, natives of a somewhat hilly district. Merinos are poor mutton sheep, and are bred mostly for their fine wool. They are thrifty and hardy, and will pick up a living on scanty pastures. The more active breeds of sheep will not endure close confinement in winter without injury. It is well to avoid, as much as possible, the driving of sheep along dusty roads. The dust irritates the skin and causes discomfort.—*American Agriculturist*.

KEEP A FEW PIGS.

There is an old prejudice on the part of some against keeping pigs, under the plea that it does not pay to do so. The claim is not true, but admitting its correctness in some respects, there are several reasons to be presented in their favour. When the pork is raised at home you know what it is. The quality of the food given, freedom from disease, and care of the meat from the moment the hog is slaughtered until it is cured depends upon the owner, and when this is given by the consumer he is able to provide himself with a better article than he can purchase. So far as relates to the actual expense that may be incurred, the outlay is only temporary, for a small sum is stored away in the carcase, which is returned at the end of the year. Leaving out the matter of profit altogether, therefore, the pigs enable their owners to save a great amount of material that would be lost without their assistance, and, even if only the expense is returned, with some it is doubtful if they would be any richer at the end of the year without the pigs than with them but in the latter case they will at least have a quantity of pork on hand.—*Farm and Garden*.

JUDGING WOOL.

Wool is a tell-tale, says the *American Cultivator*. The unevenness of its staple shows where, at different seasons of its growth, the animal bearing it was stunted or thrifty. Many farmers have been annoyed by the criticism of good judges when inspecting their wool. Really, the buyer is not particular enough. An uneven staple is nearly worthless for valuable purposes. When we complain that woollen goods do not wear as they should, the fault may lie farther back than we think. It may be that the false threads in the coat represent deficient feeding by the farmer who in wearing it finds he has made a bad bargain. Ewes with lambs do not give fleeces worth nearly as much per pound as those from sheep not breeding.

It requires patience to take care of a flock of sheep. To turn them out on the bare fields to shift for themselves will not render them profitable. The flock master should be as attentive to his flocks of sheep as their care demands, and when this is done they will amply repay all the outlay bestowed upon them.

There are said to be fifty-two kinds of sheep in the world.

Hampshire Down ewes are said to be remarkable for bringing twins. Sometimes as high as twenty per cent. more are raised than there are ewes; that is, 120 lambs to 100 ewes.

There is no better feed for young pigs, after they have learned to eat, than good threshed oats. If given dry and alone, the pigs will chew at them till they get all the kernels, but they will swallow little or none of the husks.

The pig is no exception to the rule that all domestic animals require salt. The few animals which are fed slops from the house will get some salt in this kind of feed, but not enough, and they do better if a mixture of salt and ashes is left where they can eat as they wish. Many believe that lack of proper salting is one cause of hog cholera where large droves are kept and given grain and water. When men are deprived of salt serious diseases result. In some respects the internal structure of human beings resembles that of the pig.

Tagging sheep is removing the locks of soiled wool around the hinder parts. It should always be done to ewes before they drop their young, as the lambs may otherwise not be able to find the teats. By removing the tags before turning out to green feed some good wool may be saved that would certainly be rendered worthless by soiling so soon as the sheep droppings become watery, as they will on grass. The wool tags are, however, worth more for the manure heap than to sell at rates which wool dealers can now offer. Tagging should not be neglected, as the removal of dirty wool is essential to the comfort of the sheep.

The *Farmers' Journal* puts the advantages of sheep raising in terms following: A farm can be stocked with sheep for less money than with cattle, horses and hogs. Sheep will come nearer utilizing every thing that grows on the farm than any other animal, less labour will be required for getting feed and stock together. The returns will come in sooner and oftener than any other farm-stock, except hogs. Less money is required for sheltering and fencing, and less labour is involved in herding, when outside pasturage is accessible and preferred, and finally a handsome income on the investment can be had without the sale of animals themselves.

The different ways that sheep may be utilized, and the different profits that may be realized from them, make them pre-eminently the stock best suited to the changes constantly taking place in our markets. There is a never-ceasing rotation in the line of profit and favouritism among the different kinds of stock, and at present the sheep interest seems to be down, but the rotation will soon bring sheep on top again. Sheep are valuable because yielding a double profit, the wool and the carcase; and this alone will always make them a favourite with a numerous class of our farmers. And, besides, an increasing year demand in market for good fat early lambs points to another fact in sheep culture which, with care, may be made profitable. Their utility in the farm economy is a consideration of much importance in determining whether they shall retain their position among the farm stock. That they are the best adapted of all stock to assist in renovating a run down farm and increasing the fertility of any land is generally admitted. And in carefully considering them in the different points of profit and utility, all must be convinced that they have a fixed place among farm stock which can be filled by nothing else; and that although they both may and will pass through depressions like the present one, still that place will always be retained.—*Journal of Agriculture*.

THE DAIRY.**BUTTER-MAKING.**

The three fundamental rules for the "gilt-edged butter-maker," are:—Good cows, good food, and eternal vigilance. On these three rules hang all the laws and by-laws of butter-making; and the greatest of these three is *eternal vigilance*. We may take a third-class cow, and with eternal vigilance may make a fair article of butter; while the best cow in the world, fed on the best food to be found, will not produce good butter without it.

Eternal vigilance must watch over the heifer calf from the day it is born until it becomes a cow; must see that it is not over-fed, and that its food is of the right quality; that it is not fed too often, nor fasted too long; that it is handled enough to make it gentle, but not in a way to make it "horny."

When she is a mother, eternal vigilance must be there to see that she is kindly treated,—many a good cow is ruined at her first milking—and all through her journey of life, eternal vigilance must have watch and ward over her; must see that her food is of the best; that her hay is as sweet as dried clover blossoms can be; that no soft, sour mubbins are given her; that her oats and bran are the freshest and sweetest, that her drink is the purest water that the bowels of the earth contain, and that she wanders all day long in summer time, in pastures green, placid, calm, content, with no shotguns firing off near her ears, and no dogs to chase and make her afraid.

When at eventide she comes slowly home, looking as though she would rather be milked than not, and when the milk is strained and set away, eternal vigilance, instead of having a play spell, must do double duty; must have no rest night or day. For now the greatest foe that eternal vigilance has to fight is temperature. I read yesterday that in the Mammoth Cave in Kentucky, the temperature is always 55 degrees, never more, never less, summer and winter it stands just the same, and the thought came to me that if we butter-makers could have a steady temperature like that (only of course it would need to be a lower one), what a paradise it would be. Those fortunate souls who have a natural spring, can have almost the same thing. But there are not enough natural springs to go round. The few lucky ones have them, and the rest of us must manufacture our own temperature; and in my experience the water-tank and deep setting seems to come nearest to the old spring house methods of our young days.—*Mahala B. Chaddock, in Farm and Garden.*

THE COMING DAIRY COW.

On this interesting subject the *Breeders' Journal* offers the following. We hear about the coming man, but we have not heard decisively yet what the coming dairy cow is to be. The dairy has had a large amount of attention paid to it in the last ten years. No equal space of time has seen as much improved dairy blood imported into this country. It has been erroneously thought that nothing was so good as an imported cow; that magic word seemed to cover a multitude of defects. But people in their calmer good sense are not at present running so much after these foreign dames who cannot talk good English, or else have been brought up at the sea shore. In the hurry and scramble for a large infusion of certain lines of blood, in-and-in breeding has been practised without regard to the health or constitution of the progeny. The coming dairy cow will necessarily have a strong and vigorous constitution. In-bred cows will not carry their calves well; every change of weather affects

them. Dampness and cold rains affect the quantity and quality of their milk. Drought and short feed in summer will affect the in-bred ones in the herds first of any, for the reason that they have not stamina and vitality enough to carry them over these temporary strains and hardships. There is no doubt but that "like begets like." A heavy milker of rich milk, bred to a close relation, may produce a great butter cow, but other things just as essential are lost, namely, constitution and vital force. These cannot be dispensed with on any practical farmer or dairyman's place, who is running his place for practical objects and not for fancy.

A profitable herd of cows cannot be kept where abortion has a foothold; it is a leak that slowly and surely eats away the profits. Hundreds of thousands of dollars would be annually saved to farmers and dairymen if no abortion occurred. The coming cow will be short legged; this can be put down as a certain fact. Who ever saw a profitable, thrifty cow perched upon long spindle legs? Some herds look as though they had been bred for trotters. The coming cow will not be a trotter, but an animal bred by a breeder of good common sense.

IMPROVING THE DAIRY.

How to improve the dairy cattle, how to bring them up to a profitable standard with the least expense, says a correspondent, is a problem which many persons are trying to solve. The stock breeders cannot improve the Canadian dairy cattle to any extent. It can only be done by the combined efforts of every farmer in Canada. There are a great many ways by which dairy cattle can be improved, and if all will work together for the same object—to improve—the farmers of Canada can have as good a strain of cattle as the Hollanders or the English.

The most important thing to be done is to get rid of all the poor blue-milk stock, which do not pay for their living, and only keep the best. The great trouble with us farmers is that we are apt to sell the best of everything and keep the poorer quality, but that is because there is always a demand for the better quality of stock while the poor dunghill stock is a drug on the market.

The next important thing to be done toward the improvement of the dairy is to buy a good grade bull calf and raise him up and gradually work up the grade of your cattle.

Another good way is for several farmers to club together and purchase a thoroughbred bull, which can be used between them, and in a few years, by only keeping the best, the neighbourhood will become noted for its choice strain of cattle.

There is some contention about the breed, but for a general purpose cow there is none that will come up to the Holstein, on account of her large frame and excellent beef and milk qualities. The Shorthorns are excellent beef cattle and the Jerseys are great for butter, but it takes them both together to come up to the Holstein.

CREAM SETTING.

The following are the results of investigations made by Professor Ford as to the effects of the ordinary methods of cream setting in England as reported in the *Agricultural Gazette*:

1. Shaking the milk before setting is detrimental to a rapid separation of the cream. Of two samples of milk, one being shaken before set aside, the latter required eight hours to separate seven per cent. of cream, the time required by the other to separate the same quantity being only three hours.

2. Premature cooling of the milk before setting

is more serious in its effect upon a thorough separation than the first mentioned point. When milk conveyed to the creamery in a common vehicle by centrifugal separation gave 100 pounds of butter, a sample of milk of the same quantity and quality conveyed in the same manner, and set in ice water, gave 90.8 pounds while another sample that had been cooled, transported as before, and then set in ice water, gave only 87.9 pounds.

As a general rule, Professor Ford found that the yield of butter grew less the lower the temperature of the milk before setting. When milk set in ice water directly after milking gave 100 pounds, milk that had been previously cooled to 68° gave 95.7 pounds, 64° gave 91 pounds, 48° gave 86.3 pounds. A means of restoring the original qualities of such milk was found in warming the milk to about 104° before setting.

JERSEYS OWNED BY WOMEN.

It is a noticeable feature of the advancement of the Jersey interest that many ladies become deeply interested in the welfare of their husband's herds; in fact, quite a number of herds are registered in the ownership of ladies. The subject affords a wider field of profit than the poultry business, and gratifies a spirit of legitimate speculation that is not unpleasant to the female mind where suitable opportunity occurs for its indulgence.

The dairy, which is an almost inseparable companion to the breeding herd if any considerable number of cows are kept, is a feature of no little importance, and one that, to be successful, requires a peculiar care that is seldom disassociated from a greater degree of intelligence (one may almost say refinement) than is often found among hired help. Where it is conducted on a large scale it necessitates the employment of expert help; but many an owner of Jerseys in a small way has failed to get his butter to suit him until his wife became sufficiently interested to study the subject that was once her grandmother's pride and special accomplishment, and take the matter in hand.—*H. C., in Harper's Magazine.*

Some cows' teats are so small that the grasping process is thoroughly impracticable, says a writer. We advise the milking with a wet teat, as you can milk more easily, and it is certainly more in harmony with nature. Kindness and gentleness with your cows are things that are greatly conducive to a liberal flow of milk.

An exchange gives the following bit of advice: *Have regular hours for milking.* We always obtain the greatest yield by milking while the cows quietly eat their meals in winter, and while they chew the cud, or lick a little salt in a dark shed in summer. A good milk-pail is a four or six gallon can, having a movable cover with a hole in one side of it. Set a five inch strainer funnel in the hole and milk into it.

This is the difference between Jersey and Alderney cows: *The former have been kept pure bred on the Channel island of that name for a long time. No foreign cattle have been permitted to be imported into Jersey for over a hundred years. In the Island of Alderney, importations of other cattle have ever been permitted. The Alderneys have not been kept pure, but are made up mainly of a cross of the Jerseys and the Guernseys on their original stock. They are not so fine as either of those two latter breeds have become, and are more uneven in their make-up. The term Alderney was applied by mistake by the English to the Jersey cows when they first began to import them, many years ago, but it is not used now, each breed being distinctly classed by itself.*

POULTRY AND PETS.

FOOD FOR POULTRY.

Mr. Editor,—In reference to feeding poultry, I beg to offer the following remarks. Of course, with many farmers the feeding of poultry is a matter of very little importance, as the fowls have a pretty free run and pick up the waste and often pick and destroy a good deal that would not be wasted. However, where poultry are kept for profit by men and women of small means, and where they have to buy the greater part of the food consumed by the poultry, it is of importance that the grain should be fed in such a way that the keeper may reap profitable returns from the same. I have often heard the remark that wheat is the best. Then, again, you will hear it said buckwheat is the very best, and others say they have had splendid results from feeding corn. Now, Mr. Editor, my experience is this, that a mixture of grain such as oats, wheat, peas, corn, and barley is far better than any one kind of grain alone. I have stopped my hens laying almost entirely by changing from wheat to oats in three or four days. Then, it has a bad effect to change again to wheat after several days or a week of feeding oats; and I have often heard people say, how do you get your hens to lay in the winter? Oh, I say, I feed everything. They say, how do you like small wheat? I say, yes it is good. Well, they say, I have fed wheat, then oats, and tried barley, and everything, and can't get an egg. Yes, I say, you fed one kind of grain just long enough to get your fowls ready to lay, and then by changing the food you stopped them. No doubt of that whatever.

Now, for the best results in winter, I feed boiled vegetables, such as potatoes, carrots, and turnips, mixed with wheat, shorts, or bran, and milk, adding a little red-pepper and salt, and "Royal Poultry Food." Mix stiff and feed quite warm in the morning. At three o'clock feed all the mixed grain that they will eat. Give the fowls plenty of fresh water to drink, and twice a week I feed cut vegetables chopped fine. I generally use a mixture of apples, potatoes, onions, and cabbage. Chop and mix all together and feed just before giving the grain. I feed fresh meat during the winter. Bees' heads, liver and lites are good when cooked. Now, I think I hear some one say, oh, if one has to go to so much trouble to get eggs in the winter, I don't want to be the one; but when you consider that the only time that eggs pay is in the winter, it behooves one to try and produce them. Just fancy forty cents to fifty cents per dozen in the winter and ten cents to thirteen cents in the summer. Then, again, to get hens to lay well in the winter, it will require that they are young stock, well cared for during the fall, keeping each breed separated, or, if you have a mixed flock of general variety, see that you have no cockerels running with them. Keep the young cockerels by themselves until you wish to mate for breeding. One will find this of great advantage in more ways than one, and persons who keep a good many varieties should keep them separated, for the small breeds will stand a good deal more corn or grain feeding than the Asiatic stock. A friend of mine here who keeps nothing but S. S. Hamburgs, told me the other day that they had laid an average of nine eggs a day since the 1st of March. He has only ten hens, and five of them are five years old this spring, and they have never offered to set during that time, and the principal food they get is Indian corn, all they can eat. This same treatment would soon make Brahmas and Cochins so fat that they would not lay an egg.

Now, Mr. Editor, I am afraid that I am en-

croaching on too much valuable space in your paper; but if my letter is too long you can put in part of it and continue it in the next issue, as I wish to say a little more about poultry. Almost every one has some fancy, and thinks some particular breed the best and, as a natural consequence, keeps that variety. I have been breeding poultry for a number of years, and am satisfied that nature has adopted different breeds for the wise purpose of trying to please all kinds of circumstances. For instance, if a person wants to keep a few hens just for the purpose of supplying his own table with eggs, and has only a moderate space for them to run, probably there is no breed better suited for his purpose than S. S. Hamburgs. They are persistent layers even for a number of years. But if a person wants to raise some young stock he must call upon some other breed to do the hatching, or get an incubator, which I would not advise unless he intends to make a business of raising poultry. The Black Spanish are much the same about laying and not setting, but will require a much warmer place in winter or you will get no eggs. The same may be said of Brown and White Leghorns. Houdans are splendid layers and very hardy, but are not all handsome, and are very shy and quarrelsome. My fancy runs in the direction of the large breeds, but more particularly for Buff Cochins. Some people say they are for ever wanting to set. Well, then, I say set them; give them good eggs and they will only set twenty-one days and will do it so nicely that any real lover of poultry will be proud of them, for they will take care of the chicks very nicely and, if properly fed, will commence to lay again in three weeks, and go on laying until the moulting season. Light Brahmas are also a splendid variety. They are probably the best winter layers of any breed, although they do not mature so early as the Buff Cochins.

I have been very much amused this spring on account of the great demand for setting hens in this neighbourhood. One breeder here has purchased twenty-five; another, an amateur, has purchased a large number, and there is a constant demand for setting hens at good prices, from fifty cents to \$1 each. Therefore, the setting hen should not be despised, and I think it would not be out of place here to state that the old and barbarous treatment of ducking them should not be allowed, as it is certainly very cruel and of very little use.

