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

Vol. VIII, No. 10.
Vol. IV., No. 10—New Series.

Toronto, October, 1885.

\$1.00 per annum, in advance.

**CANADA PERMANENT
Loan & Savings Co.,**
INCORPORATED A.D., 1855.

SUBSCRIBED CAPITAL	\$3,000,000
PAID-UP CAPITAL	2,200,000
RESERVE FUND	100,000
TOTAL ASSETS	5,300,476

Office—Company's Buildings, Toronto Street, Toronto.
The Company has now on hand a large amount of English money which it is prepared to lend on first-class securities at low rates of interest.
Apply to J. HERBERT MASON, Mang. Director.

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

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 1884; also Short-horns and Berkshire stock for sale.

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

WM J SMITH, Angus, Ont., breeder of Jersey Cattle. Young stock for sale. Also high-class Plymouth Rock and White Leg-horn Fowls. Eggs (in season) \$1.50 per setting of thirteen.

THE Standard Fertilizer & Chemical Co. (Limited.)

Manufacture Superphosphates, Artificial Manures and Special Fertilizers, for Field and Garden purposes. For prices and circulars address, R. J. BRODIE, Manager, Smith's Falls, Ont.

FIRST-CLASS DELAWARE FARM for sale 14 miles from town of Farmington, on Delaware R. R., 20 acres high state of cultivation, 75 bushels corn, 33 bushels of wheat per acre, 25 acres in timothy and clover, 63 acres in grain, 700 peach trees, apples, pears, cherries and grapes, two-story dwelling, modern finish out-buildings, three tenant houses; healthy location, school and church convenient. Will be sold at a bargain, less than cost of buildings. Address AMOS COLE, Harrington, Delaware.

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(Pat. March 6th, 1882.)

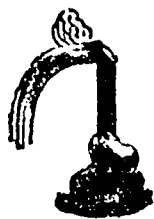
Makes Rugs, Tildies, Hoods, Mittens, Door Mats, etc.

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, Guelph, Ont. Also Dealer in Rug Patterns.

W. S. HAVESHAW, Glasworth, P.O., breeder of Short-horn Cattle and full bred Shropshire Sheep.



AN AUTUMN SCENE.



—THE—
IMPROVED
**Model Washer
and Bleacher**
ONLY WEIGHS 6 LBS.
Can be carried in a
small valise.

Pat. Aug. 5, 1864.
C. W. Dennis, Toronto.

**SATISFACTION GUARANTEED OR
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\$1,000 REWARD FOR ITS SUPERIOR
Washing made light
and easy. The clothes have that pure white-
ness which no other mode of washing can
produce. No rubbing required—no friction to
injure the fabric. A ten-year old girl can do
the washing as well as an older person. To
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reduced to \$3.00, and if not found satisfactory,
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See what *The Baptist* says: "From personal
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in its use we commend it as a simple, sensible,
scientific and successful machine, which suc-
ceeds in doing its work admirably. The price,
\$3.00, places it within the reach of all. It is a
time and labour-saving machine, is substantial
and enduring, and is cheap. From trial in the
household we can testify to its excellence."

See what the *Canada Presbyterian* says about
it: "The Model Washer and Bleacher which
Mr. C. W. Dennis offers to the public has many
and valuable advantages. It is a time and
labour-saving machine, is substantial and en-
during, and is very cheap. From trial in the
household we can testify to its excellence."

Send for circulars. Agents wanted.

C. W. DENNIS,
TORONTO BARGAIN HOUSE,
213 Yonge Street, Toronto.
Please mention this paper.

Our Family Knit-
ting Machine.

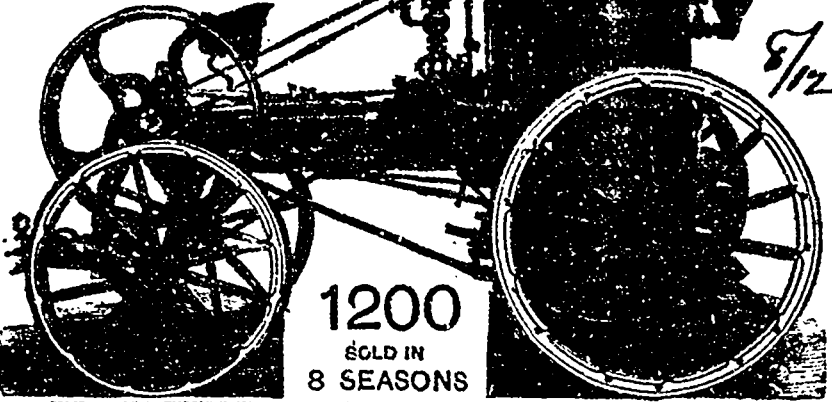


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Creelman Bros.,
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Undershirts, Draw-
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ren's Wear, Hosiery,
Caps, Cuffs, Mitts,
etc., all sizes, can
be made on OUR
FAMILY ALPHINE.
Our Book of Illus-
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all so simple,
six undershirts can be
made in one day, giving
a profit of 75 cents
each. Blind girls can
knit and finish one
doz. pairs of socks per
day, and \$2, \$3 and \$4
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FIRE-PROOF CHAMPION

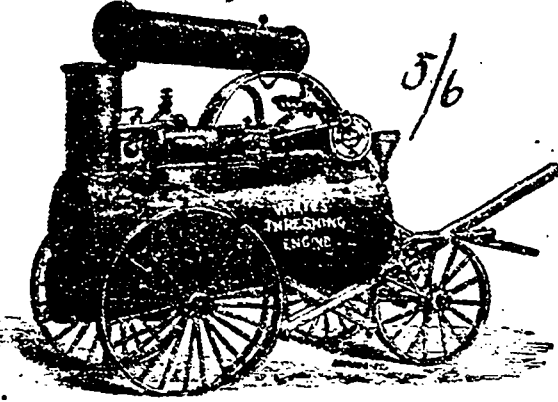
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sold each year than all other makes combined.
COMPLETE THRESHING OUTFITS SUPPLIED
including any of the best Separators manufac-
tured in Canada, at makers' prices.
--BELT FREE WITH FULL OUTFIT--
Come and examine the **CHAMPION**. We
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1200
SOLD IN
8 SEASONS

ENDLESS THRESHING BELTS kept in stock—Gandy, THE BEST Hercules Extra and
Standard qualities of Rubber.—Waterous Engine Works Co., Stratford, Canada.
BRANCH WORKS—Winnipeg, Manitoba. EASTERN AGENT, W. H. Olive—124 St. James St., Montreal.

In consequence of the increasing demand for my ENGINES, I have
added to my shops and machinery, and shall largely increase the pro-
duction of Engines for 1885.



The engines may be seen at Van Tassal's foot 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 Insur-
ance Co.'s and has proved
itself to be the most durable.

The engine for the North-
west is made to burn either
coal, wood or straw.
Farmers, procure a Genu-
ine White Threshing Engine
at the Forest City Machine
Works, London, Ont., Can.

GEORGE WHITE,
Proprietor and Manager.
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Buy only the Genuine.

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1st PRIZE AT
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When tested with other Scales

SCALES FOR ALL PURPOSES.
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Send for Price List and Circulars to
GURNEYS & WARE,
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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!
Mrs. Mary Thompson, of Toronto, was
afflicted with Tape Worm, & feces
which was removed by one bottle of Dr.
Lew's Worm Syrup.

WHAT IS CATARRH?

[From the Toronto (Canada) "Mail"]

Catarrh is a mucopurulent discharge caused
by the presence and development of the vege-
table parasite ameba 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
bilged corpuscle of tubercle, the germ poison
of syphilis, mercury, toxemia, from the reten-
tion of the effete matter of the skin, sup-
pressed perspiration, badly ventilated sleeping
apartments, and other poisons that are germi-
nated 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 mucus tissue.

Some time since a well-known physician of
forty years' standing, after much experiment-
ing, succeeded in discovering the necessary
combination of ingredients which never fails
in absolutely and permanently curing for
this horrible disease, whether standing for
one year or forty years. Those who may be
suffering from the above disease should, with-
out delay, communicate with the business
managers, Messrs. A. H. DIXON & SON,
and treatise free by enclosing stamp.

A New Treatment

**FOR THE
RAPID AND
PERMANENT
CURE OF
CATARRH**

NOSE BRONCHITIS

A. H. DIXON & SON

**NO 305 KING ST.
WEST.** TORONTO-CANADA.

305 King Street West, Toronto, and get full particulars and treatise free by enclosing stamp.

What the Rev. E. B. Stevenson, D. A., a Clergyman of the London Conference of the Methodists
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 17, 1883.
Dear Sirs,—Yours 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. B. STEVENSON.

Rural Canadian and Farm Journal,

WITH WHICH IS INCORPORATED

THE CANADIAN FARMER AND GRANGE RECORD.

Vol. VIII., No. 10.
Vol. IV., No 10.—New Series.

Toronto, October, 1885.

\$1.00 per annum in advance.

RURAL NOTES.

If sheep are salted on tar it will protect them against the fly which lays the egg that makes the maggot in the head. This is a simple remedy, and cheap as it is simple.

In many parts of Ontario this year apples are so scarce that they will hardly supply the home market. In Connecticut, on the other hand, they are so plentiful that farmers can hardly give them away.

If hens are to be kept with a view to profit in winter they should be duly cared for. Comfortable quarters with a southern exposure, and a generous supply of wholesome food are among the prime requisites.

THE seeding of fall wheat has been a little later than usual this year, owing to the rains of early September. But the land was generally in good condition for working, and the young plant looks healthy and vigorous.

A MIXTURE of lime in clay soils has the effect of making them porous and friable; hence by such treatment they are made more workable, and are better fitted for nourishing the life of plants. Clays that harden into solid lumps after a shower of rain are little better than rocks, in so far as the food of plants is concerned.

It is better and easier to improve good land than to bring up poor land, and the farmer who acts on this belief is sure to find the fruit of his labours growing more profitable from year to year. Twenty bushels of wheat per acre is thought to be a good yield; but with a little more manure and a little better tillage year after year the same land may soon be made to yield thirty bushels to the acre.

ONE of the peculiar features of the fall shows is the boom in Holsteins. Three years ago there was hardly one animal of this famous dairy breed in the Province; now there are numbers of large herds, and the opinion is held by many that they will prove to be hardly less valuable for the slaughter-house than for the dairy. The objection to Ayrshires and Jerseys is that their beef qualities are almost nil.