G. F. PERKINS.

Ingersoll, May 11th, 1885.

(To be continued.)

HOW TO FEED BEST.

It may seem a very simple matter to feed fowls, but no part of the management of the flocks is so difficult. True, all one has to do is to give them their feed, but it depends upon how this is done, for thereon depends the matter of procuring eggs. Every one who keeps poultry should make himself familiar with the different breeds, for unless this is done no correct method of feeding can be adopted. It is unnecessary to state that fowls should have a variety of food, should be fed regularly, be within easy access of pure, fresh water, and be provided with lime, charcoal, green food, meat, and good quarters, for that is an undisputed fact, but the breeder must remember that he has two obstacles to contend with, which are overfeeding and underfeeding.

Let us consider overfeeding. The large breeds, such as the Cochins, Brahmas, Plymouth Rocks and Langshans, grow for quite a long period before reaching maturity. While in the growing condition, they do not take on fat very readily; but as soon as they arrive at the stage which is the turning point between the chick and the adult, it is a critical period with the breeder.

They will then begin to fatten, and if they become too fat, cannot nor will not lay. If they begin to lay before they get very fat, the service of egg production calls for nutrition, and the food is diverted in that direction, consequently the young hen will not fatten so easily after she begins to lay as though she had not commenced, but should she become over fat without laying it is a puzzling matter to the breeder how to reduce her in flesh again without injury. An over fat fowl is a nuisance, for should it lay at all, the eggs rarely hatch, and if a few chicks come from them they will be weak and hard to raise. The hen herself becomes diseased, soon breaks down, and is an eyesore to the whole flock. The cocks are not exempt. When too fat they are unserviceable, impotent and sterile, and might as well be cooped up, for all they are worth. In fact they really do damage by injuring the hens, and in no manner are they profitable except for market.

Underfeeding is another evil, not that we mean to infer that the fowls are usually not supplied with a sufficiency of food, such as it is, but fowls may be underfed while revelling apparently in the midst of plenty. Exclusively, corn is a terrible infliction to a flock, and actual physical suffering is the consequence when certain elements are lacking in the necessary requirements of the system when it is forced to produce a particular article from materials not adapted to the purposes intended. No kind of machinery is capable of weaving silk goods from hemp, nor can steam engines be built of cotton. A hen cannot produce eggs if lime is lacking, nor can she supply the growth of her own body when her product takes possession of that which should support herself. Nature gives her what we call an appetite, which is only an indication of that which she requires, and we are all familiar with the habits of most fowls, and notice that when we change the food they accept the new variety readily. Feeding is the art of supplying the proper food, but not so much in quantity as quality. If we watch the fowls they will easily tell us what they desire. If you are feeding corn throw down a few handfuls of oats. If they greedily take the oats and leave the corn, it indicates that they require something else. Try grass, meat, ground bone, pounded oyster shells, cooked vegetables, all of which they will accept or reject according to their requirements. Feed regularly, and never feed more than they will eat up clean. They will walk away from the food as soon as they have enough. Never leave it on the ground. Feed early and late, and let them get hungry, that is, have regular intervals between meals. The practice of keeping feed by them all the time promotes an excess of fat. Allow as much exercise as possible. Throw hay on the floor, or in the yard. Place in it a few handfuls of some kind of grain, that they do not receive often, and let them hunt and scratch for it. Feed grown; chicks liberally, avoiding too much corn. Oats ground, and fed warm in the morning, is one of the best feeds that can be given. Always give whole grains at night. In summer give no corn except once or twice a week. Vegetables and grass are much better for them. Laying hens must have meat or milk. Eggs cannot be produced without nitrogenous material in some shape. Bones are almost absolutely essential. Above all, however, give pure, clear, fresh drinking water.

Where the grass plot is very limited, the fowls should only have access to it for a short time each day.

Nests upon the ground floor, or placed down quite low, are much handier and safer for the large breeds.



GARDEN AND ORCHARD.

FOR THE RURAL CANADIAN.

WALKS IN THE GARDEN.—VI.

The present season will surely be remembered as the latest on record. Snow to a depth of two or three inches in the middle of May is almost unheard of. Everything is belated, and vegetation of all kinds fully a month behind time. Growth will have to be very rapid to catch up before the season is ended.

CELERY that has been picked out should be well watered, as it needs plenty of moisture at all stages of its growth. The middle of July is soon enough to put it in the ground. An occasional shearing of the leaves will tend to make the plants more stalky, which is desirable. There is no need whatever to make deep trenches—the labour of which keeps a good many from cultivating this most delicious of vegetables. If the ground is rich it will not be necessary to manure it specially, but if not a trench a few inches deep should be spaded or ploughed out, and filled with thoroughly rotted dung, or leaf mould is still better. Mix this with the soil, rake level and put the plants six inches deep, having copiously watered them beforehand. Take the plants out with a trowel, and they will not need shading for an hour, but go on growing without interruption. Cultivate thoroughly, stirring the soil once a week at least, and keep down the weeds. This is much easier with level culture than in trenches. If there is time and inclination to water, celery will take all it can get; but a little is worse than none.

This is true of almost everything. A slight sprinkling with a watering pot does no good whatever, except to cake the ground and bring the roots to the surface. Liquid manure is a very valuable fertilizer. To have it, sink a barrel not too far from the pump and put in a spadeful or two of dung, filling up with water, and replenishing when necessary. A dose of this once a week will work wonders, and will pay. The surface of the ground around a plant should never be allowed to get caked, but should be broken with a hoe or other implement.

I DON'T know any mulch for trees and bushes of all kinds so effectual and so handy as coal ashes. Besides keeping the soil moist it prevents weeds growing round the stems of the bushes; and helps a good deal to keep down vermin, as the hard gritty substance is not favourable to them. About a couple of inches is enough, and when dug in in the fall, as it should be, lightens the soil materially.

CURRENT and gooseberry bushes should be closely watched now and till the end of the season, to keep down the worms, with pyrethrum, kerosene emulsion, or hellebore, whichever is deemed best. It is no reason because the fruit is off that the worms should be allowed to eat the leaves. They are necessary for healthy growth and fruit next year.

At the risk of repetition, I would say keep the cultivator going, whether the wheel hoe, or Dutch hoe, or whatever implement is preferred. Killing weeds is not the only object, but the soil kept open and porous, and growth is more rapid. There is not a flower or vegetable that does not respond to generous cultivation.

I HAVE just heard of a new antidote for cabbage worms, which is a dose of ice water occasionally. It comes on the word of Professor Kuley, a well-known agricultural authority, over the lines. I have not tried it yet, but it seems reasonable, and

is about as easy as any way of disposing of the green vermin.

I WAS a good deal bothered about labels for trees and shrubs, the writing on which would get obliterated and cause a good deal of annoyance, until I tried writing with a common lead pencil on a strip of zinc. It does not rust, and the writing will last for ever. The zinc is wound round a limb of the tree, and does not cut like the wire of an ordinary label.

ABOUT flowers; there are so many novelties coming out every year that it would take a man with a long purse and the patience of Job to keep up with them. I have tested a good many the last few years, but found a great many to be merely old things with new names, or no improvement on old varieties. One exception is *Hyacinth caudicans*, a spring bulb, which throws up a strong stem several feet in height, surmounted by a cluster of white hyacinth bulbs, which last a long time. It blooms in July and August, and when planted in the centre of a clump of *Gladiolus* is very effective. Another new acquisition is *Nicotiana affinis*, which has only been offered by seedsmen for a year or two. It is a tobacco, but does not much resemble the ordinary kinds, and the seed can be started in a hotbed and transplanted when danger from frost is over. It grows very rapidly, and the flowers are of a pearly white, with a perfume never to be forgotten. It is an incessant bloomer when it once starts, and if brought into the house will keep it up indefinitely. The flowers are very numerous and open in the evening, closing during the day; but the same flowers open several times. A good many people do not know that the tubers of *Mirabilis jalapa*, commonly known as Marvel of Peru or Four o'Clock, can be taken up in the fall and kept like dahlias, flowering all the better the second season. This is an old-fashioned, common flower, but very pretty. *Salvia patens*, which furnishes the most beautiful blue known to florists, can be treated in the same way, being much stronger the second year. Balsams make fine pot plants. Put in a large pot, five or six inches, they can be brought into the house when frost is expected in the fall, and will bloom for a long time.

THE Dutch bulbs are now in full bloom, and are invaluable to any one who likes a show of colour. The little white snowdrops, which bloom as soon as the snow goes off, are followed by the bright hued crocuses, and they in turn by scillas, hyacinths, narcissi, and tulips, filling up the time till the bedding plants are in bloom. True, the dead leaves are somewhat unsightly; but by planting some of the quick growing annuals—nasturtiums, mignonette, portulacca, etc.—in their immediate neighbourhood, the space is soon covered.

A BEE garden is a treat to the bees, the flowers being covered from morning till night with the busy little fellows. It gives them the first work of the season, and, judging from the way they pitch in, they seem to enjoy it.

This is about the time to plant pansies for fall blooming. The seed may be sown in a box, and the plants set out when large enough—end of July or August. They will be gay till the snow comes. A shady location is the best for pansies. They are never seen to perfection when the sun beats full on them.

TO KILL USELESS SHRUBBERY.

If you have a shrub, herbaceous plant, or tree of any kind, that is difficult to kill, but which you wish to be rid of with the least amount of trouble

and expense, do not attempt to kill it by cutting off at the roots at this season of the year, but let it alone until in full leaf, or until near the time when it ceases growing for the year. July, or early in August, will be a suitable time for most trees and shrubs, while herbaceous plants may be cut off close to the surface when they are in full bloom. Cut at that time, the sprouts which start, if they start at all, will be very feeble, and a second cutting will often end all trouble. Even Canada thistles may be killed by mowing when in blossom, and by cutting the feeble shoots which start later. Foresters have long known that woodland renews itself far better when the old growth is cut in winter, or before the leaves start in spring, than when cut in midsummer during active growth and full leaf.

SOME TREES AND SHRUBS TO BE AVOIDED.

Several of the most troublesome weeds of our fields and grounds were originally introduced as ornamental plants of the garden. Some of these have not yet travelled a great distance, but others are widely disseminated. The Toad-flax, *Linaria vulgaris*, known in some localities as Butter and Eggs, and in others as Ranstead Weed, is a marked example of the latter class. The prevalence of this, in the older States at least, and the difficulty of exterminating it when once established, illustrate a danger that is always impending. Not only may herbaceous plants prove troublesome, but trees and shrubs may be, like fire, excellent servants, but cruel masters. We frequently pass an estate upon which a former proprietor planted a large number of the White or Silver Poplar, often called Abele (*Populus alba*), a tree well known for its persistent suckering. Large areas in the grounds referred to, are filled with the suckers, forming dense thickets, and the soil is unfitted for any other purpose, unless reclaimed at a heavy expense. This is a useful tree in paved streets, but should never be planted in or near cultivated grounds.—*American Agriculturist for June.*

MANAGEMENT OF ROSES.

The following good practical directions for the care of roses, more particularly the hybrid perpetuals, were given by J. H. Bourne, in his address before the Massachusetts Horticultural Society:

The ground for roses should be thoroughly drained and rendered as porous as possible, and fertilized. In clay soils the use of sand, lime, soot, burnt earth and loose, light, vegetable matter, such as leaf mould, will alter the texture and improve the quality. At the time of planting, strong fertilizers are not required, and should not be given until the bushes have become established; they then like rich soil, which should be made light for the delicate rooting kinds, and more tenacious for the robust and hardy, and it would be reasonable that the classes and varieties differing in their nature should have more than one soil, if all are to receive that which is the most suitable. A renewal of the surface soil with old pasture loam every two or three years will supply important elements unattainable by any other method. We should avoid the application of more fertilizers in a soluble state than the plants can consume. It is well that the earth should be filled with stimulants in different stages of decomposition, that the plant may in all conditions of growth have plenty of food. When the plant is growing, and especially when flowering, weak liquid manure may be applied. Bone and potash act favourably early in the spring. A frequent sprinkling of water adds health to the foliage and prevents injury by insects. The earth should be wet only when dry and then thoroughly.

THE FOUR CARDINAL POINTS OF HEALTH.

THE STOMACH, THE BOWELS, THE LIVER, AND THE BLOOD.

HOW TO REGULATE THEIR WRONG ACTION INTO RIGHT ACTION WHEN IMPAIRED BY DISEASE.

THE STOMACH.

ARE YOU TROUBLED WITH DYSPEPSIA? How to Know It and How to Cure It.

If you have a variable appetite, A faint gnawing feeling at the pit of the stomach, Unsatisfied hunger at times, A loathing of food at other times, Rising and souring of food, Wind in the stomach and distress around the heart, A painful load at the pit of the stomach, Choking sensations in the throat, Headache and dullness of spirits, Constipated bowels with alternate diarrhoea, Are you gloomy and miserable? Then you are a confirmed dyspeptic.

THE BOWELS.

A NEGLECTED EVIL! And Its Dire Results.

A regular action of the bowels is an absolute requirement for general health, and the least irregularity should never be neglected, for there is no more prolific source of disease than neglected constipation, by which the worn out and refined accumulations are retained to poison the system with their foul gases and irritating effects.

THE LIVER.

STARTLING SIGNS!

READER, when you have an exhausted, tired feeling, Especially in the spring, Depression of spirits, Great irregularity of mind, Foul coated tongue, Bad tasting mouth, Disagreeable breath, Frequent sick headaches, Tired aching shoulders, Irregular bowels, Variable appetite, Sallow complexion and yellow eyes, Poor circulation of blood, Dryness of the skin, Flashes and eruptions, Faintness and heart-futtering, Blurred vision and dizziness, Weary days and restless nights.

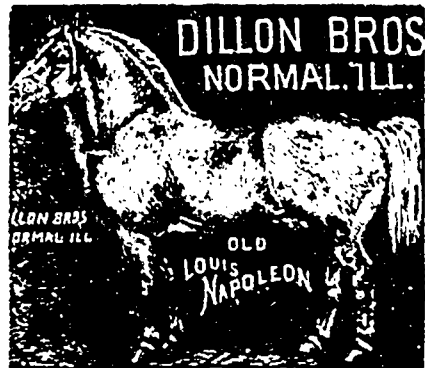
THE BLOOD.

A QUESTION OF VITAL IMPORTANCE.

Is Your Blood Pure?

If not, and you have any obstruction to its free circulation, there can be no perfect health. Put with pure blood freely circulating you have a good insurance policy against disease. The blood is made pure by many causes: Bad air, impure food, poor water, want of exercise, irregular constipation, hereditary taint or poison, etc.

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IMPORTERS AND BREEDERS OF NORMAN HORSES

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The Rural Canadian.

TORONTO, JUNE, 1885.

THE QUESTION OF FARM LABOUR.

From a table of the wages of farm labour published in the May Report of the Bureau of Industries it appears that the rate is perceptibly lower this year than it was last year. The average for the Province last year was \$17.70 per month for the working season, including board. This year it is \$16.42, being a reduction of \$1.28 per month. A good deal of complaint has been made by farmers of the high rate of wages paid during the last few years, as it was regarded by them to be much too high relatively to the prices of farm products. No doubt, the migration of so many farmers' sons to the North-West had much to do with keeping up the rate of wages, and possibly the arrest of that movement last year may have contributed to the fall in wages that is now apparent. But the introduction of the self-binder has we think been the main factor. The report states that last year about 3,000 of these implements were sold to the farmers of Ontario, and that each of these set free the labour of four men in the harvest field. It could not be otherwise than that the use of so many implements—doing the work of 12,000 men with the old style of reaper—should seriously disturb the labour market. But if that was the case last year with the setting in operation of 3,000 self binders, how much more is it likely to be the case this year with the prospective operation of 8,000 additional ones? We may be sure that there are very few localities in which harvest hands can get anything like the old rate of \$2 or \$2.50 per day. But if the use of the self-binder will lead farmers to give employment to a larger number of men the year round, the change will be a boon both to farmers and farm labourers.

DAIRY FARMING.