It is believed that the clover seed midge is an importation from European countries, where it is found to infest the large red or cow clover. Great havoc has been caused by it during the last two or three years, and now it extends pretty much all over Ontario. Almost the only good crops of seed clover obtained are from fields which have been pastured until the first or second week of June, and then allowed to grow for a seed crop.

THE fall season has not been very favourable for the maturing of grapes. The crop gave good promise during the summer months; vines were well loaded, the grapes grew finely, and vines and fruit were alike healthy. But the frequent rains of August and September prolonged the growing season, and there is much reason to fear that damage will be done by frost before the fruit is sufficiently matured. In any case, the grapes

are not likely to be of such good quality as they would be had they ripened earlier in the season.

A YEAR of depression is by no means the worst year for a farmer who wants to provide himself with labour-saving implements of good make and quality. In a period of inflation the demand is active, and manufacturers are tempted to put inferior machines on the market. Standard goods will sell any time, but especially at a time when the buyer is not over-anxious, and will stop to consider if he is likely to get his money's worth before making a bargain.

It is generally admitted that for horses and milch cows there is no root grown on the farm of equal value with the carrot. It is healthy and nutritive; keeps the digestive organs in good order; increases the flow of milk and imparts to butter a rich golden colour. Besides, there is perhaps no other root that will yield so much to the acre, and be the season dry or wet the carrot crop seldom fails. The turnip is comparatively a surface ground root, and in a dry season it is certain to suffer.

It is often stated, as illustrating the great vitality of wheat, that grains found in the wrappings of Egyptian mummies have germinated quite readily when planted, and the variety known as Egyptian wheat is reputed to have had its modern origin in that way. But the best botanists of Europe, including the Director of the Royal Gardens at Kew, in England, aver that there is not one authenticated case on record of such wheat growing, even when placed in the most favourable conditions.

THE *Farm Journal* gives a word of excellent advice in terms following. Every farmer should have a stencil plate with his name and residence cut in it, so that he may plainly mark all bags, blankets, robes and boxes with it; also a brand with which he can burn his name into the handles of hoes, shovels and tools. Then if he is blessed with a borrowing neighbour the sight of the name may remind the borrower to return the tool before he has worn it out. At least there will be less danger of his thinking he owns it because he has had it so long that he has forgotten how he came by it.

SOME soils are more likely to receive injury than benefit from fall ploughing, especially such soils as run together when exposed to rain and frost. But clay soils are almost worthless for spring crops unless they are turned up in the fall of the year, and the frost is given a chance to thoroughly pulverize them. Then, too, fall ploughing is one of the best means of destroying the larvæ of insects which burrow in the ground to pass the winter so that they may awake to newness of life in the first warm days of spring. To reach these it is often desirable to plough land that otherwise might be worked as well in spring time.

Writing on the subject of roots, an exchange very naively says that the strongest objection made to their cultivation is the fact that farmers have never tried them. It proceeds to say that the labour of cultivating, harvesting and storing is generally over-estimated, and the stereotyped farmer keeps

on with his hay and corn. Let those who own small farms, and want to make the most of them, try roots, even if it be no more than a quarter of an acre. The great thing is to make a beginning, and to see with one's own eyes the enormous quantity of food the soil will yield in roots. Prepare the ground thoroughly this fall, and manure as heavily as for the largest corn crop.

THERE are many forms of treatment recommended for roup in fowls, but perhaps the best is to kill and cover up the bird affected with it. In the fall of the year late hatched chicks are very subject to this disease, especially where they are exposed to dampness, cold winds, foul quarters and poor feed. Prevention is better than cure, and a removal of the conditions which produce it is the best kind of prevention. See that the hen-house is made warm, clean and dry; that direct draughts are avoided, that the inside of the house is occasionally washed with a strong solution of chloride of lime, and that plenty of good food is given. With such treatment roup is not likely to prove troublesome, and the hens will come safely through the moulting season.

WE sometimes hear it said that it is a mistake to pasture meadow land too much in the fall of the year; that it is better to have the meadows go into winter quarters with a deep and luxuriant aftermath. There is, no doubt a possible danger of grazing too closely, especially if the winter season should prove to be an open one. But, on the other hand, a tangle of grass and clover heads is sure to invite colonies of field mice, and these are likely to do as much injury to the crop as a biting frost. And again, a mass of dead grass on the meadow field will be found to interfere very considerably with the play of the mower, and this is often more than an aggravation to the farmer at a very busy season of the year. On the whole, we think close grazing is to be preferred, and if care is taken to spread the droppings of animals the meadow land will be all the better for it.

MINERAL phosphates are growing in favour every year, and the mines of South Carolina are being worked with great energy to supply manufacturers with the raw material. The phosphate beds in that State were discovered in 1868, their extent being about seventy miles in length by thirty in breadth. The quantity taken out this year will probably be half-a-million tons, which is much larger than for any previous year. In our own Province we also have beds of large extent, and the ore is much richer than the South Carolina ore. The latter yields only fifty to sixty per cent., whereas ours yields seventy-five to ninety per cent. The Ontario ore, too, is very easily mined, and along the Rideau Canal it may be shipped to market with great facility. It is to be hoped that owners of the mines will show sufficient energy to develop them, and take full advantage of their opportunities. In South Carolina the State levies a tax of one dollar a ton on all that is shipped, thus making the mines an important source of revenue; in Ontario the miners enjoy perfect freedom of trade, and in this respect, as well as in the superior quality of the mineral, they have great advantages over their Carolina rivals.

FARM AND FIELD.

FOR THE RURAL CANADIAN.

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

MANY things have been said in the course of these "Walks and Talks" with a view of provoking readers to "talk back," and at last some one has done it. "A Westminster Farmer" steps to the front in defence of turnip-growing. I am glad of it. Let us by all means have the *pros* and *cons* of this and every other operation on the farm. A little discussion tends to make things lively, sets people thinking and elicits truth.

My critic, as is often the case, understates my argument. He says I condemn the practice of raising turnips, "first, because they are no better than a drink of water out of a well." This is not correct. I have never said nor imagined that turnips are *no* better than well water. If my friend will refer to the two articles in which I have spoken of this matter, he will find the statements in both that turnips are ninety per cent. water and ten per cent. solid nutriment. I reasoned that it was cheaper to grow clover for the ten per cent. of solid nutriment, and supply the ninety per cent. of water from a cistern, spring, or creek. The sheep of which "A Westminster Farmer" speaks were fattened by the ten per cent. of nutritious matter supplied by the turnips, and during the process took a great deal more water than they needed. Sheep are small drinkers when left to their own instincts.

Yes, turnips are turnips both in Canada and Great Britain. "If they are water here they are water there also," and they are about nine-tenths water in both countries. But I think it is undeniable that the climate of England and Scotland is better suited to the turnip crop than the climate of this country. It is cooler and more moist. Moreover, the winter being milder in Britain, turnips can be and are largely consumed in the fields where they grew, which saves a great deal of labour. The cartage of the crop from the field to the barn cellar, the trouble of handling, and the hauling of the manure made from the turnips back to the field, are all saved by the common British system. There is also reason to think that, owing to our summer heat, a considerable proportion of ammonia is exhaled into the atmosphere through the porous leaf of the turnip. I believe the turnip plant is a kind of sieve through which ammonia passes out of the soil into the air. I wish we could have some experiments made to test this. Professor Brown says it is not possible to make such experiments, or at least no feasible plan has yet been devised for making them. Many farmers who have grown turnips for a number of years are discontinuing the practice, because, as they say, they cannot tell where the manure goes to. I pit clover against turnips as a cheaper crop, an equally good extirpator of weeds, and a better fertilizer of the land.

A WELLINGTON County weekly paper contains this item: "Two farmers in West Garafraxa and one in West Luther have invested \$875 in washing machine patents." Elsewhere in the same issue appears this timely warning:

Look out for patent right "hay fork" and "washing machine" men. They have been working hard in this county for the past two weeks, and have succeeded in victimizing some unsuspecting farmers. For any sake stick to your farms, and don't imagine you are going to make your fortune by purchasing patent rights. This item is published for the benefit of persons who are liable to allow themselves to be approached by strangers and talked out of their money by

glib-tongued agents of worthless patent rights of which they say "there are millions in it." The best way to do, when any of the mealy-mouthed gentry appear on the premises, is to set the dog on them. Farmers, always take notice of what you are signing your names to. Beware!

In this connection let me pen a cautionary word about endorsement. How many have been greatly embarrassed or utterly ruined by this practice. I visited an old farmer the other day, over eighty years of age, whose evening of life is beclouded and darkened by hopeless debt as the result of endorsing. He has worked hard, cleared up a fine farm, and honestly earned the competence he would have had but for unwisely signing his name to oblige a friend and neighbour. This is only one of many sad cases that have come under my observation. Why should a man risk his little all in this way? Kindness, helpfulness and generosity are duties; but they have their limits, and the supreme law of love only requires that we love our neighbour *as* ourselves. A man is bound to provide *first* for those of his own house. Then let him freely give of what he and those dependent on him can spare. The uncertainty and anxiety arising out of an endorsement large enough to sweep away house and home, form a burden no one is under obligation to carry. "He that hateth suretyship is sure."

MANURE your orchard if you want fruit. You hardly ever see anybody spreading dung in an orchard, unless the intention is to sow grain among the trees, which should never be done when they are large enough to occupy the ground. There is a net-work of roots corresponding with the top-growth of branches and foliage. A full-grown orchard should never be ploughed; but it should be periodically manured. Fruit is an exhaustive crop. You must feed your trees if you want them to bear. I often hear farmers complain of their orchards. They cannot tell what ails the trees. I can. They are starved. "That's what's the matter" with nine-tenths of the orchards all over the country. Even winter-killing often results from poverty of the soil. The trees have not vigour enough to withstand the severity of the weather. Just as a starved man succumbs to exposure and cold more readily than one who is well-fed, so with a starved tree. As I ride around the country, I see orchards hanging out signals of distress and mutely imploring food. They are like a beggar who once confronted a gentleman in the street, but said nothing. He was pinched with hunger, and clad in rags. The gentleman said: "If you want relief why don't you beg for it?" "Sure," said the mendicant, "isn't it begging I am, from the crown of me head to the soles of me feet?"