Our farmers are every year turning their attention more and more to the dairy industry. In some districts cheese-making takes the lead; in others butter-making is in favour; while in others the raw product of milk goes directly to the consumer. We need not inquire which of these different branches of the industry is the more profitable to the farmer. It is enough to say that a good deal depends upon circumstances, and upon the care taken to restore to the soil a full measure of compensation for the riches taken out of it. The profits on the sale of cheese and milk, even when every pound of product and by-product are sold off the land, may be sufficient to enable the farmer to maintain the standard of fertility, and even to improve upon it. The important consideration is that he should do so, and so long as he does it no one can find fault with him for selecting his own way. It is not a matter of any consequence whether he feed the land with its own fat or with the fat that he buys with money. It is all a matter of the best margin of profits. But what we wish to say is that if the dairy industry is to be made profitable close attention must be paid to the methods of improving the quantity and the quality of milk, and the quantity and

quality with special reference to the branch of the industry in which the farmer is engaged. A good deal depends on the breed of the cows, for it is well known that while some breeds yield milk that is rich in the components of cheese, other breeds are equally famous for yielding milk that is rich in the components of butter. But having the most suitable cows, it is a matter of the first consideration that they should get the proper quality of food to keep up the flow of milk. For this object it can hardly be doubted that rich pastures hold the first place. Grass that is sweet and green and juicy is unsurpassed as an article of diet for the dairy cow, and if care be taken to provide a supply of clean and wholesome water, and a lick of salt now and then, the milk product can hardly be improved upon in regard to either quality or quantity. But the right kind of pasture cannot be provided without attention to the land, and among the essentials of attention are proper drainage and liberal manuring. If the land is at all low and water likely to stand upon it, it is not possible to obtain the highest results from it, nor even that the cows can enjoy a perfect condition of health, and it is unnecessary to say that land cannot be grazed upon from year to year without impoverishment unless fertilizers are applied to it. Thorough drainage and generous manuring of pasture lands will give as sure and quick returns as the same treatment of lands cultivated for grain or root crops. But of course milch cows cannot be grazed the year round in our climate, and other food must be provided to take its place. What kind of food will give the best results? That is a question not easy to answer, but among men who have had a large experience in dairying no article is regarded with more favour than cabbage. Farmers cannot raise an acre of any product on their farm which will give as much milk between hay and grass as an acre of cabbage. Not only will it keep up and increase the flow of milk, but it will add to the weight of the cow to a remarkable extent. But cabbage must not be fed at haphazard. The rotten leaves of it must not be fed; nothing but the clean heads such as a family would eat. Then another point is that they should be fed immediately after milking, and that every leaf not consumed at the time of feeding should be swept out of the way. Let this be done and there is little danger that the milk of cows feeding upon it will be in the slightest degree tainted. Along with cabbage, however, it is desirable that the cows should be fed good hay and a small allowance of ground oats. When the cabbage supply is used up the farmer may consider himself fortunate whose root cellar is well stored with carrots. There is no root that will make milk of such consistency, flavour and colour as the carrot, and especially for making butter of the best quality in the winter season carrot fodder may be regarded as indispensable. We regard it as far superior to mangolds or turnips, and while the quantity per acre is quite as large as of either of these roots, the carrot is a surer crop than either turnips or mangolds. It is surer because it goes deeper into the soil, and is less liable to be affected by drought. Of course there are many other kinds of fodder, but we are convinced that for dairy farming of the highest order no better results can be obtained than by good pasture feeding in the grazing season, and a liberal diet of cabbage, carrots, hay and ground oats throughout the late fall and winter.

We are glad to know that THE RURAL CANADIAN is meeting with a cordial reception from the old subscribers of the *Canadian Farmer and Grange Record*. As the months pass away we shall give them so unexceptionable a "bill of fare," that they will scarcely ever miss their former favourite.

THE AGRICULTURAL COLLEGE.

The tenth annual report of the Agricultural College at Guelph is a document of 238 pages, and deals at length with the work done in the college and on the farm. From the part which deals with the College proper we learn that the staff consists of six professors, and that the number of students in attendance during the past year was 188. Of the latter, 128 are from Ontario, thirty from other provinces of the Dominion, twenty-six from England, and twelve from other countries. Thirty counties of the Province were represented by students last year, of which Simcoe heads the list with sixteen; Perth comes next with thirteen, and Wellington is third with ten. The subjects of study are as follow: (1) Agriculture and Live Stock; (2) Natural Science; (3) Veterinary Science; (4) English Literature and Political Economy; and (5) Mathematics and Book-Keeping. There is in addition a special Live Stock and Veterinary Class, which was organized in 1882, for the benefit of young men who do not wish to take the regular course, but who spend the half of each day in handling and looking after cattle, sheep, pigs and horses, and the other half in hearing lectures and studying books which treat of these animals in health and disease. Out of a class of fifteen which entered in 1883, seven were gazetted as having passed at the Easter examination last year in all the subjects; for the spring term the number who took this course was twenty-six. At the midsummer examinations eleven students obtained diplomas after completing the regular course of study and apprenticeship, as compared with nine for the previous year. The second part of the report gives the results of a series of elaborate experiments by the Professor of Chemistry, showing the effect of various fertilizers on the soil, the composition of the rain water falling on the experimental plots, the temperature of different soils exposed to similar conditions at various depths, etc. The third part treats of veterinary study at the College and on the Farm, and the state of health of animals on the Farm, and the fourth is a brief report of the physician of the institution. The fifth is the main feature of the report, being the record of results collected and observations made during the year by Professor Brown, the manager and experimental superintendent of the Farm. We cannot undertake to present even the briefest summary of Professor Brown's report, and indeed no mere summary would do it justice. This must be read and studied in detail, and we would advise all farmers who take an interest in high-class farming to procure a copy of the report and go through it at their leisure. Doubtless the Department of Agriculture in this city will furnish copies on application. It is a report that will be found valuable for reference, and nowadays every successful farmer is more or less a student. One extract from it we are tempted to quote. Professor Brown says: "I think one of the best evidences of better 'thinking' among our farmers is system of rotation in cropping; it is now common, and telling prominently in our increased annual produce. The better winter feeding of live stock is also but a recent and now a leading feature of our practice. But the live stock interest otherwise is well worth a thought. That Canada, and Ontario in particular, is peculiarly adapted for this purpose is well known. Its variety of physical conditions, the invigorating and purifying character of its winters, and the ability to produce the kinds of crops so essential to animal life at all seasons, have already marked us as the breeding ground for all others connected by land. Consequently, the demand upon Ontario for the best pure-bred farm stock has already outrun all bounds. At the same time our neighbours are wise enough to

take advantage of our admirable quarantine—climatic as well as in transit—ere taking home what they purchase from other countries. Canada can produce pure-bred animals at almost half the British cost, because it has the cheaper crops and the fewer risks of death by freedom from diseases, and it can feed and finish beef and mutton at less than half the cost of the same things, in stall and on pasture."

The sixth and concluding part is the report of the foreman of the Horticultural Department. Referring to a clump of five hundred black walnut trees planted five feet apart in the spring of 1880, he says: "The plants, two years from seed, may be said to have done very well, especially the last two years; they have made a luxuriant and healthy growth, but quite bushy and many branched, not so tall, straight, and clean as desirable for young trees intended for useful timbers. I now feel convinced that had the nuts been planted at the same date instead of the young plants, and getting the same care in cultivation, that cleaner and taller specimen trees would now be the result, and in my opinion this will hold good in all nut-bearing trees, if not in all hardwood trees having a large tap-root, the cutting of which in transplanting checks the leaders and encourages or allows the lateral or side shoots to get the ascendancy, hence a broad irregular top with short stem or trunk, comparatively worthless for their timber, although very desirable for ornamental purposes, as single specimens in the lawn."

CROP REPORTS.

Below we give a summary of the report of the Bureau of Industries, based on information furnished by over six hundred correspondents under date of 25th May:

The drought at seed time last fall made it difficult to get wheat-land into a good state of tilth, especially in clayey soil, and growth at first was slow and uneven; but with a steady temperature and warm showers throughout part of September and the whole of October the young plants pushed forward rapidly, and the reports made by correspondents of the Bureau at the beginning of November showed that the crop had then a most promising appearance in every part of the Province. Snow fell early and laid late, and the winter was one of the longest, steadiest and coldest on record; yet the reports received now show that the wheat was almost in as good condition on the first of April as on the first of November. Fortunately the rainfall during the winter was very slight, so that the snow did not pack on the ground as it often does, and excepting in hollows and under heavy banks alongside the fences no smothering effects were to be seen. But on the knolls and high ridges the snow was swept off, and in such situations the wheat was either killed outright or very seriously injured. The greatest apparent damage, however, has been caused by the hard frosts and northwest winds of April and the low temperature of the first ten days of May; but the plants remain firmly rooted in all soils, and the opinion is generally expressed that with favourable growing weather a speedy recovery will be made. Excepting in some localities of Waterloo county, where the wheat was killed by winter exposure, and of Durham and Northumberland, where it was drowned out by April floods, no wheat land has been ploughed up, nor is any likely to be. The only insect pests of the wheat that are even mentioned by the correspondents are the Hessian fly and the wire worm, and these have done very little harm.

Winter rye is not grown as extensively now as in former years; but there are considerable areas on the old pine lands of Elgin, Oxford, and Norfolk in the west, and of Lanark, Kenfrew, and the

northern parts of Hastings and Frontenac in the east. The crop has come safely through the winter, and although thin on the ground it has a healthy look. It has suffered less than wheat from the April weather.

The reports on clover are generally favourable but the crop is still in a very backward state. Spring frosts have hurt it in some localities, especially second year meadows on loamy soils. The clover of last year's seeding has been but very slightly injured either by winter or spring weather, but in the regions over which last year's drought extended it is weak and patchy.

The seeding season this year is fully two weeks later than usual. In the northern and eastern parts of the Province snow covered the ground until late in April, and on the 29th of the month a foot of snow fell over an extended area. Rain fell also at frequent intervals, and the ground was saturated with water. As a consequence spring work has been delayed in those parts of the Province, and excepting on high or well drained lands very little seed was sown at the date of returns. In the western and south-western counties the season opened ten days or two weeks earlier; yet farmers have been greatly hindered in their work by the rains, and on low clayey and loamy land seeding operations are in a very backward state. But even on dry and well-drained lands the ground was too cold for germination, and fields sown on the 25th of April were only beginning to show signs of plant life towards the close of last week.

NEW VARIETIES OF SEED.

Farmers are alive to the importance of using new varieties of seed where old ones have failed, but they seldom risk experiments with unknown varieties offered by dealers at fancy prices. Two or three varieties of oats are highly spoken of, viz.: Black Tartarian, Egyptian and Cluster; and spring wheat grown from Manitoba and Dakota seed grain has given good results. The varieties of potatoes most in favour are the early and late Rose and the Beauty of Hebron; but Burbank's seedling and White Elephant are well recommended.

ORCHARDS.

Fruit trees are generally in a healthy condition. Some young pear trees in the northern counties and districts were killed by the hard frosts of winter, as were also a large number of plum trees in Grey and Bruce whose vitality had been lowered by disease; these instances, however, are exceptional. The state of vegetation is too backward to express an opinion on the prospects of the season's fruit crop, but blossom buds are plentiful on apple and pear trees, and also on plum and cherry trees where these are not affected with black-knot. Peach trees have suffered severely from the winter weather in Huron, Lambton, and all the Lake Erie counties; the fruit buds are destroyed, and it is feared that many of the trees will die. In Lincoln and Wentworth, below the mountain, there will probably be a third of a crop. In Northumberland, Prince Edward, and Lennox it is believed that all the more tender varieties of fruit trees have suffered from an ice-storm in the latter part of the winter.

LIVE STOCK.

The long winter was a hard strain on live stock, but excepting in the northern and north-eastern counties, over which the drought of last summer extended, the supply of fodder has been sufficient. In the northern townships of Huron, in Bruce, and in portions of Grey, Simcoe, Muskoka and Parry Sound, a state of famine prevailed, and hay sold in March and April at \$18 to \$25 per ton. A large quantity of pressed hay was sent into these districts over the railways, but the demand was only supplied in part, and many

animals died of starvation. In the Lake Erie and most of the West Midland counties, on the other hand, hay sold at \$5 to \$10 per ton, and all classes of live stock were well fed, more especially as coarse grains were plentiful and the market prices for them very low. But in consequence of the length of the winter the supply of fodder has been very nearly exhausted, and little, if any, will be carried over to another season. In the Lake Ontario and St. Lawrence and Ottawa counties large quantities of hay of the crop of 1883 were in the hands of farmers, and with economy in the feeding of stock the supply has been almost sufficient. The health of animals in these districts has been very satisfactory, but they are thin in flesh. In the western and south-western counties horse distemper has prevailed, and many deaths are reported. There was also a large mortality among young pigs and lambs, caused no doubt by the severity of the weather at the time they were dropped. In many cases whole litters of pigs were lost.

The supply of farm labour this year seems to be fully equal to the demand, and the rate of wages for the working season is less than for last year. Following are the average rates per month for the two years, for groups of counties:

COUNT GROUPS.	WITH BOARD		WITHOUT BOARD	
	1885.	1884.	1885.	1884.
Lake Erie Counties.....	\$15 85	\$17 25	\$23 36	\$25 05
Lake Huron Counties....	16 58	18 06	26 16	28 18
Georgian Bay Counties..	16 48	18 07	26 09	26 53
West Midland Counties...	16 57	17 45	23 60	24 77
Lake Ontario Counties....	16 91	17 96	24 51	28 34
St. Lawrence and Ottawa Counties.....	16 00	17 73	21 51	27 43
East Midland Counties...	16 24	17 35	25 10	26 36
Northern Districts.....	17 11	17 25	26 82	26 62
For the Province.....	16 42	17 70	24 56	26 78

The article entitled "The Apple Orchard," in May number of THE RURAL, should have been credited to our excellent contemporary the *American Rural Home*.

CONSULT the address "lab" on your paper and if you find the subscription is in arrears, be good enough to remit without delay. The receipt of the money will be acknowledged by a change of date on the label.

The question whether it injures maple trees to tap them depends altogether on how the work is done. The broad, deep cuts which used to be made are, undoubtedly, injurious. Trees do not last long with such treatment, but, if small holes are made, and these are plugged up after the season is over, the wound heals readily and without injury to the tree. Two, three, or even more taps can be put on a single tree, provided a small wound only is made for each, and provided these precautions are complied with. Maple trees are valuable property when they yield three to four pounds of sugar per tree.

The right temperature for summer churning is from fifty-eight to sixty degrees, and for winter from sixty-two to sixty-five degrees. If the cream is not too sour, but just of a pleasant acidity, when it is tasted, which will be when it is seventy-two hours old—that is, the milk is set for cream thirty-six hours, and the cream stands to ripen at a temperature of sixty or sixty-two degrees—butter will come very regularly in thirty minutes or a little less, with eighty turns of the churn to the minute. This is a very good time, and if the milk has been kept well and the cows are fed and milked always the same, the butter will not differ in quality during the whole year, excepting, of course, in colour, when hay and dry feed are used. If the temperature is less than the above the butter will be longer in coming; if it is something warmer the butter will come quicker, but will be soft and not of so good flavour, and if the temperature is much higher the butter will be a long time coming or come not at all.

Bees and Honey.



OFFICERS OF ONTARIO BEE-KEEPERS' ASSOCIATION, 1884.

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Communications on the business of the Association, and Bee-keepers' Department of the *Canadian Farmer* to be addressed to the Secretary-Treasurer, 251 Parliament St., Toronto.

HOW THE BEES HAVE WINTERED.

[The following was received too late for our May issue. So much of the information is still timely that we give the whole article.]

PERHAPS the most interesting question just now among bee-keepers when they meet is: "How have the bees wintered?" Towards spring there is a feeling of anxiety to know the result of nearly six months' confinement, not only as regards our own bees, but those of our neighbours also. Successful wintering throughout the country generally, or the reverse, will affect the extent of the next honey crop, and to some extent the prices likely to be realized.

So far as I can learn the loss in this section is about fifty per cent., mostly confined to bee-keepers who had less than thirty colonies last fall. The losses of those who had larger apiaries containing fifty stocks and upwards will not average more than ten per cent. Out of seventy seven wintered in my home cellar I lost two from starvation. I have fifty two stocks in a cellar in the back country which at this writing, May 4, have not been taken out, but, from all we can see, the loss is not likely to reach five per cent. As my home cellar is a very small one, I had to winter seventy-seven on their summer stands. Of these, seventy-one were able to fly on the first fine day, after four and one-half months continuous confinement to their hives. Two were found to be weak and were united with others, leaving my total loss ten out of 154, one-half wintered in the cellar and the other half on their summer stands.

A VERY large proportion of my bees are in a very satisfactory condition. When we get our bees out north home we shall have a busy time, but I purpose selling all I can from this till swarming time.

I now find that the greatest fault in my fall preparations was in feeding too late. There was a good deal of unsealed syrup in the hives. Most of the combs had some sealed honey in the upper part and in the corners. This was all consumed while the unsealed sugar syrup below was left apparently untouched, proving that the bees preferred sealed natural stores to unsealed syrup. My fall feeding has always been put off till after the middle of October because previous to that time there is brood in too many combs. If any one can give a plan by which the brood-nest of colonies, run for extracted honey, can be reduced to six frames about the 20th of September without sacrificing brood or curtailing the operations of the queen, I shall feel obliged. I purpose feeding honey in future for winter stores. Notwithstanding all that has been said to the contrary, I am

satisfied honey is at least as good as sugar, and there are some reasons for the opinion that it is even better. Mr. Frank Cheshire, the most scientific bee-keeper in England, says that for perfect health while in winter quarters, bees require the small quantity of pollen floating in honey, and that the arrangement of nature is the right one.

SOME one has said that for successful wintering "one stock chucked in beside another for sake of the additional heat, is better than any amount of packing." Some of our domestic animals, swine for instance, seem to understand the advantage of radiating their heat into each other, and lie as close together as they can. I have tried placing two stocks together, separated by a thin veneer of wood, for three or four years, and believe for outside wintering or for wintering in a cold cellar, it is a really good plan. Last fall I placed seventy six stocks in twin hives outside and the same number in the same way in the cellar. A year ago my bees in the cellar were in separate stocks, and although the temperature was higher they did not do nearly as well as they did this year. I am a firm believer in the advantage of thick quilts of wool to confine the heat and pass off the exhalations. All my colonies were provided with them and all the frames were raised two inches above the bottom boards. Those outside were packed, some with wool, some with cork dust, and some with sawdust.

SAWDUST gathers moisture and holds it. I shall not use it any more. If it were not for the expense I would use wool but cork dust is very good. I lined the inside of my packing cases with factory cotton, tacked to strips of wood half an inch square, leaving a space of half an inch between the packing and the outside board of the case. I have always found that in the early spring the moisture from the bees will have condensed on the cold outside board to such an extent that the packing becomes more or less wet. This is prevented by using the lining and I regard it as one of the best improvements I have ever adopted.