You have been to the exhibition, Provincial, Toronto Industrial, Guelph Central, Great Northern, County Show, or what not. 'Tis well. But have you learned anything that will enable you to farm better? The right idea of these gatherings is that they are annual schools for the improvement of our agriculture. Is there not danger of their becoming mere places of amusement? Holiday-making and recreation-taking are proper and useful as means of refreshment to mind and body; but there are valuable lessons to be picked up at every exhibition that is worth attending. We should keep eyes and ears open, and when we come across anything novel and useful, "make a note on't," and reduce it to practice.

I THINK the Provincial and Toronto Industrial may be cited as examples of two extremes, the former going to the verge of dullness, and the latter a little too frolicsome. If we could shake

the two together, we should have an exhibition about right. The Provincial did well to exclude the "fakers" and mere catchpenny tricksters. But it might have provided rational entertainment for the crowds of people who were there for a day's outing. One gets tired of inspecting fine stock and studying machinery. A little innocent mirthfulness mixed in enlivens things, and is a welcome relief. But whatever has the gambling element in it, however dexterously concealed, should be rigidly excluded. The electric railway, balloon ascension, Gatling gun, and even "speeding in the ring," with betting prohibited, are samples of harmless diversion, with an admixture of the instructive and scientific. It may be said that people need not spend their money on tomfoolery. But it should not be there to tempt them. There is an implied sanction of the directorate in the presence of any performance on the grounds, and that should be withheld from whatever is unworthy of it. W. F. C.

PLOUGHING ROUND THE FIELD.

Many farmers plough fields year after year by commencing on the outside and ploughing around the fields gradually working toward the centre from all sides, throwing every furrow outward, and ending in dead furrows in the centre. This method of ploughing saves measuring off lands, and the ploughman is not obliged to strike out new lands every little while. He can start in and keep his team going round and round until the field is ploughed. It is the slackest and easiest way to plough in the world—that is for those who are not over particular as to the quality of the work.

And then again, it is the hardest and slowest way to plough a field that I know of. It necessitates an immense amount of turning at corners, and every ploughman knows how much time that absorbs, and how annoying and tiresome to both team and man. If the field is nearly square the increased number of turnings can hardly be estimated. Each round is shorter than the one before it, brings the sides shorter and shorter until the very last, which is all turn. Looking at it in this light, it would be a great saving of time and trouble to lay the fields out into lands of moderate width and drive back and forth lengthwise of the field.

But the matter of time is the least important item in this case. The quality of the work should be the first consideration. Ploughing round a field and throwing the furrows outward year after year is a very bad practice for several reasons. In the first place it throws up a ridge all around the outer edge of the field next the fences. By a slow but steady process the earth of the centre of the field is carried towards the outer sides. From each corner of a square field so ploughed runs a sag or dead furrow where the turning occurs, ending in the centre dead furrow of the field. This amounts to quite a depression in the course of years, and the waterfall all over the field is carried in that direction. Being ridged about on the opposite edge of the field, natural drainage is obstructed.

When fences are moved and fields re-arranged, these unsightly depressions and ridges remain, and can never be removed except by exactly reversing the process by which they were formed.

The only way that a field can be kept in good shape is by ploughing in lands, and never throwing a furrow across the ends. If fences or hedges are in the way so that the plough cannot be driven clear out, plough head lands after the main field has been ploughed. None of the ploughed surface is then tread after ploughing. This in itself is another important item. In ploughing round the field all the turning is upon ploughed land.—Ohio Farmer.

ABOUT THE SUNFLOWER.

Some few weeks ago we were sitting with some "old reliable" farmers, talking over different methods of farming and new crops. The conversation turned to the subject of sunflower culture for stock and poultry feeding, and we concluded to give our readers a few remarks on the subject.

"The seeds of both the common and dwarf sunflower yield an oil little inferior to that of the olive for domestic purposes," says Lawson, so thus at the outset of our researches we come on a valuable use for this plant. In Portugal, we find that the seeds are made into bread, as also into a kind of meal: and here in America they have been roasted and used as a substitute for coffee. The greatest objection to the cultivation of sunflowers is that they require very superior soil and are a most impoverishing crop, particularly the taller growing sort (*Helianthus annuus*), from which circumstance the dwarf species (*Helianthus Indicus*) has been preferred by some cultivators, specially in France, who assert that as its dwarf habit of growth admits of a greater number of plants being grown on a given space, it is not so much inferior to the other in quantity of produce as, from its appearance, one would be led to expect. In addition to the uses above mentioned, some French authors assert that the leaves, either in a green or dried state, form excellent food for cows, and that they are greedily eaten by them. The stems also are valuable for fuel, and indeed are used for that purpose in some vicinities.

Sunflowers are best cultivated in hills, like field corn, but may also be used to fill up odd corners, and in time may attract more attention as a field crop than they do at present.

HARVESTING.

When the stem and discs of the sunflower become withered, and the seeds shining and dark coloured, the plant is ready to be harvested. It may be simply pulled if weak, but out west here those we have seen would better be attacked by an axe, as in tree felling, or a good, heavy, sharp corn-knife will answer the purpose. The discs are afterwards cut off with a sharp knife and the seeds rubbed out.