I HAVE lately spent a good deal of time in searching for dry bee-feces amongst the matter collected on the bottom boards in winter. I am pleased to be able to state that I have satisfied myself that bees do void feces in the hive of such consistency that the form is retained, and no stain is left where they drop. If any one has any doubts about the matter, I hold myself ready to take the debris from a bottom board and pick out bee-feces for him in his presence. This is no new discovery. The late Moses Quinby, Mr. Abbot, of England, and others knew the fact long ago, but of late it has been called in question. Those who write in favour of the pollen theory claim that healthy bees never void except on the wing, and that their excreta is always liquid. They also claim that the retention of pollen for several months in the intestines is sure to produce dysentery. They are mistaken in both cases. Bees do void their excreta in a solid state in the hive, and it consists very largely of pollen or pollen husks. On their first flight my bees discharged long strings showed somewhat like a sausage of several links, and so dry that no stains were left where they fell. In some cases the voiding occurred while the bees were on the wing, and in others after having alighted and while walking off. I shall always aim to enable my bees to evaporate the water from their bodies so that they can void their excreta in this form. This is the humidity theory in a nutshell. I have exactly similar pieces in my collection picked from beneath the clusters, besides pellets of fecal matter in nearly a globular form. The best way to

collect these particles is to sweep contents of the bottom board into a sieve in order to get rid of dead bees. Some of the matter may then be shaken from a finer sieve on a pad of writing paper and the fecal particles picked out with the aid of a magnifying glass. My experience is that the matter taken from the bottom boards where stocks have died is richer in fecal droppings than that from stocks which have wintered well. I shall be very much pleased if some of our friends will take an interest in this matter. There is still much to be learned, and close observation will reveal matters of interest where none are supposed to exist. S. CORNELL.

Lindsay, May 4, 1885

WINTERING BEES SUCCESSFULLY.

ALTHOUGH reports from bee-keepers in all the Northern States indicate a much greater mortality among swarms during the past winter than usual, there is occasionally an exceptional case, and the methods employed by these successful bee-farmers will be studied with interest by those less fortunate. In a communication to the *American Bee Journal*, D. R. Roseborough, of Casey, Ill., makes the following statement: "This has been a very severe winter on bees, and a great many bee-keepers have lost all they had; one man told me that he had lost thirty-seven colonies out of forty-two. I had forty-five colonies last fall, and I now have forty-four which are in good condition. I have some Cyprian drones flying. I never had so few bees die, as I swept up only about two gallons of bees and litter from the cellar floor.

"I do not see why my neighbours lost so many bees and I none, comparatively, especially as the bees had the same flowers to work on last season. I think that the secret is in the management. I use a one and one-half storey hive, and I left the caps on all of them, laid three or four slats across the frames and spread oilcloth over the slats, and packed over the oilcloth with chaff cushions. Any time that I would raise the oilcloth the bees were all over the tops of the frames, and could move from one to the other just as they wished. I did not allow any snow to lie around my hives.

"The hives are made of one-inch pine lumber, and they were left on the summer stands. I left all of the pollen in that they had stored in ten Langstroth frames, and the bees reared brood all through January and February, and to-day there are lots of brood in all stages in the hives, and plenty of young bees, too. They will use a gallon of Graham flour a day.

"This winter my bees had the very best of honey to winter on. The bees that died did not have the diarrhoea, for I have examined hives in apiaries where the loss was the heaviest, and there was no sign or smell of diarrhoea, and the honey was bright and clean. Where the loss is the heaviest the bees were in box hives, and the bee-keepers did not try to keep the snow away from them, and we have had some heavy sleets during the past winter. My colonies were well equalized last fall with bees and honey. There were three colonies that had nothing over them but the oilcloth, and to-day they are fifteen to twenty pounds lighter than those that were packed. I still think that pollen has nothing to do with wintering bees, for if they have good honey and proper care they will come through all right."

HOW TO INCREASE.

Mr. A. J. Root, in *Gleanings*, replies to an inquirer: Can I take two frame nuclei this spring, give them laying queens, and with the aid of partly drawn combs and full sheets of idn. (no brood

from other colonies) as needed, and stimulative feeding, build them up into strong colonies by the time white clover comes in bloom, so as to get a honey crop this year?

How early should I begin?

How warm must the weather be to begin feeding for this purpose?—C.

ANSWER.

Friend C, you can build up two-frame nuclei without a bit of trouble, in the way you suggest; and if you were an old hand at the business, and knew just what to do, and how to do it, I should say you might commence the first of April. I am more and more convinced that, with the low price of sugar, bees can be raised ever so much cheaper than they can be purchased. We do a large business in selling bees, as you know; but almost every time they go off, I feel as if the purchaser, if he has any time at all on his hands, could raise them very much easier than he could afford to pay for them. Sixty days ought to be ample time for an expert to build a two-frame nucleus up to a strong colony.

Mr. J. E. Pond, in the *American Apiculturist*, says: For the past three or four years, I have made use of a method which entirely prevents swarming, and is so far a success in that direction, that I have no fear of any stock swarming out during my absence, even though at work storing surplus in sections.

This method, which I call the nucleus plan of making swarms, is as follows: about the first of June, or as soon as the bees show symptoms of being affected with the swarming fever, I take a frame or two of brood from each strong colony (being careful not to take the queen) and place them in one or more new hives (depending upon the number of colonies I have), filling their places with empty comb or foundation. I then remove another strong colony to a new stand, set the new hive in its place and introduce a queen. I purchase my queens as I can do so much cheaper than I can rear them. If I were rearing my own queens, I should make preparations accordingly.

In a few days the nuclei formed as above will become strong colonies, and as many more as we choose can be made in the same manner. By making use of the above method, natural swarming is prevented, good, healthy, strong colonies are obtained, and the working force of the old colonies is not depleted or injured. Natural swarming prevents the gathering of a large amount of honey, as it takes a large number of foragers from the hive; while the occasional taking of a frame of brood in no wise lessens the working force of the colony. The empty comb or foundation with which the frame of brood is replaced is immediately filled with eggs by the queen, and thus the working force of the colony is kept supplied, and that without injuring its honey-gathering qualities.

INDUSTRIAL EXHIBITION

APIARIAN DEPARTMENT.

Taking into consideration the special importance of securing particular public attention to the great excellence of granulated honey there will be increased prizes next exhibition for the display of this class. The impression amongst those who have means of best knowing is that there is misapprehension and much want of right appreciation very common in regard to the quality of honey when white and hard. And by the committee it is thought desirable to particularly encourage and give to such extra prominence as means of leading judgment and taste rightly in this direction.

BEE-KEEPING BEGINNERS BE CAUTIOUS.

There seems considerable danger now that bees and honey have come so fully to the front that too many persons may be led rather rashly to make a start in this line. The *Kansas Bee-Keeper* has in last issue some honest words of warning. "Our journal is devoted, as it should be to some extent, to giving advice to beginners, or those who are not familiar with the new methods of bee-keeping. We do not, however, wish to be understood as advising any one to take up bee-keeping as a new business, or to enter into it as a vocation, with an idea that large profits can be made at once, and with a small outlay of time, labour, trouble and expense. If any do start in the business with such ideas, they will speedily learn to the contrary. If there is any business in existence that requires hard study and a long apprenticeship to learn it well, it is apiculture. No business either is subject to more grievances than it; and none more fluctuating in results. Depending as it does largely upon the vagaries of fluctuating seasons, it must be at the best somewhat capricious, and while it pays well in good localities and good seasons, with good management, it will not pay and cannot be made to pay under any other conditions or circumstances." Very many become discouraged and disgusted, a few deserted hives remaining to be used for other purposes being the outcome instead of stacks of anticipated honey. Mr. Root, publisher of *Gleanings in Bee Culture*, has a department in his journal headed "Blasted Hopes" for which there is always matter ample. Special thoughtful experiments on small scales at first are to be earnestly commended as well as reading on the subject.

BEE-CULTURE.

Among the recent industries of rapid growth in this country, bee-culture stands prominent. Of course, as a homely art, bee-keeping is no modern industry, being as old as history; but in its scientific developments it is of recent growth. In these times, when science is properly taking its place at the helm in all departments of human industry and activity, it is not strange that it is properly assuming the guidance of bee-culture. This is a utilitarian as well as a scientific age, and this is why bee-culture is being so rapidly developed, for its extraordinary growth is only in the ratio of its utility. Though known to commerce for twenty-five hundred years, hitherto it has been followed and known, in this country at least, principally as a local industry. But bee-culture, from the soundest economic considerations, ought undoubtedly to become a great national industry fostered and protected by the State. Apiculture is naturally a part of and closely allied with agriculture, inasmuch as the nectar gathered by the one is immediately derived from the same fields and forests that yield the abundant ingatherings of the other. Indeed, the bulk of the honey-crop of this country (which is, in round numbers, about 100,000,000 pounds annually) comes from the bee-keeping which is in connection, more or less, with farming.—*Allen Pringle, in Popular Science Monthly.*

EXHIBITION JUDGES.

Sir,—As THE RURAL CANADIAN occupies a position as the organ of the O. B. K. A., I beg space to place before the public, and especially exhibition committees, a growing evil, an evil disguised. A superficial glance might lead one to see advantages; but a closer inspection will bring to view disadvantage and I would suggest that marked copies of THE RURAL CANADIAN be forwarded to the leading committees of management for exhibitions in Ontario.

The matter upon which I desire to write is the appointment of judges for honey and apiarian

supplies. No doubt it is a difficult matter to obtain competent men to fill such places; but there always will be some parties dissatisfied with decisions. Of this or that individual case or place there is no wish to speak but the mistake of appointing any man connected with a supply business whether exhibiting or no. Many may say that if A. does not exhibit at say Whitby, no better man could be found to decide between B and C; but I hope to make clear why this is not the case. A if perfectly conscientious and willing to do what is right is only human, and if an interested party, cannot have perfectly clear judgment in the matter at the best, but he may not be over scrupulous in business and will decide to best meet his own ends. He is an interested party in this way: B may be his most powerful opponent in business and at other exhibition's and every laurel wrested from this opponent means to strengthen his own position; therefore he will be pleased (innately at least) to award the prize to a less powerful opponent. Is this not natural? It is so obvious that one's attention need only be drawn to the fact to see. May this be remedied and avoided in justice to all. Toronto has acted in accordance with this; may other places do likewise.

R. F. HOLTERMANN.

WINTERING BEES.

Sir,—In the "Apiarian Department," page 110 of the May number of THE RURAL CANADIAN here is an article headed "Notes from the *Bienen Zeitung*, Germany, by Julius Hoffman." The article is one certainly worthy of remark. In it he states: "Foul air and want of water in connection with cold weather are the principal causes of bad wintering" and then states in effect that low temperature condenses moisture and induces them to breed which they should not do until the pure natural pollen is gathered, making two widely different statements. Which is the correct one?

Again "when the right strain is developed we can winter them as successfully as we can our cattle and with as little trouble." "When you have secured such a strain which contains the desirable qualities then shall you have solved the winter problem, and have the coming bee."

The writer appears to dwell almost exclusively upon the strain and any one glancing over the article would be led to believe that this was the primary and almost the only requisite for successful wintering. Now although this may and no doubt has something to do with the question there is no doubt that bees could be successfully wintered if, firstly, breeding, where required, were kept up by stimulative feeding until such a time as the young bees could fully mature and fly before cold weather (not later); secondly, sufficient thoroughly well ripened stores of the right kind (I believe to secure this, stores should be sealed in a populous hive during hot weather with the hive well ventilated and at a time when the bees are not crowded with a honey harvest, if this latter they will often cap before honey is properly ripe and in the winter they become injurious); thirdly, in a place where the temperature will vary the least and the bees packed in a manner that the surrounding material will be absorbed being a poor conductor of heat; and fourthly, perfect rest after the last flight until spring.

Of course, we understand the colony is to be complete, not united late in the season with another and no queen lately introduced. When these conditions are fulfilled, I fancy complaints as to loss will be but few, and unless a strain is run out in a locality where little fresh blood is infused or perhaps hybrids have been repeatedly bred from, unless such is the case, our ordinary strain of bees will winter well. My opinion is that to breed for successful wintering is practically impossible; it would require an amount of care and observations in experiments which would financially never repay and the prospects for success are so obscure that no one would attempt it.

R. F. HOLTERMANN.

The Grange Record.

OFFICERS OF THE DOMINION GRANGE.

OFFICE.	NAME.	POST OFFICE.
Worthy Master	Leit White	Blenheim, Ont.
Overseer	A. B. Black	Amburst, N. S.
Secretary	Henry Woodman	Manana, Ont.
Treasurer	J. P. Bull	Devonport, "
Lecturer	Chas. Mottat	Edgo Hill, "
Chaplain	Geo. Lothbridge	Strathburn, "
Steward	Thos. S. McLeod	Dalston, "
Asst. Steward	Wm. Brock	Walden, "
Gatekeeper	L. VanCamp	Bowmanville, "

LADY OFFICERS.

Ceres	Mrs. C. Lothbridge	Strathburn, Ont.
Pomona	T. S. McLeod	Dalston, "
Flora	C. Mottat	Edgo Hill, "
L. A. Steward	E. H. Hilborn	Urbridge, "

EXECUTIVE COMMITTEE.

Jabel Robinson	Middlemarch, Ont.
Robert Currie	Wingham, "

AUDITORS.

Chas. Mottat	Edgo Hill, Ont.
T. S. McLeod	Dalston, "

OFFICERS OF ONTARIO PROV. GRANGE.

OFFICE.	NAME.	POST OFFICE.
Worthy Master	R. Currie	Wingham.
Overseer	Thos. S. McLeod	Dalston.
Secretary	A. Gifford	Meaford.
Lecturer	D. Kennedy	Peterboro.
Treasurer	R. Wilkie	Blenheim.
Chaplain	E. Wright	Banks.
Steward	Thos. Keazin	Cashtown.
Asst. Steward	Wm. Brock	Adelaido.
Gatekeeper	J. P. Palmer	Fenelon Falls.

LADY OFFICERS.

Ceres	Mrs. C. Mottat	Edgo Hill.
Pomona	G. Lothbridge	Strathburn.
Flora	E. M. Cryster	Dolhi.
L. A. Steward	J. McClure	Williscroft.

EXECUTIVE COMMITTEE.

Thomas S. McLeod, Esq.	Dalston.
Chas. Mottat, Esq.	Edgo Hill.

AUDITORS.

W. H. White, Esq.	Chatham.
S. Boltachey, Esq.	Palatoy.

On Tuesday, June 2nd, the Grangers of Huron, Middlesex, Norfolk and Elgin will celebrate the eleventh anniversary of the Dominion Grange at Port Stanley, on Lake Erie. On the same day the Grangers of the above district will run an excursion to Kincardine, giving all the members and others an opportunity of seeing the Grangers' Salt Works in operation.

FARM HELP.

There is hardly any problem which enters into the life of the farmer and his family of more importance than that of the farm help. Some young farmers starting in a small way may be able to get along without regular help, hiring by the day at those seasons when work is most pressing; others with a family of boys coming on may get along without hired help. But these are exceptional cases. The great bulk of our farmers need and must have help of some kind for a part, if not during the entire year. Where the farm is situated near a village or town of any considerable size, there are always men whose services can be secured by the day. But the trouble about depending upon help of this class is that when work is most pressing there are so many wanting extra help that there are not enough to go round, the price of wages is put up, and the labour in a sufficient quantity is not obtainable even at the advance. Besides, this class of help expect to do no work except their regular hours in the field, leaving the farmer with no assistance in doing his chores night and morning. There is this advantage in such help, that they do not have to be boarded in the family nor paid wages in bad weather when they cannot work. But the usual plan is the hired man in the family—and this on many accounts is objectionable. If men of intelligence, sober, reliable and of good character and habits could always be secured, it would be less so. Unfortunately, it is not the case. Farmers are often compelled from necessity to hire men who are ignorant and slovenly in their habits and coarse in their manners, if not vicious in character. It is a serious thing to bring a man of such character into the family in constant association with the children growing up. The harm which

he may do them is incalculable, while his presence is at all times disagreeable and annoying—not that all the men who work for wages on the farm are of this class; but too many are. The boarding and washing for such help imposes a heavy tax upon the farmer's wife, and often makes necessary the hiring of a girl, when otherwise none would be needed, and the domestic privacy of the family would in no way be interfered with by any outside element being brought in to annoy or corrupt. This leads to a third plan which is believed to be every way preferable to either help by the day or hired men in the family, it is the hiring of men with families, and furnishing them with a house to live in. A man with a wife and children to support has more at stake than a single man, and, as a rule, will prove more reliable. If furnished a house to live in, a garden spot and pasture for a cow, he will work and board himself for wages little above that which have to be paid the man who is boarded in the family. He helps about the chores night and morning, and in most cases his wife can be secured to assist the farmer's wife in any emergency or regularly in doing the washing and ironing, or other heavy work in the house. In such case his only association with the children is as they may happen to be with him in his work. The cost of a tenant house for such help is not a very heavy tax. A house 16x24 feet, with sixteen foot studing, makes a very good size. The first story should be eight and a-half feet in the clear, with eight feet cut off in the rear for bed-room, pantry and stairs, leaving a front room 16x16 feet, with a front and side door. On the side a cheap summer kitchen can be built, the side door opening into it. The chambers can be finished in two rooms, front and rear, being finished up on the rafters enough to give sufficient height. Such a house can be built of lumber at a cost not much if any exceeding six hundred dollars, and would be entirely satisfactory to a first-class farm hand. The interest and taxes would not exceed \$50 per annum, and if care was made in the selection of the man hired, it would, taking all things in the account, prove one of the best investments that could be made on the farm.

DOES FARMING PAY?

The writer met a farmer who declared that farming was the poorest-paying business in the world, and yet, in the course of conversation, it turned out that twenty-three years previously this man had arrived in one of the Western States with a wife and something less than \$10 and gone to work on a farm. To-day, or rather at the time of meeting, he was the owner of a farm of 180 acres, worth, with improvements, \$65 an acre; in addition, he owned some good stock, including a pure-bred bull, five good horses, and a fair plant in the way of implements, waggons, farm tools, etc. In a word, he could not be worth less than fifteen thousand dollars at least. This man had a sort of impression that he earned little or nothing; in a word, to use his own expression, he just managed "to keep things going," yet he had not only made a living, no doubt an economical one, for himself and his family, but had accumulated fifteen thousand dollars, and yet, beyond a certain shrewdness and good judgment, this man had no special ability, and according to his own admission he had had no special advantages. Could he have done better or as well in any other line of life? On the other hand, we have constantly present cases where men have started in with some capital in farming and lost it all, or are worse off to-day than they were fifteen years ago, while the cases are legion where, after a painful struggle with fortune, lasting ten, fifteen or twenty years, the farmer has succumbed

to the temptation of selling his farm for twice what he paid for it, and taking what was left after paying mortgage and debts, has made another move westward to begin life anew under, let us hope, more favourable auspices. But is it not a fact that, in most of these cases, the victims of what they call ill luck are men who would not have risen anywhere to a higher position than that of mere labourers? Workmen there are in abundance—carpenters, joiners, blacksmiths, painters, printers, but how many are there who, in addition to knowing their trade, have the additional qualifications to conduct a business of their own, or even to make competent foremen? So with farmers, how many there are competent enough to conduct the ordinary operations of the farm, but lacking in the good sense, the judgment, intelligence, and general capacity to conduct the business of farming successfully. Such men manage to eke out a poor living, and on farms not worth more than \$10 to \$20 an acre their ill success is not quite so conspicuous, but as the country grows and their neighbourhood becomes settled and land rises in value, they feel out of place and behind the rest of the procession, and as they have never made an effort at self-improvement, and probably are unequal to the task, perhaps the best thing they can do is to sell out to a better man and move out of the way.—*Live Stock Journal.*

WORKSHOP ON THE FARM.

A correspondent who appreciates the value of having a place fitted up at the house or barn in which to do simple home repairing, says that no reasonable farmer will dispute the importance of a workshop upon his premises, and especially those who have boys to bring up. Boys will be busy, and if opportunity is not given for a full employment of their time either with work or sport at home, they will seek diversion abroad, which will not usually result profitably. A farmer gives his experience and opinion upon the matter in the subjoined sensible talk:

How many farmers do we find that have not the ingenuity to repair a rake, or other small farm implement. Were they brought up on a farm? Yes. Well, then, why is it? Some may say they are of that unfortunate class of mortals that are not gifted with their share of ingenuity. This is a great mistake. If you will take the trouble to enquire of them what they spent their time at when young they will tell you farming. Was their father a farmer? Yes, the best in the neighbourhood, they may say. Well, what did he employ himself and boys at on rainy days? Oh, nothing; when it rained too hard to work, we generally spent our time at the village in the stores and tavern. You know that boys want rest sometimes. Very true; but is there no other enjoyment for boys than at the tavern and stores? Had the father had a workshop with a select lot of tools, would not those boys have some job for a rainy day, such as a little cart, sleigh, waggon or boat to make or repair? There are few boys who do not have such things to make. Thus by having a small workshop boys soon acquire a taste to handle tools, and tinker up many little playthings of their own.

When older, the knowledge gained will be of great service to them in making and repairing implements on the farm. But there are habits which they acquire in spending their leisure time at the village, which are the ruin of many a promising boy; for where do we find a village now in which there are not one or more taverns, where the temptation appears to be strong, judging from the numbers we generally find in them getting spirituous liquors to drink?

When will farmers learn to make their homes

attractive for their boys and themselves? A few good books, one or more good agricultural papers, and last, but not least, a workshop.

I rejoice to say I am a farmer. Although young yet, I find I can keep up with my neighbours. I have always lived on a farm, my father is a good farmer, and he has a nice little workshop, in which I first learned the use of tools. I can mend a plough, waggon, or sleigh, or an ox chain, sharpen and temper a crow bar, make a gate and hang it, mend harness, boots, shoes, and tin pans, repair and clean a clock and watch, iron and darn stockings. My apprenticeship was served in my father's farm shop on rainy days. I find that it has not been much of a load to carry along, and it has given me a love for home, with skill and ingenuity to keep things neat and in repair, and to make home attractive to myself and family.—*Tribune Farmer.*

ANNUAL MEETING OF THE ASSOCIATION OF NURSEYMEN, FLORISTS, AND SEEDSMEN.

The tenth annual meeting of this Association will be held in Hershey Hall, on Madison street, opposite McVicker's Theatre, in Chicago, Ill., commencing Wednesday, June 17th, 1885, and continuing three days. The Association is the largest body of horticulturists in the country. The objects sought commend themselves to all engaged in any of the departments of the nursery trade. The discussion of questions directly concerning the welfare of the trade, new methods of propagating, new labour-saving devices, making the personal acquaintance of others in the trade, exchange and sale of surplus stock, exhibition of new trees, fruits and plants, are among the many reasons why every person interested in horticultural pursuits should be present at this meeting. These meetings come but once a year,—not too often to be most profitable.

Aside from the great interest and profit attaching to the meeting itself, it comes at a time of year when, after a season of great exertion and hurry, the nurseryman feels the necessity of a little pleasure, relaxation and rest—and how can this be more profitably taken than in meetings of this kind with those in the trade.

The badge system of last year is retained this year. A numbered badge and badge book are furnished all members, the number on the badge corresponding with the number against the member's name in the badge book, thus enabling all to distinguish any one at the meeting, as soon as he ascertains the number of his badge. In the badge book each can give under his number any specialties, surplus stock, new fruit, wants of any kind, etc., at a very moderate cost. The system worked admirably last year, and resulted in many exchanges of nursery products.

An outline programme, hotel and railroad arrangements and other information may be obtained by addressing the secretary, D. Wilmott Scott, Galena, Ill.

THE NEWSPAPER AS AN EDUCATOR.

Of the various means by which farmers are enabled to keep up with the spirit of their profession, no agency is so potent as the progressive, conscientious newspaper. Here is presented, and no where else can be obtained, the results of the best thought and most careful observation and experience of the practical and leading workers of the profession, labouring over a wide expanse of country, and under every conceivable difference in surroundings and conditions.

The mass of facts and practical details, embracing almost every question, and presented within the period of a single subscription, even

can not fail to be of inestimable value to those who have eyes to read, and a purpose to improve their farm management wherever improvement is possible.

And this is not all, for all these details and questions about farm economy are matters of business to the farmer, and the oftener they are presented, and the more different lights and standpoints from which they are discussed, the oftener is the mind brought to consider them, and the broader grows its comprehension, until the reader figures out for himself ideas, and ways, and directions of improvement which would never have occurred to him if these matters had not been continually taken up and turned over in his newspaper.

It is a grand thing for the farmer to be often "set to thinking," even if he is told nothing positively new. The subscription price is a mere trifle, and the practical questions discussed cover such a wide range that the reader must be a dull one indeed who does not receive his money back many times in the course of a year. The most simple bit of information, the slightest suggestion of value, the faintest new idea about his business, is worth to a practical farmer more than he pays for a newspaper subscription, and he will get many such during the year. He can make or lose more than that in fitting a single pig for market, in the proper feeding of a calf, in the quality of a single churning, in the cutting and curing of a single acre of grass, and in numberless other trifling ways, to say nothing of the broader questions of management.—*Breeders' Gazette.*



The above cut illustrates a Novelty Rug Machine, which is employed for making rugs, tidies, door mats, mittens, hoods, etc. It is very simple in construction, and is worked with ease and rapidity. See advertisement.

EFFECTS OF DRAINAGE.

Does tile drainage materially diminish the supply of water, or are the lands which are tiled more subject to drouth than those which are not? And, again, is it true that lands which are drained by tile are more subject to freshets than untiled lands? These questions which seem to have been settled by public sentiment at least, in the negative, judging from the number of tiles that have been laid during the last decade in this State, are answered differently by the author of a paper read at a recent meeting of the Illinois tile makers, in which it was stated that "the tile business is overdone and the effect will be to give us water when we have more than we want, and to lessen its quantity when we have not enough." Yet there is no problem more simple to demonstrate than that land which has been tiled becomes more porous and friable, partaking of the nature of a sponge in the sense that it retains a portion of the water and allows the surplus to pass off gradually, thus preventing freshets and also preventing the soil from becoming baked. The moisture retained in the soil by

capillary attraction is sufficient to carry a crop through a long drouth if the surface is left loose and not allowed to bake, as is the case with land which becomes soaked and is allowed to remain until the water evaporates. It is also true that in land in which the tile has been laid from 2 feet to 3 feet deep the capacity to retain a large amount of water, and yet not make the surface too wet for cultivation, is greater than where the tiles are not laid so deep. While the average water supply may not be changed, it will be more evenly distributed through the season and insure a more regular yield of crop.—*W. J., in Prairie Farmer.*

TO PRESERVE FENCE POSTS.

A correspondent of the *Country Gentleman* recommends saturating fence posts with crude petroleum by boring a half dozen holes into them obliquely, near the butt, with a three-quarter inch bit, then filling with petroleum, and plugging to prevent waste. After the operation the posts should lie in piles a week or ten days, when the pores of the wood will be completely saturated as high up as they are specially liable to decay. A paint composed of raw linseed oil and pulverized charcoal is then spread freely over the lower end of the posts, and six inches above the surface line when set. White oak posts, cut in February, and sawed 4x4 at the butts and 4x2 at the top, and prepared as directed, are claimed to be good for any man's lifetime, if occasionally covered with a fresh coat of cheap paint. A four inch wide strip, one inch thick, should be nailed on for a top rail, and the posts then sawed off square, when a five inch strip nailed to top of posts, and edge of the four inch strip will keep water from getting into the tops of the posts and rotting them. Two strands of barbed wire below the top strips will make a fence that will turn cattle and look well. The wire should be put on in warm weather, to secure the proper tension, and one or more additional strands should be used if sheep or swine are to be pastured.

BUSINESS FARMING.

A noted English agricultural writer says: "The farmer has failed as a business man." I do not see how a farmer can do any better, so long as he crawls along in the dark, keeping no accounts, knowing scarcely anything of how much he owes until the bills come in at the new year; and having a very meagre knowledge of what he has to sell and the market value of it, from which he may pay what he owes. This way of doing business keeps farmers poor, and leaves them at the mercy of dealers and middlemen of all kinds, who thrive and grow rich on the products of the farmers' labour. A very conspicuous instance is given in the present low values of wheat and pork. Two months ago pork was selling at \$7 per one hundred pounds. It is now \$5. The farmers who acted on the common business principle of being the first in the market got a good price; the backward ones are losing money and are yet forced to sell, because to feed the hogs longer would be to suffer them to "eat their heads off." This is hard luck for the farmer, but it is the inevitable result of a lack of business management. It is equally hard luck for the wheat grower, who has no idea as to whether he should sell or hold his grain, not knowing anything at all of the general position of things in the world, because he neglects the very first rule of the business man, which is to read newspapers and know everything that is going on all the time. A farmer should have his daily newspaper quite as necessarily as the men who buy his produce; but not one in a thousand uses this indispensable means of acquiring a knowledge of his business.

HOME CIRCLE.

THE NEW GIRL.

"You couldn't spare me a very little money, could you, father?" Janet leaned over him as he counted some bills.

"If it is for something absolutely necessary, my daughter."

"I can't say it is exactly that, but I never get a cent of pocket money now, father."

He sighed as he answered, "I know it, and I am sorry, but the pressure seems harder every year. Wants seem to increase faster than the means of supplying them. Hand this to your mother, Janet."

"Forgive me for worrying you, dear father. I ought to be making my own spending money, but there are so few ways of doing that unless I go away from home."

"We can't let you do that. There's enough for all, if we are careful."

"Take it out to Bridget," said her mother, as Janet gave her the money from her father.

"Twelve dollars. Dear me!" said Janet to herself, rather fretfully, as she slowly walked towards the kitchen. "Bridget has earned it, and I don't grudge it to her, but I wish I could earn twelve dollars."

"Wirra, wirra!" Bridget sat on the floor, holding an open letter, and rocking herself backward and forward with dismal groans. Pots, pans and kettles were around in their usual confusion. "It's mesilf must be lavin' yez, the day, Miss Janet."

Servants were hard to find, and Janet's face wore the accustomed expression of dismay with which such notices were always received, as she asked, "What's the matter, Bridget?"

"It's me sister's got the fever bad, an' it's mesilf must be goin' to her; an' it's six weeks intirely I'll be shtayin' when it's so far to be goin'."

As Janet handed Bridget the money, a sudden thought came to her.

"I am sorry for you, Bridget. Of course you must go, if you must. Perhaps we can get along without you until you are ready to come back."

"Mother," she said, returning to her, "Bridget's going away for a few weeks." Mother's face grew as dismayed as Janet's had, for she was not strong, and there were four boys.

"An' plase ye, ma'am, it's after comin' to try to get the place I am."

"What do you mean, Janet?" said her mother, laughing, as the girl courtesied low.

"I mean, mother, will you pay me the same you pay Bridget, if I will do her work?"

"You can't do it all, Janet?"

"What I can't do I'll hire. I want to do something. I want to get some money I can feel is my own, and that I have a right to spend if I want a new book or a bit of music, or anything else. I can't get a school—there are forty applicants where there is one vacancy. I can't get more than two music scholars. I can't dispose of fancy work or painting, and if I could, I might dabble over them for a month, and not clear more than Bridget does in a week, there are so many doing that kind of work. Kitchen work is the only work there seems to be plenty of for girls."

"You may try it, but I think you'll get very tired of it."

Janet spent a good part of her first week's wages in buying gingham aprons, rubber gloves, and paying a stout woman to come and scrub and scour until the last traces of good-natured, slovenly Bridget's presence were removed. Then with clean kitchen, clean utensils and clean towels, Janet took hold of her work with a right good will.

"We'll all co-operate," said her father when he heard of her intention.

"We'll co-operate," cried the boys, and they kept their word well in bringing of wood and water, and sweeping the walks. And after the first morning she found that Tom had made the fire and ground the coffee before she came down.

"There's great satisfaction in doing things thoroughly," said Janet to her mother, after the first day or two. "Before, when we have been without a girl, I always hated it, because I tried how little I could get along with doing, and how much I could shove out of the way. And, mother, you would be astonished to see how little cleaning there is to be done when nobody makes any unnecessary dirt, or how much work can be saved by using your wits to save it."

She never told her mother how her back ached during those first days of unusual exercise. This wore off as she became accustomed to it. Every day she learned more and more to simplify her work. A few minutes in the kitchen just before bed-time arranged things so exactly to her hand that there was no hurry or crowding at the busy time in the morning. Careful handling of table linen and other things made the wash smaller, so that the stout woman could do two weeks' wash in one. Janet found that there were few days in which she could not sit down when the dinner work was over. Other surprising things came to light.

"What's the matter that you don't burn any wood now-a-days?" said Tom, "I have so little splitting to do."

Bridget, like so many of her sisterhood, had always seemed to consider it her duty to keep a roaring fire all day, regardless of whether it was needed or not, and father always looked blank over the fuel bills. One-half the quantity was now amply sufficient, and a difference was soon apparent in many other things. The food for one person is always noticeable in a small family, where a rigid hand must kept upon expenses, besides which, Janet was not slow in perceiving how many things went further than before. Odds and ends were utilized which had been thrown away or had counted for nothing, but no one felt afraid of scraps done over by Janet's hand.

"We never were so comfortable before," said father.

"We never had such good things to eat," declared the boys, who highly appreciated the dainty, though plain cookery, as contrasted with Bridget's greasy preparations; for Janet, full of honest determination to earn her wages, had given much attention to the getting up of palatable, inexpensive dishes, seeking a variety, while Bridget had moved almost in one groove.

"I almost dread having Bridget come back?" said mother.

But the time came when she was hourly expected. Mother sighed as she took note of the spotless kitchen, in which it was now pleasant to come and lend a hand at the cookery, or sit with her knitting, with Janet moving briskly about.

"It's time I was settling with you, Janet," she said. "Six weeks—I owe you \$18."

"No; six off for hiring Mrs. Burt, and a few other things."

"Not a bit off, dear; I've been looking over the bills for the month, and I find quite a difference, more than pays for all your extras. Not only in meat, groceries and fuel, but I notice it in the wear and tear and breakage. Dear me! I don't believe five dollars a week covers expenses of Bridget's being here."

"You don't mother, dear," said Janet, in great delight, "then you are not tired of your new girl, and wish to have Bridget back?"

"No, indeed," said mother, fervently.

"Then she isn't coming back! I've found my

way of earning, and I'm going to stick to it for awhile. It isn't all pleasant, to be sure, but I don't know any kind of business that is. Only," she said, laughing, "I shall insist on having my wages paid as regularly as if I were Bridget. I shall clothe myself out of them, and be saving dear old father about five dollars a week, if you are right in your calculations, mother."

"What will you do with Bridget when she comes?"

"Mrs. Whitcomb wants a girl, so she can go there. Oh, mother, dear, it's a real comfort to feel as if I were supporting myself. And I wonder why I never thought how pleasant it is, this doing for you all."

And Janet worked on, feeling sure she had found her best way of securing her pocket money in thus expending her energies for those she loved. How many daughters, restless and fretful for want of something to do, might find the same way blessed to themselves and to others, in homes made bright and sweet by their faithful ministrations.—Selected.