Lawson says that from thirty to forty bushels of seed on one acre is a fair crop of sunflower. These will yield fifty gallons of oil, the refuse will make 1,500 pounds of oil cake, and the stalks burned into ash will afford one-half ton of potash. Professor Johnston mentions that the seed yields fifteen per cent. of oil.

COMPOSITION.

The analysis of sunflower seed and cake compared with flaxseed meal and cake is as follows:

	Water.	Albumi- noids.	Fats	Carb- Hydr's.	Ash.
Seed.....	8.0	13.0	21.0	7.7	3.0
Cake.....	10.0	31.2	11.0	17.0	10.6
Flaxseed meal.....	9.7	34.2	3.9	29.3	7.3
Flaxseed cake.....	11.7	28.3	9.0	29.0	7.7

In order that our readers may fully comprehend the value of the above analysis and form for themselves a comparison between the two seeds given, we shall explain the uses in feeding of the different component parts mentioned.

Water—Is absolutely necessary as a vehicle of plant food and for carrying on the vital processes.

Albuminoids—Nitrogenous matters which go to form the flesh of animals, also gelatinoids and some of the fat, 100 parts albumen yielding 51.4 of fat. By combustion in the animal body these yield heat and mechanical force, repair waste of nitrogenous tissue and supply in themselves most of the requirements of the animal.

Fats—Go to form fat in the body, but may change into a different kind; they are burned in

respiration to give heat and mechanical force, and thus are "fat formers" and "heat givers"; one of fat equals 2.44 of starch in food value.

Carbohydrates—Include starch, sugar, gum, dextrine, mucilage, etc., and are more immediately used for heat and mechanical work, but if taken in excess they are laid up as fat. They form the largest part of all vegetables.

Ash—The combustible or mineral part of plants or foods, consisting mostly of salts and going to form bone, blood, etc., in the animal.

From the above it will be readily seen that sunflower seed and cake is quite a valuable feeding stuff, deserving of trial by all stockmen.

We shall welcome any experience which our readers can give regarding the cultivation, yield or value as a feeding stuff.—*Farmers' Review*.

HOW TO TAN SHEEPSKINS.

To those who occasionally kill a sheep, we would say remember the following recipe for tanning a sheepskin. They make the best kind of mats for the house or carriage, and a good Cots-wold skin well tanned makes a good cushion for the waggon-seat, and for many uses it is valuable:

"For mats, take two long-wool skins and make a strong sude, using hot water; when it is cold wash the skins in it, carefully squeezing them between the hands to get the dirt out of the wool, then wash the soap out with cold, clear water. Then dissolve alum and salt, each a half pound, with a little hot water, sufficient to cover the skins, and let them soak in it over night for twelve hours; then hang over a pail to drain. When they are well drained, spread or stretch carefully over a board to dry. When a little damp, have one ounce of saltpetre pulverized, and sprinkle on the flesh side of each skin, rubbing in well; then lay the flesh sides together, and hang in the shade for two or three days, turning the under skin uppermost every day until perfectly dry, then scrape the flesh side with a blunt knife to remove any remaining scraps of flesh. Trim off projecting points; rub the flesh side with the hands, and it will be very white and handsome, suitable for a door or carriage mat. They also make good mittens. Lambskins, or even sheepskins, if the wool be trimmed off evenly to a-half or three-fourths of an inch long, make beautiful and warm mittens for ladies or gentlemen, and the girls with a little practice can make them."

IMPROVING SOILS.

In this country there are chiefly two kinds of bad land for the farmer to fight. One is the stiff, wet clay soil. The other is the light, dry, sandy soil. The first bakes and becomes too hard and brick-like for the roots of plants to enter. What the second is like was described a long time ago in the parable of the sower. The seed sprouted and sprang up quickly, but when the sun came it withered the plants, they dried and that was the end of them. The sandy soil dries out quickly, and roots cannot be firmly fixed therein. Of the two bad soils, clay and sand, the sand is the hardest to improve. Rather strangely, however, the remedy is the same in both instances. It is red clover. At least red clover is better than anything else. It should be harvested when in bloom. The second crop should be ploughed under, green, in the fall. Good soil is made up of clay, sand and loam, or decayed vegetable matter. The strong, tough clover roots wedge themselves into the clay and make it loose and friable. On the other hand, the same strong, tough roots compact the loose sand, hold it together and keep moisture from drying out.

DEEP, rich soils and top dressing are the remedies for drought.

HOUSEHOLD HINTS.

As we stated before, dry salt is as good as any material that can be used for preserving eggs. Pack in boxes, turning the boxes twice a week, in order to prevent the yolks from setting to the inner sides of the shells.

It will be a great deal cheaper to buy a few good books for the young folks, and subscribe for a paper or two to please them, than to allow them to corrupt their minds reading the trash, and worse than trash, that is being so widely scattered.

EXCELLENT bronchial troches may be composed as follows: Powdered extract of licorice, sixteen ounces; powdered sugar, twenty-four ounces; cubebs, gum-arabic, of each four ounces; extract of conium, one ounce. Mix, and with sufficient water make troches of suitable size.