A REMINISCENCE.

My dinner table was laid for invited guests, and everything was ready for them to be summoned into the dining-room. I gave a parting glance at my well arranged table, and felt proud and pleased. I knew, too, that the dinner was well cooked, and the feeling of satisfaction which possessed my soul more than compensated me for the extra labour and care I had had in preparing it. I seated my little girl, five years old, fresh and sweet, in her clean starched dress in her high chair, and was about to turn to go into the parlour to call them to dinner, when a sudden cry from her made me look back. She had, by some terribly unlucky accident, overturned a tureen of gravy, and the greasy liquid was rapidly spreading itself over the table. My temper rose in a twinkling, and an angry exclamation rose to my lips. I was overwrought with work and excitement, for a dinner party was not a common occurrence in our quiet household, and our guests were those of whom, to tell the truth, I stood somewhat in awe. A minute before, everything was so auspicious, and now, what should I do! It seemed a drop too much for my tired nerves—many drops too much for my table cloth. I was about to jerk my child down angrily from the table when a blessed influence held me. I caught the expression on her face. Such a sorry, frightened, appealing look I never saw, and suddenly a picture of the past came, and stood out vividly before my mind's eye. My child's face revealed feelings which I had experienced twenty years before.

I saw myself a little nervous girl, about eight years old, in the happy home of my childhood. It was a stormy afternoon in winter. It was when coal oil lamps were first introduced, and father had bought a very handsome one. The snow had drifted against the kitchen windows, so, although it was not yet night, the lamp was lighted. Mother was sick in bed, upstairs, and we children were gathered in the kitchen, to keep the noise and confusion away from her. I was feeling very important, helping to get supper; at any rate, I imagined I was helping, and in my officiousness I seized that lamp and went down to the cellar for some butter. I tried to set it on the hanging shelf, but alas! I didn't give it room enough, and down it fell on the cemented floor.

I never shall forget the shock that it gave me. I seemed almost paralyzed. I didn't dare to go upstairs, and I was afraid to stay down there, and to make it worse I heard my father's voice in the kitchen. He had cautioned us all, again and again, to be careful of that lamp, and now,

there it lay, smashed to pieces! But his voice seemed to give me the impetus I needed to go up, and meet the scolding or whipping, or both, which I felt sure awaited me and which I really felt I deserved. So I crept up over the dark stairway, and as I entered the kitchen I met father with such a stern look on his face that I was frightened. I saw that there was no need to tell him what had happened. He had heard the crash, and if he hadn't, I guess my face would have told the story. The children stood silently around, waiting to see what father would do, and I saw by their faces that they were horror-struck, for that lamp had been the subject of too much talk and wonder to be smashed without creating a sensation.

As for me, I felt so frightened, so confused and sorry that I couldn't speak. But upon glancing again at father I saw the angry look die out of his eyes, and one of tenderest pity take its place. I doubt not that he saw the same look on my face then that I saw in my child's face to-day. In a minute he had lifted me in his arms and was hugging me close to his breast. Then he whispered, oh, so kindly, I can hear his voice now:

"Never mind, little daughter, we all know 'twas an accident, but I hope you will take the small lamp when you go down to the cellar again."

Oh! what a revulsion of feeling I experienced! It was such a surprise to me that I was suddenly overwhelmed with feelings of love and gratitude, and burying my face in his whiskers, I sobbed as if my heart were breaking. No punishment could have affected me half so much, and nothing can ever efface the memory of it from my mind.

How I loved my father to-day, as the sight of my own little girl's face brought all so freshly before me! Will she love me as dearly, I wonder, twenty years or more from now, because, moved by the God-given impulse that stirred my father's heart in that long ago time, I was able to press the little frightened thing to my heart and tell her kindly that I knew she didn't mean to spill the gravy, and that I knew she would be more careful another time? Will she be helped by it, when she is a mother, as I have been helped to-day? Oh! how impossible for parents to estimate the effect of these seemingly little ever's!

If it had taken as long for this to pass through my mind as it has for me to tell it, my dinner would surely have been cold, and my guests tired of waiting. But it was all done in a twinkling, and, buoyed up with a new and sudden strength, I quickly wiped off the soiled cloth, spread a thickly folded clean one over the place, and called my company to dinner. Strange to say, the awe I had been feeling for my guests was gone. I felt easy and tranquil, and such a remarkable spirit of happiness and sociality prevailed, and everything passed off so smoothly, that I couldn't help feeling as if unseen hands and an unseen presence had helped me through it all.

AN EXTEMPORIZED MARRIAGE.

The magnificent extravagance of the late Khedive is well exemplified in the small palace he built for the Empress Eugenie, and which has never been occupied since. Here, too, an instance of thorough Oriental arbitrariness occurred. The Empress, while thanking the Khedive for the magnificent reception he had given her, happened to say that the only thing she had not seen was an Arab marriage.

"Indeed," said the Khedive, "this shall soon be remedied."

So he sent for his A.D.C., gave him one of his Circassian slaves from the harem, presented him with a large dowry, and told the astonished

official that everything was to be ready in two days.

Accordingly, on the second day there was a grand marriage *a l'Arabe*. The Empress was greatly pleased, and the A.D.C., a man far more European than Egyptian, and who spoke several European languages splendidly, found himself indissolubly attached to a Mahomedan wife, while all along it had been the dream of his life to marry a European lady, one educated like himself, and with whom he could associate. But he knew he dared not refuse, and so an accident settled his whole future life.—*Three Months in the Soudan.*

EVERY YEAR.

The spring has less of brightness,
Every year;
The snow a ghastlier whiteness,
Every year;
Nor do summer flowers quicken,
As they once did, for we sicken
Every year.

It is growing darker, colder,
Every year,
As the heart and soul grow older,
Every year,
I care not now for dancing,
Nor for eyes with passion glancing,
Love is less and less entrancing,
Every year.

Of the love and sorrows blended,
Every year;
Of the ties of friendship ended,
Every year;
Of the ties that still might bind me,
Until Time to Death resigned me,
My infirmities remind me,
Every year.

Oh, how sad to look before me,
Every year;
While the clouds grow darker o'er me,
Every year;
When we see the blossoms faded,
That to bloom we might have aided,
And immortal garlands braided,
Every year.

To the past no more dead faces,
Every year;
Come no new ones in their places,
Every year;
You can win no new affection,
You have only recollection,
Deeper sorrow and dejection,
Every year.

Thank God! No clouds are shifting,
Every year;
O'er the land to which we're drifting,
Every year;
No losses there will grieve us,
Nor loving faces leave us,
Nor death of friends bereave us,
Every year. —*Albert Pike.*

A LITTLE ELBOW ROOM.

Good friends, don't crowd so very tight;
There's room enough for two,
Keep in your mind that I've the right
To live as well as you.
You rich and strong, I poor and weak,
But think you I presume
When only this poor boon I seek—
A little elbow room?

'Tis such as you, the rich and strong,
If you had but a will,
Could give the weak a lift along,
And help him up the hill;
But no—you jostle, crowd and drive;
You storm, you fret, you fume;
Are you the only man alive
In want of elbow room.

When o'er you see amid the throng,
A fellow toiler slip,
Just give him as you pass along,
A brave and kindly grip.
Let noble deeds, though poor you be,
Your path in life illumine;
And with true Christian charity,
Give others elbow room.

I'm struggling on with might and main—
An altered, better man—
Grown wise from many a bygone pain,
And many a broken plan.
Though bruised by many a luckless fall,
And blinded by the gloom,
I'll up and I'll redeem it all,
But give me elbow room.

THE RURAL CANADIAN is the best agricultural paper in Canada. Only \$1 a year.

SUDDEN FORTUNES.

People who are willing to accumulate wealth by the slow progress of adding dollar to dollar, through strict economy and painstaking industry, are generally considered slow by that class of dashing financiers who boast of a great deal of push and energy, and possess very little real foresight and less honesty. These enterprising seekers after riches think, or profess to think, a fortune of little value that is not obtained by a lucky turn in speculation, or by some enterprise that either makes or breaks its projector in short time. But if riches are desirable at all, it certainly is desirable that those who have once attained them, and become accustomed to the style of living which generally accompanies wealth, should retain them. In general it is better not to have been rich at all than to have been rich and afterwards to be plunged into poverty. It is on this point that the aspirant after sudden riches generally wrecks himself. The papers have been chronicling of late the case of the man who, eleven years ago, suddenly acquired a half-million of dollars, and whose household goods have just been sold by the sheriff to satisfy a demand for rent. The story of Coal Oil Johnnie has become familiar in every household in the land. People conversant with oil country life can point to the hundreds of instances of a like nature within their own knowledge. The fortune that falls into a lap unprepared for it is shaken out nearly as quickly as it comes. So certainly do prodigal expenditure and reckless business adventures follow the fortune made rapidly, that people with gray heads and any considerable worldly experience never expect to see a sudden fortune last two decades. If nobody was injured by the sudden acquisition of riches but their possessors, they might be left to buffet the waves of adversity which are certain to follow in the wake of easily-gotten wealth with what strength and fortitude they could summon. But the effect of these suddenly-acquired fortunes on the young men who only see the glitter and pleasure which present riches bring is bad, and only bad. They want to get rich without going through the long apprenticeship to hard work and small pay which their more patient fathers have gone through. They see the sky-rocket fortunes in all their blaze and glory, and without waiting to see the appendix of the falling stick which is sure to follow, they are tempted to despise hard work and slow gains, and rush into the vortex of speculation and risky enterprise, in hopes of reaching the haven of riches by the short route. Only a few will succeed, and they will be worse off before they die than if they had never succeeded. It is useless to argue that there is no necessity for men who have been fortunate to lose their heads and their fortune in so short a time. Whether a necessity or not they do it, and the young man who thinks that he can do better in this respect than those who have gone before him only betrays his lack of experience and knowledge of human nature. As the tree that defies the storm and blasts of centuries is of slow growth, so the fortune that stays generally comes by a process of slow accumulation that begets the prudence and self-denial necessary to its proper management and preservation.

YOUNG MEN! READ THIS.

THE VOLTAIC BELT CO., of Marshall, Michigan, offer to send their celebrated ELECTRO-VOLTAIC BELT and other ELECTRO-APPLIANCES on trial for thirty days, to men (young or old, afflicted with nervous debility, loss of vitality and manhood, and all kindred troubles. Also for rheumatism, neuralgia, paralysis, and many other diseases. Complete restoration to health, vigour and manhood guaranteed. No risk is incurred, as thirty day's trial is allowed. Write them at once for illustrated pamphlet free.

MOTHER'S LAST REQUEST.

1. My moth - er lay up - on her bed, And weeping friends stood by, Tho
 2. The day your fath - er sailed, 'twas then 'These words you heard him say: 'My
 3. My jour - ney here is al - most done, Life's troubles near - ly o'er, I'll

col - or from her cheeks had fled, Tho end was draw - ing nigh; Sho
 boy, or don't leave your er moth - er when Her hair is turn - ing gray; Since
 meet your fath - er soon, my son, To part from him no more; I

clasped me fond - ly to her breast, And said, "My dar - ling son, Hear
 then you've been my pride and joy, So man - ly, brave and true; Then
 feel death's dew up - on my brow, Faro well, my boy and so true, Ro -

now your moth - er's last re - quest, Ere her life's sands have run; Hear
 don't for - get, my dar - ling boy, The words I speak to you; Then
 ceive your moth - er's bless - ing now, And keep my words in view; Ro -

ad lib.
 now your moth - er's last re - quest, Ere her life's sands have run.
 don't for - get, my dar - ling boy, The words I speak to you.
 ceive your moth - er's bless - ing now, And keep my words in view."

colla voce.

YOUNG CANADA.

BE KIND TO EACH OTHER.

Oh, be kind to each other !
For little you know
How soon ye may weep
The sad tears of woe,
For a brother, a sister, a friend loved and dear,
Reposing in stillness on death's sable bier.

Be kind to each other !
For little you know
How soon ye may weep
O'er a desolate home,
Or yearn for the forms that have passed away
To dwell in the light of a happier day.

Be kind to each other !
And strive day by day
To render some kindness
To soften life's way.
And remember that friends the last ones should be
To sneer at the faults in each other they see.

Be kind to each other !
For short is the span ;
We must crowd in the compass
All the good acts we can.
Each hour should recall, as it passes away,
Some being made glad by love's kindly sway.

ROBIN AND ROBINET.

All the day long, all the day long,
Robin sings in the tree ;
His tireless throat is full of song
And his song is full of glee.
He knows there is a listening ear
That catches every note,
And eyes that through the branches peer
To watch his swelling throat.

Up in the tree, up in the tree,
Robinet sits on her nest ;
She feel the lives, begun to be,
Throbbing beneath her breast.
The shady boughs roof out the sun,
Her wings roof out the storm,
And she spreads a coverlet of down
To keep her hatchlings warm.

Hour by hour, hour by hour,
She broods in patience there,
And thinks there is no leafy bower
With hers that can compare.
She thinks her Robin's song the best
Through all the woodland heard ;
That his dear breast is the reddest breast,
And Robin the sweetest bird.

A VERY SMALL LION.

In Africa deep pits are often made by human hunters to capture game, and among the insects we find the ant-lion (*Myrmoleon*) adopting a similar ruse. Its eggs are laid in sandy places, and when the young ant-lions appear they have no wings, and are flat little creatures with immense jaws. As soon as born, the curious larvæ proceed to work. Each young ant-lion selects a soft place in the sand, and by turning itself around and around, it traces an exterior circle ; and by continuing the spiral motion, and gradually retreating to the centre, it marks out and forms a cavity having spirals like those of a snail shell. Next, these are smoothed down by an ingenious process. If a pebble rolls in, or is found in the slope, the ant-lion places it upon his head, and with a sudden jerk sends it far out of the pit. But sometimes pebbles are found that are too heavy to be thrown out in this way, and then another plan is adopted. The pebble is carefully rolled upon the flat back of the ant-lion, which starts up the incline with its tail high in air, so that the load is kept upon a level, and finally deposited upon the outside. If the pebble is round many attempts have to be made. The pit completed is seen to be a circular or conical depression, at the bottom of which the wily hunter conceals himself, only his jaws and many eyes being visible ; and here it awaits its prey, that sooner or later comes tumbling in. Ants that happen to be off on a foraging journey are the most frequent victims. The ant comes running along rapidly, and is over the edge of the pit before he

knows it, the treacherous sand giving way and precipitating him down toward the concealed lion. A moment more and two (to him) enormous jaws open, and the ant quickly disappears from sight forever. Sometimes, instead of tumbling down into the pit, the ant obtains a foothold and almost escapes ; but in such a case the ant-lion throws aside all concealment, rushes out, and shovels sand upon its struggling victim, and by successive jerks bombards it with such a fusillade of sand, that, beaten and confused, it rolls down into the open jaws of the cruel hunter. For two years the ant-lion carries on its predatory warfare, gradually growing larger and enlarging its pit, until finally it is ready to change into a chrysalis. It then envelops itself into a round ball of sand, cemented together by fine silken cords. In this cocoon it lives for about three weeks, when it emerges a perfect four-winged insect resembling the dragon-fly.—*From Animal Traps and Trappers, in St. Nicholas.*

A BABY ESQUIMAUX SHARP-SHOOTER.

One of the first toys that a little Esquimaux has is a small bow of whalebone or light wood ; and sitting on the end of the snow bed he shoots his toy arrows, under the direction of his father or mother or some one who cares to play with him, at something on the other side of the snow house. This is usually a small piece of boiled meat, of which he is very fond, stuck in a crack between the snow-blocks ; and if he hits it, he is entitled to eat it as a reward, although the little fellow seldom needs such encouragement to stimulate him in his plays, so lonesome and long are the dreary winter days in which he lives buried beneath the snow.

These toy arrows are pointed with pins ; but he is also furnished with blunt arrows, and whenever some inquisitive dog pokes his head in the igloo door, looking around for a stray piece of meat or blubber to steal, the little Esquimaux, if he shoots straight, will hit him upon the nose or head with one of the blunt arrows, and the dog will beat a dasty retreat. In this sense, the little Esquimaux boy has plenty of targets to shoot at, for the igloo door is nearly always filled with the heads of two or three dogs watching the baby's mother closely ; and if she turns her head or back for a moment, they will make a rush to steal something, and to get out as soon as possible before she can pound them on the head.

In these exciting raids of a half-dozen hungry dogs, the little marksman is liable to get by all odds, the worst of the encounter. He is too small to be noticed, and the first big dog that rushes by him knocks him over ; the next probably rolls him off the bed to the floor ; another upsets the lamps full of oil on him ; and while he is reeking with oil, another big dog, taking him for a sealskin full of blubber, tries to drag him out, when his mother happens to rescue him after she has accidentally pummeled him two or three times with the club with which she is striking at the dog ; and if it were not for his hideous yelling and crying, one would hardly know what he is, so covered is he with dirt, grease and snow. Thus the dogs occasionally have their revenge on the young sharp-shooter.—*From The Children of the Cold, in St. Nicholas.*

HOW SILK IS MADE.

Do you ever think, children, when your pretty ribbons and sashes are tied on, and you look at them admiringly, that the glossy beautiful dress is made by a worm? Some of you have seen silk worms, but many do not know what an interesting history their little life makes.

Last winter there was sent to me a tiny package of what looked like little gray seeds or beads. I had to keep them very cold until the mulberry leaves were well grown. Then I put the seeds in a warm place. In a day or two more there were myriads of tiny little creatures crawling out from seeds or eggs. At once they began to eat the leaves of the mulberry. Day after day they ate and grew, until they were as large as my little little finger, and longer. They ate so much that we were kept busy feeding them. They would seize a leaf and leave nothing but the veins in a few moments. If you ever saw a skeleton bouquet, you can imagine how they left the leaves.

But one morning they did not seem so hungry. They wandered about, and climbed up the bundles of straw I had set for them. In a little while many of them began to spin the most beautiful silken thread, very much as a spider does. Back and forth, over and over in loops like a figure 8, went their queer "hooded" heads. By-and-bye each one could be seen inside a beautiful silken veil, or shell, about the size of a large peanut. The worm continued to spin until the veil was too thick for us to see through ; but we could hear his little "click, click, click," as he worked. The worms have to be killed in the case. If they are allowed to live, they will break the delicate threads.

We do not kill them all, however. I wish you could have seen the room where we gathered the cocoons, which is the proper name for the peanut-shaped home of the silk-worm. All along the ceiling, behind the window curtain, on papa's desk, in baby's rubber—which she forgot to put away behind the pictures—on the cord, under the broom, on the floor, around the door-knobs—cocoons, cocoons everywhere ; countless numbers were also hung like pretty bird's eggs, in the straws. From these, after a few days, came beautiful white moths, not at all like the ugly worms.

From the cocoons in which we killed the worms we reeled the delicate threads from which all our silk is made. Is it not indeed a curious story?

HOW TO TRAIN A DOG.

Mr. E. Walter gives the following points on training a dog :

1st. Patience. Treat your pup kindly ; don't whip or scold him. He must learn to like you, and to know who his master is (and he must have but one), before you undertake to train him.

2nd. In training a pup always use the same words, "speak Bruno," "speak Bruno," or "bring the cows, Bruno," not, "speak Bruno," "speak sir, I tell you." Always repeat the same words.

3rd. Train him to speak for his supper. This can be done by having something in your hand for him to eat.

Say speak (name) and imitate the bark of a dog ; you will soon see him watching you very closely ; at the first offer of a bark give him what you have for him. After you have taught this one lesson well you will have no trouble to train him to anything you like. If you are compelled to whip your dog for disobedience after he has age, mind, and have him make up with you before you let him go ; if you do not your dog is ruined. Don't expect an old head on young shoulders ; have patience, give your pup time, and our word for it, you will succeed and feel well paid for your trouble in the end.

WHAT a jolly life insects must generally lead ! Think what it must be to lodge in a lily ! Fancy the fun of tucking yourself up for the night in the folds of a rose, rocked to sleep by the summer wind, and when you awake, nothing to do but wash yourself in a perfumed dew-drop, and fall to and eat your bed-clothes !

ALEXANDER BURNS, Maple Lodge Farm, Rockwood, Ont., breeder of Short horn Cattle. Young stock for sale.

JOHN JACKSON, Woodside Farm, Abingdon, Ont., importer and breeder of Southdown sheep, Gold Medal Flock at Ottawa, and 115 prizes at the leading fairs in 1891, also Short horns and Berkshire stock for sale.

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

VIRGINIA FARMS VERY CHEAP. Climate mild - taxes low - health perfect. Schools and Churches convenient. Send stamp for Catalogue. C. D. Epps, Nottoway, C. H. Va.

W. S. HAWKSHAW, Glenworth, P.O. breed-er of Short-horn Cattle and full bred Shropshire Sheep

W. M. J. SMITH, Angus, Ont., breeder of Jersey Cattle. Young stock for sale. Also high-class Plymouth Rock and White Leghorn Fowls. Eggs (in season), \$1.20 per setting of thirteen.

FOR SALE - Twenty Colonies of Italian and Hybrid Hives mostly pure Italians, in Jones hives, for which I will take \$7.00 a colony, delivered on board Cars at Steaford. WELLINGTON SAUNDERS, Steaford, Ont.

VIRGINIA FARMS VERY CHEAP. Climate mild - taxes low - health perfect. Schools and Churches convenient. Send stamp for Catalogue. C. D. Epps, Nottoway, C. H. Va.

FIRST-CLASS DELAWARE FARM for sale 1 1/2 miles from town of Farmington, on Delaware R. R., 20 acres high state of cultivation, 75 bushels corn, 30 bushels of wheat per acre, 25 acres in timothy and clover, 62 acres in grain, 20 peach trees, apples, pears, cherries and grapes, two-storey dwelling, modern finish out-buildings, three tenant houses, healthy location, school and church convenient. Will be sold at a bargain, less than cost of building, Address AMOS COLE, Harrington, Delaware.

YOUNG MEN - Learn Telegraphy or Short Hand Situations for sale. Send for terms. Com and R. H. Tel. College, Ann Arbor, Mich.

\$65 A MONTH AND BOARD for a live Young Man or Ladies in each County. Address F. W. WRIGHT & Co., Philadelphia or Chicago.

BLUBERRY Full history of this valuable fruit with a beautiful cut of the fruit FREE Please send your address on a postal card. DELOSTAPLES, West Sebeva, Ionia County Mich.

A PRIZE. Send six cents for postage and receive free, a costly box of goods which will help you in this world. All of either sex succeed from first hour. The broad road to fortune opens before the workers, absolutely sure. At once address, TRUS & Co., Augusta, Maine.

STRAWBERRY PLANTS FOR SALE. Large Stock at Low Prices. Jumbo, Atlantic, Prince Borckes, Cornella, Perry, Henderson Daniel Boone. Send for Price-list. **JAMES LIPPINCOTT, Jr.**, Mount Holly, N. J.

THE PATENT NEST. Eggs, hen and chicks absolutely safe from all enemies. Wearmen and Venison proof \$2.00 per dozen. Circulars. **Wolcott POULTRY SUPPLY Co.**, Wolcott, Ind.

BEEES FOR SALE! I will sell strong stocks of

ITALIAN BEEES Transferred to ANY HIVE to suit purchasers at **\$10 EACH**, Delivered on board the cars here. **S. CORNEILL**.

THE NOVELTY Rug Machine (Pat. March 6th, 1892.) Makes Rugs, Tildes, Hoeds, Mittens, Door Mats, etc. With ease and rapidity. Price only \$1. Single machines, with full directions, sent by mail on receipt of price. Agents wanted. Apply for circulars to R. W. Ross, P.O. Box 541, Sole Manufacturer, Ontario, Ont. Also dealer in Rug Patterns.

Narrow Escape.

* * * HOCHSTETIN, June 1, 1892. "Ten Years ago I was attacked with the most intense and deadly pains in my back and - *Kidneys.*" "Extending to the end of my toes and to my brain!" "Which made me delirious!" "From agony!!!!" "It took three men to hold me on my bed at times!" "The Doctors tried in vain to relieve me, but to no purpose." *Morphine and other opiates!* 2/12 "Had no effect!" "After two months I was given up to die!!!!" "When my wife heard a neighbour tell what Hop Bitters had done for her, she at once got and gave me some. The first dose eased my brain and seemed to go hunting through my system for the pain."

The second dose eased me so much that I slept two hours, something I had not done for six months. Before I had used five bottles, I was well and at work as hard as any man could, for over three weeks, but I worked too hard for my strength and taking a hard cold. I was taken with the most acute and painful rheumatism all through my system that ever was known. "I called the doctors again, and after several weeks they left me a cripple on crutches for life, as they said. I met a friend and told him my case, and he said Hop Bitters had cured him and would cure me. I pooled at him, but he was so earnest I was induced to use them again. In less than four weeks I threw away my crutches and I went to work lightly and kept on using the bitters for five weeks, until I became as well as any man living, and have been so for six years since."

It has also cured my wife, who had been sick for years, and has kept her and my children well and healthy with from two to three bottles per year. There is no need to be sick at all if these bitters are used. J. J. BRAX. Ex-Superintendent

"That poor invalid wife, Sister, Mother, "Or daughter!!!!" "Can be made the picture of health!" "with a few bottles of Hop Bitters!" "None genuine without a bunch of green Hoops on the white label. Shun all the vile, poisonous stuff with "Hop" or "Hops" in their name."

A SWEET AN' MONEY I-Dr. Low's Pleasant Worm Syrup, yet sure to destroy and expel worms. NEVER FAILS. 10/12

M. PATTERSON, Druggist, Almonte, Ontario, writes, "I have sold WINTAR'S BALM OF WILD CHERRY for over twelve years, and have found it to be the most reliable preparation for Coughs, Colds, &c. I have never known it to fail, and do not hesitate to recommend it before all other preparations of the same class."

WM. JOHNSTON, Smith's Falls, Ont., says he has sold WINTAR'S BALM for nineteen years, and it gives good satisfaction to his customers.

W. T. BARKEET, Druggist, Trenton, Ont., writes, "Mrs. John Kirk, the wife of a farmer living about ten miles from this town, in the rear of the township of Murray, has cured herself of a cold which threatened consumption, by the use of WINTAR'S BALM OF WILD CHERRY."

USE GOLD SEAL Baking Powder. ABSOLUTELY PURE. Ladies who are particular about their baking must use it in preference to any other.

ASK YOUR GROCER FOR IT!

AGENTS WANTED in every city, town and village to sell "VOICES FROM THE ORIENT." Apply to Rox 17, Brockville, Ont.

IT CAN DO NO HARM to try a second course of Pears' Soap, before your child is bitten, scratched or frost-bitten.

PROF. LOW'S SULPHUR SOAP is a delightful toilet luxury as well as a good preservative for white dresses.

Is This Possible!

Report comes that General Grant's improved condition is due to the fact that he is using a "simple vegetable preparation" forwarded by one of our consuls from South America, and sent him by the Surgeon General! Is this possible! By an "unauthorized" remedy? Shocking! And yet, if this "simple vegetable preparation" were owned and advertised by any one as a specific for this terrible disease, certainly the Surgeon General would commend it, nor would bigoted physicians prescribe it!

Nevertheless, it is a fact that many of the best proprietary medicines of the day, as the late Dr. J. G. Holland stated in *Scribner's Monthly*, were more successful than many physicians, and most of them, it should be remembered, were at first discovered or used in actual medical practice. When, however, any shrewd persons, knowing of their virtue and foreseeing their popularity, secured and advertised them, then, in the opinion of the bigoted, all virtue went out of them!

Isn't this absurd!

We believe that a remedy, if properly made, is just as effective when put up, advertised and sold in bulk, as when doled out to patients at enormous expense by their physicians.

Why not?

If General Grant is getting better through a simple unauthorized vegetable preparation where is the vaunted exclusive skill of the medical profession?

Appropos of the suspension of some very prominent members by the Medical and Chirurgical Faculty of Maryland, for endorsing advertised remedies, the *Baltimore American* (Apr. 30, 1892) says that "when a patient inquires good on year after year widening its circle of believers, it is a pretty fair evidence that there is merit in it. The regular doctor may ignore it, and expel any of their members who use it, but when they do so their action looks more like envy against a successful remedy than a true desire to protect the public." The failure in the Garlic and Gout case, the *American* thinks, and properly has knocked professional pretensions higher than a kite.

But this is not a singular instance of unprofessional power over incurable diseases. That "simple vegetable preparation," now everywhere known as *Wagner's Safe Cure*, was once an authorized medical profession for the cure of kidney and liver disorders, malaria, general debility, spring feebleness, female irregularities, etc., by many leading physicians, but when the formula was fully perfected, and the medicine was put up in bulk and advertised so that every sufferer might know of it and treat himself, then the profession turned upon it and let their patients die rather than to use it!

This is certainly a strange proceeding, but it is on a level with all the rules and regulations of a code which has gone so far as to forbid a physician displaying beyond a certain size his name and profession upon his sign!

But the world moves, and merit wins the fight!

WHAT IS DYSPEPSIA? Among the many symptoms of Dyspepsia or Indigestion the most prominent are. Variable appetite, faint, gnawing feeling at the pit of the stomach, with unsatisfied craving for food; heartburn, feeling of weight and wind in the stomach, bad breath, bad taste in the mouth, low spirits, general prostration, headache and constipation. There is no form of disease more prevalent than Dyspepsia, and none so peculiar to the high-living and rapid-eating American people. Alcohol and tobacco produce dyspepsia, also bad air, rapid eating, etc. Burdock Blood Bitters will cure the worst case, by regulating the bowels and toning up the digestive organs. Sold everywhere.

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PUMP CO'Y

(LIMITED)

TORONTO, ONT.




SEVENTEEN SIZES
Geared Windmills
From 1 to 40 h. p.

For Pumping Water run-ning Grain Crushers, Straw Cutters, Root Pulpers, or any other machinery up to a 49 h. p. grist mill

PUMPS.
Iron and wood, Force or Lift. Deep well pumps a specialty.




IX L FEED MILL
Guaranteed to grind from 10 to 20 bushels per hour according to size. These mills are the most durable, perfect and cheapest Iron Feed Mill yet invented.




TANKS
From the smallest up to 2,255 bbls.

Haying Tools.
A full line of the Best.

PIPE AND PIPE FITTINGS.
In fact a full line of Water Supply Material.

Send us your address on a post card and we will send you 104-page illustrated catalogue free.

The Great Acme Penetratix



Positively STUMPS!!!

No crude petroleum sulphur, saltpetre or explosions but is a compound which if put in the stump and set fire to will burn it.

ROOTS AND ALL Green or Dry.

Sent \$1.00 for enough Penetratix to burn 12 large or 18 small stumps. Satisfaction guaranteed or money refunded.

Agents wanted.

R. E. MONN,
Donnelstville, Clark County, Ohio

GRANGE SUPPLIES

FOR SALE AT THIS OFFICE.

Applications for Membership, per 100	\$2 50
Blank Duplicates per 100	0 00
Membership or Trade Cards, per 100	0 00
Books of Secretary or Treasurer, each	0 00
Receipts, bound (100 in a book)	0 00
Orders on Treasurer (100 in a book)	0 00
Letter heads, full size, per 100 (Grange or business cards printed on)	1 00
Letter heads, note size, per 100 (Grange or other business cards printed on)	0 75
Envelopes, per 100 (Grange or other business cards printed on)	0 55
(Orders will be received for letter heads, note heads, and envelopes for less than 100)	
Blank Quarterly Reports for Subordinate Granges furnished to Div. Granges at the rate of, per 100	1 00
Blank Deeds (in duplicate), special blank for use of Granges acquiring property or	5 00
Stamp Book free	

AYER'S Sarsaparilla

Is a highly concentrated extract of Sarsaparilla and other blood-purifying roots, combined with Iodide of Potassium and Iron, and is the safest, most reliable, and most economical blood-purifier that can be used. It invariably expels all blood poisons from the system, enriches and renews the blood, and restores its vitalizing power. It is the best known remedy for Scrofula and all Scrofulous Complaints, Erysipelas, Eczema, Ringworm, Blisters, Sores, Bolls, Tumors, and Eruptions of the Skin, as also for all disorders caused by a thin and impoverished, or corrupted, condition of the blood, such as Rheumatism, Neuralgia, Rheumatic Gout, General Debility, and Scrofulous Catarrh.

Inflammatory Rheumatism Cured.

"AYER'S SARSAPARILLA has cured me of the Inflammatory Rheumatism, with which I have suffered for many years."
W. H. MOORE.

Durham, Ia., March 2, 1882.
PREPARED BY
J. C. Ayer & Co., Lowell, Mass.
Sold by all Druggists; \$1, six bottles for \$5.

HUMPHREYS' HOMEOPATHIC VETERINARY SPECIFICS

FOR THE CURE OF ALL DISEASES OF Horses, Cattle, Sheep, Dogs, Hogs, Poultry
FOR 20 years HUMPHREYS' Veterinary Specifics have been used by Farmers, Stock-raisers, Horse R. H., Hippodromes, Enclosures, and others with perfect success.

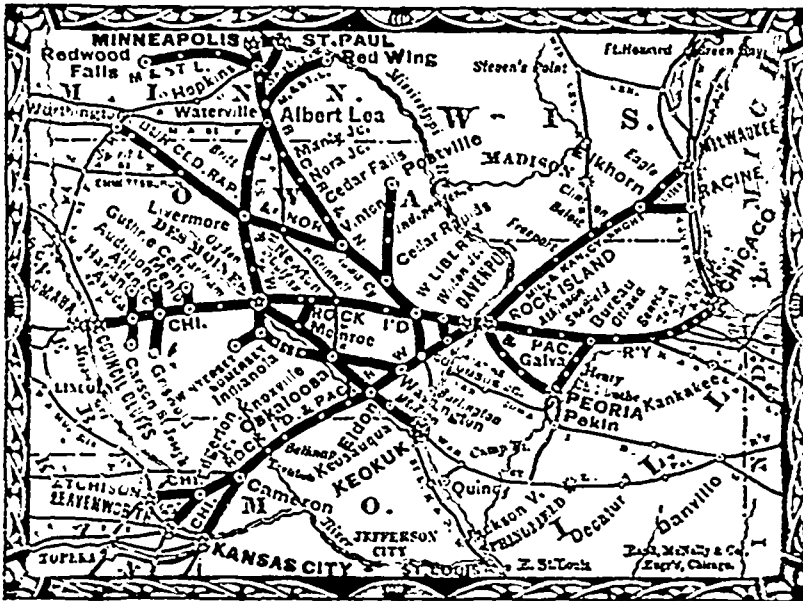
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- 11. Veterinary Care, Mack waist with Veterinary Manual, 10 Cents.
- 12. Medicine and Medicator, \$4.00
- 13. Medicator, 25c.

Humphreys' Veterinary Manual 20 Cents, sent free by mail on receipt of price.
Pamphlets sent free on application.
HUMPHREYS' Homeopathic Med. Co., 700 Fulton Street, New York

An Old Soldier's EXPERIENCE.