A BREAD crumb omelet is excellent if served with roast lamb or veal; one pint of bread crumbs, a large spoonful of parsley, rubbed very fine, half of a tiny onion chopped fine. Beat two eggs light, add a teacupful of milk, a trace of nutmeg and pepper and salt liberally, also a lump of butter the size of a small egg. Mix all together and bake in a slow oven on a buttered pie plate; when light brown turn it out of the plate and serve at once.

A PLAIN junket is made by warming two quarts of fresh milk until very little warmer than when just from the cow; pour the milk into a large ornamental bowl or dish in which it can be brought to the table, and while the milk is warm, stir into it two tablespoonfuls of prepared rennet; stir gently for two minutes, then set away in a cold place. It will soon become a solid, sweet curd. Serve by dipping the curd out in large slices with a small, flat ladle or broad spoon. It may be eaten with rich cream alone, or with cream and powdered sugar.

At a recent lecture delivered in London on "Bad Food and its Detection," it was asserted that the lactometer is useless, and no advantage to the consumer at least. Fat being lighter than water, a rich milk might appear watered by this test and tricks of the milk trade be thus fostered by its use; and, as the importance of purity in milk cannot be overestimated, the fact remains that the only method known by which it can be satisfactorily tested is that of complete analysis. A simple but infallible test for alum in flour was shown by the lecturer. On a portion of adulterated flour being placed in a small quantity of chloroform the flour floats, while the alum or other mineral matter sinks to the bottom; so also, in a similar way, alum in bread may be instantly detected by placing a small piece of the suspected loaf in a solution of dogwood and ammonia—the bread turning blue if any alum be contained in it.

THERE is every indication that for autumn wear the rougher class of materials will be much more worn than the finer cloths that have so long been popular. The majority of these gowns are now made with vests, and when they are of a contrasting colour the effect is very good. Tailor-cut costumes, all of woollen material, are, however, somewhat more elegant than they were in the spring. The latest models are of cashmere, serge, or light cloth, quite plain, and in dark shades of colour, the skirt round, and pleated with a very short draped puff; but the tunic, which is a mere tablier of the same material, draped a little on the left side, is trimmed with a deep border in braid work over a netted ground, embroidered with gold and with a few metallic beads; the short bodice with small basque opens with two revers over a vest covered with braid work; this pattern is very simple, but extremely elegant, and can be made in any colour.

GARDEN AND ORCHARD.

CULTURE OF THE HYACINTH IN POTS.

For securing successive blooms, and for using the Hyacinth in various styles of decoration, this is by far the most important way of cultivating and developing its beauties. At any stage of growth the plants can be removed from their pots and arranged at pleasure, either in flower-baskets or vases. To cultivate the Hyacinth successfully in pots, a free, porous soil is indispensable. The size of the pot must be regulated by the accommodation and requirements of the cultivator; for one bulb a four inch pot will grow the Hyacinth well, but one five or five and a-half inches will do better; for three bulbs a six or seven inch pot will be sufficient (and here we would remark Hyacinths cultivated in groups are much more effective than when grown singly). At the bottom of the pot place over the hole a piece of potsherd and some charcoal, and on this some rough pieces of turfy loam, to insure good drainage, then fill the pots with the prepared soil to within an inch of the top, placing the bulb in the centre; or, if three, at equal distances apart, pressing them well into the soil, and filling up, leaving only the crown of the bulbs uncovered; moderately water and place them on a dry, level bottom of coal-ashes in an open place, and covered over, to the depth of from six to eight inches above the bulbs, with decayed leaves, sand, or old tan-bark, leaving it rather higher in the centre than at the sides, so as to throw off heavy rains; or a few boards, or a tarpaulin will be useful for the same purpose, as the soil in the pots will absorb as much moisture from the ground as the bulbs require. If placed in such a bed from the beginning of September to the middle of October, the bulbs will have a temperature ranging from 50° to 55°, which, in soil not over wet, will promote a healthy vegetation. In from eight to ten weeks the pots will be getting crammed with roots, and before that time it is vain to attempt to force them to produce good flower-stems. The bulbs have been gradually deprived of their moisture the previous summer and now they must be gradually supplied with it through healthy roots to secure a healthy flower-stem early in the season.



When wanted in full bloom by Christmas and the New Year, those pots full of roots and showing the flower-truss through the incipient leaves should be selected, placed at first in a shady part, so that the blanched foliage may not be hurt, and in a few days removed to a forcing-pit where a mild bottom heat can be given to the plunged pots of from 70° to 75°, and a top heat of from 60° to 65°. Here the plants must be gently shaded until the leaves become quite green. The pots, though plunged, should be set upon slates, boards, or anything that will prevent the roots from entering the plunging-medium, whether tan, leaves, etc., etc. The extra bottom heat is a great means of success at this early period. Until moved from the bed, very little watering will be needed. The flower-truss is apt to come too close, the stem not growing long enough at this early period to let the