"Calvert, Texas, May 3, 1882."
"I wish to express my appreciation of the valuable qualities of Ayer's Cherry Pectoral."
"A cough remedy."
"While with Churchill's army, just before the battle of Vicksburg, I contracted a severe cold, which terminated in a dangerous cough. I found no relief till on our march I came to a country store, where, on asking for some remedy, I was urged to try AYER'S CHERRY PECTORAL."
"I did so, and was rapidly cured. Since then I have kept the PECTORAL constantly by me for family use, and I have found it to be an invaluable remedy for throat and lung troubles."
J. W. WHITMAN.
Thousands of testimonials testify to the prompt cure of all bronchial and lung troubles, by the use of AYER'S CHERRY PECTORAL. Being very palatable, the youngest children take it readily.
PREPARED BY
J. C. Ayer & Co., Lowell, Mass.
Sold by all Druggists.

A MAN WHO IS UNACQUAINTED WITH THE GEOGRAPHY OF THIS COUNTRY, WILL SEE BY EXAMINING THIS MAP, THAT THE



CHICAGO, ROCK ISLAND & PACIFIC R'y.

Being the Great Central Line, affords to travelers its unrivaled geographical position, the shortest and best route between the East, Northeast and Southeast, and the West, Northwest and Southwest. It is literally and strictly true, that its connections are all of the principal lines of road between the Atlantic and the Pacific. By its main line and branches it reaches Chicago, Joliet, Peoria, Ottawa, La Salle, Geneseo, Moline and Rock Island, in Illinois; Davenport, Muscatine, Washington, Keokuk, Knoxville, Oskaloosa, Fairfield, Des Moines, West Liberty, Iowa City, Atlantic, Avoca, Audubon, Harlan, Guthrie Center and Council Bluffs, in Iowa; Callatin, Trenton, Cameron and Kansas City, in Missouri, and Leavenworth and Atchison in Kansas, and the hundreds of cities, villages and towns intermediate. The

"GREAT ROCK ISLAND ROUTE,"

As it is familiarly called, offers to travelers all the advantages and comforts incident to a smooth track, safe bridges, Union Depots at all connecting points. Fast Express Trains, composed of COMMODIOUS, WELL VENTILATED, WELL HEATED, FINELY UPHOLSTERED and ELEGANT DAY COACHES; a line of the MOST MACHINIFICENT HORTON RECLINING CHAIR CARS ever built; PULLMAN'S latest designed and handsomest PALACE SLEEPING CARS, and DINING CARS that are acknowledged by press and people to be the FINEST RUN UPON ANY ROAD IN THE COUNTRY, and in which superior meals are served to travelers at the low rate of SEVENTY-FIVE CENTS EACH.

THREE TRAINS each way between CHICAGO and the MISSOURI RIVER. TWO TRAINS each way between CHICAGO and MINNEAPOLIS and ST. PAUL, via the famous

ALBERT LEA ROUTE.

A New and Direct Line, via Seneca and Kankakee, has recently been opened, between Newport News, Richmond, Cincinnati, Indianapolis and La Fayette, and Council Bluffs, St. Paul, Minneapolis and intermediate points. All Through Passengers carried on Fast Express Trains. For more detailed information, see Maps and Folders, which may be obtained, as well as Tickets, at all principal Ticket Offices in the United States and Canada, or of R. R. CABLE, E. ST. JOHN, Pres't & Con'l Manager, Con'l Tkt't & Pass'r Ag't, CHICAGO.

HOLSTEIN CATTLE!

500 HEAD ON HAND.



Largest and Choicest Herd in this Country Every Animal selected by a Member of the Firm in Person.

Over THIRTY YEARS' RECORD made in this Herd average 12 1/2 lbs. per week. In 1871 our entire herd of mature cows averaged 11 1/2 lbs. In 1882 our entire herd of eight three year old cows averaged 12 1/2 lbs. In 1883 our ten cows in this herd had made records from 12 1/2 to 15 1/2 lbs. each averaging 13 1/2 lbs. For the year ending June, 1884, five mature cows averaged 12 1/2 lbs. each.

Seven heifers of the Netherland family. Five of them 2 years old and two 3 years old, averaged 11 1/2 lbs. each.

Nine cows averaged 17 lbs. 1/2 per week. Eight heifers 3 years old averaged 12 lbs. 1/2 per week. Flaver heifer, 2 years old and younger, averaged 14 lbs. 1/2 per week. The entire original imported Netherland family of six cows, two being but 3 years old, averaged 17 lbs. 6 1/2 per week.

When writing always mention RURAL CANADIAN, CANADIAN FARMER & GRAIN REFRIG.

SMITHS & POWELL,
1 Lakeside Stock Farm, NEAUCUR, N.Y.

A GOOD THING TO HAVE AT HAND!

During the hot weather we cannot be too careful of ourselves, if we would be free from such unpleasant occupations of summer as

Cramps, Chills, Diarrhoea, Dysentery, Cholera Morbus, etc.

It is better than to make ourselves doubly sure by having always at hand a bottle of the old reliable

PERRY DAVIS' PAIN-KILLER, which is a sure cure for the above-named troubles, when taken in time. It has also been a wonderful success in the treatment of that dread epidemic

CHOLERA:

Be warned in time! Do not put off buying what you may have need of at any moment. Sold everywhere, 25c., 50c., and 50c. per bottle.

DISEASE BANISHED Health Gained, Long Life Secured, BY USING

KIDNEY-WORT

It Purifies the Blood, It Cleanses the Liver, Strengthens the Kidneys, It Regulates the Bowels.

TRUTHFUL TESTIMONY.
"I suffered lay and night with kidney troubles, my back was aching all day, I could not get a wink of sleep. Kidney-Wort cured me. I am as well as ever."
FRANK WILSON, Peabody, Mass.

LIVER COMPLAINT.
"I was laid up with liver complaint for over two months. It was my liver and kidney troubles after I had lost all hope."
SARAH BODGES, Williamsport, N. Va.

PILES! PILES!!
"I suffered for 12 years from Piles, as none but those that have been cured can realize. Kidney-Wort quickly cured me."
LYMAN T. ABELL, Georgia, Va.

CONSTIPATION.
"I was a great sufferer from diseased kidneys and was long constipated for years. I am now relieved as well as ever. I use it as my life and it is due to Kidney-Wort."
C. P. BROWN, Westport, N. Y.

RHEUMATISM.
"After suffering for thirty years from Rheumatism and kidney trouble, Kidney-Wort has entirely cured me."
ELBRIDGE McCLELLAN, West Bath, Me.

FEMALE COMPLAINTS.
"Kidney-Wort has cured my wife after two years suffering and weakness, brought on by use of a Sewing Machine."
DR. C. M. SUMMERLIN, Sun Hill, Ga.

FOR THE BLOOD.
"The past year I have used Kidney-Wort more than ever, and with the best results. Take it all in all, it is the most successful remedy I have ever used."
PHILLIP C. RALLON, M. D., Menton, Va.

MALARIA.
"Carrie Malaria for years, with liver disease made me weak for death. A European trip, doctors and medicine did no good, until I used Kidney-Wort—that CURED me."
HENRY WALKER, Little Cal., 40th Reg., N. Y. S., N. Y. Jersey City, N. J.

It acts at the same time on the KIDNEYS, LIVER and BOWELS stimulating them to healthy action and keeping them in perfect order. Sold by all Druggists, Price \$1.00 Liquid - 1/2 qt. The latter can be sent by mail.

WELLS, RICHARDSON & CO.,
BURLINGTON, VERMONT, U. S. A.
Manufact. P. O. and Leadon, England.

KIDNEY-WORT

A MILLION A MONTH THE DIAMOND DYES.

Have become so popular that a million packages a month are sent to 40,000 people. Diamond Dyes are the best. They are used for making lakes, staining wood, coloring fabrics, etc. They are used for coloring paper, and for coloring the hair. Wells, Richardson & Co., Burlington, Vermont.

IMPROVED BUTTER COLOR

USED BY THOUSANDS of the finest Creameries and Dairies BECAUSE it is the Finest, the Purest, the Brightest and the Best.

IT WILL NOT Color the Buttermilk or Turn Rancid. It contains no Acid or Alkali. It is not over-colored, but a new one so prepared as to retain its natural color.

BEWARE of imitations, and of all other inferior factories get rid of and sell the butter.

Sold by Druggists and Country Stores, 25c. and 50c.

MAKES GILT-EDGED BUTTER



LOW-COST HOUSES

Buildings of all kinds at low prices. Plans, estimates, and contracts. Call on J. C. RAY, 111 Broadway, New York.

FLASHING BARGAINS

IN

New Dress Goods:

SEE OUR SILK FINISH SHADED GOODS AT 12 1-2 Cents.

New Black Goods:

SEE OUR BLACK, ALL WOOL FOULLE AND VEILING, AT 25 Cents.

New Black and Coloured Jerseys:

SEE OUR BLACK BRAIDED JERSEYS AT \$1.25.

New Parasols and Sunshades:

SEE OUR LACE COVERED PARASOLS AT 75 Cents, IN ALL COLOURS.

New Plain and Fancy Dress Muslins:

SEE OUR LOVELY MUSLINS AT 12 1-2 Cents.

New Kid, Silk, Lace and Lisle Gloves:

SEE OUR 4 BUTTON KID GLOVES AT 50 Cents AND 4 CLASP AT 75 Cents.

Factory Cottons at Mill Prices:

SEE OUR YARD WIDE FACTORY AT 5 Cents.

White Soft Undressed Cottons:

SEE OUR YARD WIDE STEAM LOOM AT 5 Cents.

New Prints, Gingham and Sateens:

See our Check Scotch Gingham at 12 1-2 Cents.

10/12

J. M. HAMILTON,

184 YONGE STREET, THIRD STORE ABOVE QUEEN STREET, TORONTO.

WHAT IS CATARRH?

[From the Toronto (Canada) "Mail"]

Catarrh is a mucro-purulent discharge caused by the presence and development of the vegetable parasite amoeba in the internal lining membrane of the nose. This parasite is only developed under favorable circumstances, and these are: Morbid state of the blood, as the blighted corpuscle of tubercle, the germ poison of syphilis, mercury, toxoms, from the retention of the effeted matter of the skin, suppressed perspiration, badly ventilated sleeping apartments, and other poisons that are germinated in the blood. These poisons keep the internal lining membrane of the nose in a constant state of irritation, ever ready for the deposit of the seeds of these germs, which spread up the nostrils and down the fauces, or back of the throat, causing ulceration of the throat, up the Eustachian tubes, causing deafness, burrowing in the vocal cords, causing hoarseness, usurping the proper structure of the bronchial tubes, ending in pulmonary consumption and death.

Many attempts have been made to discover a cure for this distressing disease by the use of inhalants and other ingenious devices, but none of these treatments can do a particle of good until the parasites are either destroyed or removed from the mucous tissue.

Some time since a well-known physician of forty years' standing, after much experimenting, succeeded in discovering the necessary combination of ingredients which never fails in absolutely and permanently eradicating this horrible disease, whether standing for one year or forty years. Those who may be suffering from the above disease should, without delay, communicate with the business managers, Messrs. A. H. DIXON & SON, 305 King Street West, Toronto, and get full particulars and treatise free by enclosing stamp.

What the Rev. E. D. Stevenson, B. A., a Clergyman of the London Conference of the Methodist Church of Canada, has to say in regard to A. H. Dixon & Son's New Treatment for Catarrh.

Messrs. A. H. DIXON & SON, OAKLAND, ONTARIO, CANADA, March 27, 1883.
 Dear Sirs,—Yours of the 13th inst. to hand. It seems almost too good to be true that I am cured of Catarrh, but I know that I am. I have had no return of the disease and never felt better in my life. I have tried so many things for catarrh, suffered so much and for so many years, that it is hard for me to realize that I am really better.
 I consider that mine was a very bad case. It was aggravated and chronic, involving the throat as well as the nasal passages, and I thought I would require the three treatments, but feel fully cured by the two sent me, and I am thankful that I was ever induced to send to you.
 You are at liberty to use this letter, stating that I have been cured at two treatments, and I shall gladly recommend your remedy to some of my friends who are sufferers.
 Yours, with many thanks,
 Rev. E. D. STEVENSON.

A New Treatment
 FOR THE
RAPID AND PERMANENT CURE OF
CATARRH
 A. H. DIXON & SON
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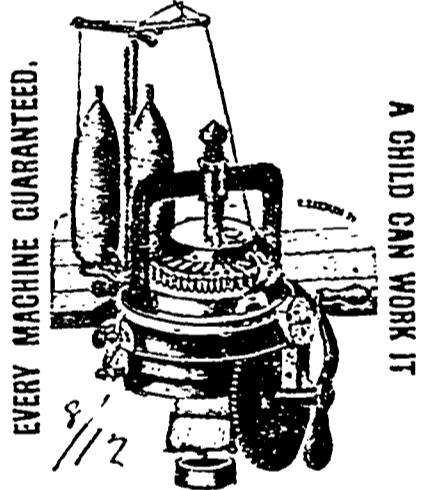
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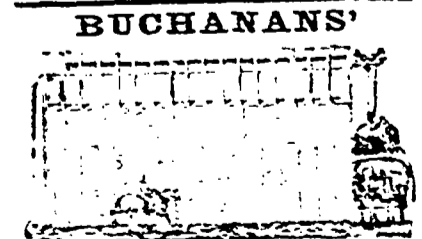
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Simple! Rapid! Easily Worked!



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For unloading hay and all kinds of loose stacks this machine can be used in sheds or stacks or in barns. It can be used to unload either side of barn door without being turned around on the track, thus saving the trouble and annoyance of climbing up to the top of the barn to make the exchange. Agents wanted. Send for circular.
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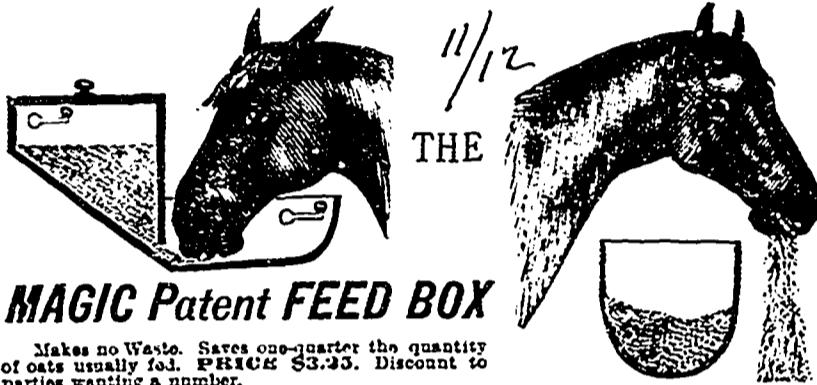
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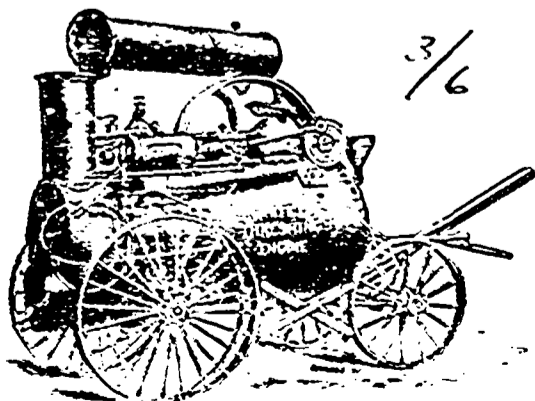
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The Farmer's Favourite.



THE ONLY ENGINE WATERLOUS ENGINE WORKS CO., BRANTFORD, CANADA.

Which stands the Test of time, and still continues more popular than ever. Threshing belts—6, 8 and 10 inch Gandy and four ply rubber kept on stock.

In consequence of the increasing demand for my ENGINES, I have added to my shops and machinery, and shall largely increase the production of Engines for 1895.



The engine may be seen at Van Tassell's feed bridge warehouse, Belleville. As a proof of the popularity of my Threshing Engines, I may state that three or four other firms have commenced to imitate them, but sensible farmers will see that they get a genuine WHITE ENGINE.

I am now making a larger number than ever before for the coming season.

It is licensed by all Insurance Co.'s and has proved itself to be the most durable.

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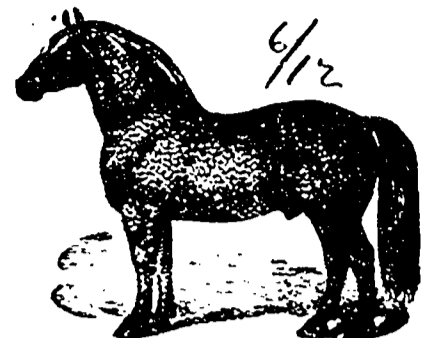
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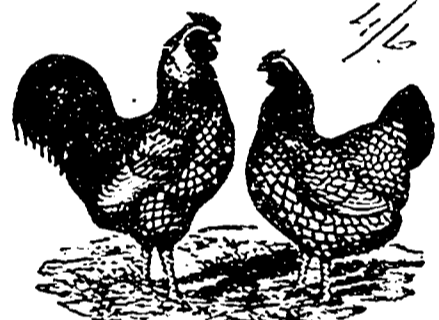
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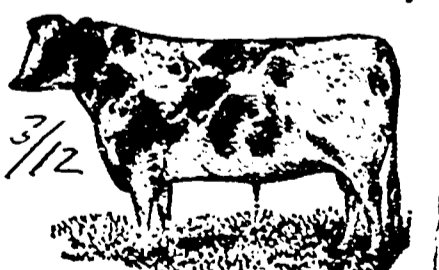
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