florets expand; an empty flower-pot placed on the top of the other will tend to remedy this; we prefer, however, funnels of paper, say eight inches in length, placed over the pot. If, after this, the flower-stem should still be too dumpy, give a few degrees more top heat for a few days. Whenever the stem shows the least sign of being too much drawn, so as to leave an excess of room between the individual flowers, gradually lower the temperature in which the plants are placed; when the flower-stem and leaves are all that could be desired, and the flowers are approaching the opening, raise the pots out of the plunging medium, and even keep cooler by more air; now the bulbs will require a free supply of water. After the pots have stood on the surface of the bed for a few days, remove them to the green-house or sitting-room; manure waterings and a rich top dressing will generally keep them in longer luxuriance. To have blooms in February and onwards, little of this extra care is necessary; the chief extra treatment required may be the paper funnel. When the pots are brought from the bed or the cellar, keep shaded until the leaves get green, and then place them on the green-house shelf, or parlour window; in all cases, healthy rooting must precede fine blooming. In the case of those of our readers who have no means of covering up their pots in a bed, or even a cellar in which to place them without covering, the bulbs may be grown in any sitting or dining-room in the same way, requiring only that a damp atmosphere should be kept about them; and as light is not wanted until they are progressing freely, the bulbs when potted will do well in the bottom of a cupboard, if set in damp moss or anything of that kind, and a small portion of the same sprinkled over them; they dislike at first the dry air of a sitting room; if the floor of the cupboard is sprinkled frequently, that will be sufficient; great success depends generally on trifles, and to keep a damp atmosphere about the bulbs at first is far better than deluging the pots with water. This magnificent species of bulbs is obtainable from J. A. Simmers, seed and bulb merchant, Toronto.

FRUIT GARDEN AND ORCHARD.

Cider should only be made from perfectly clean and sound apples, to be good. Insist on cleanliness being practised at every stage of the making. For preserving it, there should first be slow fermentation in a cool place, and after fermentation bung tightly. In a short time the cider will become clear, then rack off into clean barrels.

Cuttings of Currant, Grape, Quince and Goose-berry are easily made by anyone and may be cut and set this month. Make six inches long each; place in lines about four inches apart in trenches, packing the soil firmly against them. Cover with coarse litter, to prevent winter-heaving.

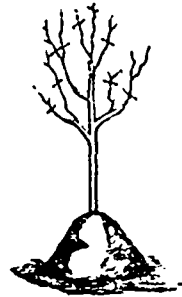
Grapes.—Pick for winter or for wine only after fully ripe; all may not colour at the same time, be patient up to hard frosts. Ripeness is known by the stem turning brown and shrivelling somewhat.

Grapes, unlike some fruits, won't ripen after gathering. Gather in fair weather and between dews, place in shallow drawers in a cool room until assorted and packed.

Marketing.—Pack uniformly, whether in barrels for shipping, or in crates or baskets for the home trade. Strict honesty is the best practice; once let a grower obtain the reputation for "facing" his packages more than they will bear, and he will find difficulty in selling, and he deserves to.

Planting.—One season with another, we prefer

to plant fruit trees, of all but stone fruits, in this month, provided the ground is properly drained. Raspberries and Blackberries, we think, also do better to set now on such land. Whatever planting cannot be done before the 10th of November in Canada had better be deferred until spring. The work may begin as soon as the leaves show maturity by their colour; if they persist in hanging, strip off with the hand.



In planting shorten all the main shoots, somewhat, as shown in the engraving. Have the hole large enough to receive all the roots without bending. Spread them out naturally, bring fine earth between and against all the fibres and other parts, and pack the soil firmly.

In finishing the job, raise a mound of earth against the tree as shown in the cut. This will steady the tree, shed water from and protect the roots. In exposed places a stake should also be provided.

Any trees or plants received too late for fall planting should be buried root and top in earth in some dry spot. Some who prefer spring planting, advocate this course with all the stock to be set out.

Seeds of fruit may easily be saved by washing the pomace of such kinds as are made into cider. Small quantities may be gathered up when hand-paring and quartering is done. Wash clean, dry and keep until planting time in boxes of sand. Peach and other stones, as well as nuts for seeds, should be packed in sand and set out doors to freeze hard during the winter.

Weeds should be kept down with the hoe to the end of the season. Many kinds grow rapidly now, and to kill them will save work next year.

Winter Apples and Pears.—Leave on the trees while growth keeps up, unless freezing weather is expected. All fruit not intended for cider should be hand-picked. Bruises from falls cause rot. Keep wormy fruit from the sound. Store in a cool dry room in heaps for several weeks, in order to dry out somewhat, before consigning to winter quarters. For winter, store in shallow bins that admit of a circulation of air through them.

VEGETABLE GARDEN.

Beets.—Gather and store in a cool cellar after the growth is checked by frost. The quality and flavour will be better retained by packing in sand. If there is a large crop, they may be kept in pits over winter. Locate these in well drained ground, covering with straw and earth, to prevent hard freezing, and sudden changes of temperature.

Brussels Sprouts.—Treat like cauliflower.

Carrots.—Treat as directed for beets.

Cauliflower.—When indications of freezing weather appear, gather those not fully headed, and plant in boxes of soil in a cool cellar. Similarly treated in glass-covered pits will also answer.

Celery grows well now, and will need close attention in earthing up. The early crop may go into trenches for winter.

Chervil.—Treat as directed for parsley.

Chicory, for use as a salad in winter, should be lifted by the end of the month, stored in a cool part of the cellar, and brought into a warm place for growth as wanted.

Digging over.—As the crops are gathered dig over the earth, so that the air and frost may have full effect upon it. By such a course, the larvae of many injurious pests will freeze to death.

THE DAIRY.

BEST TIME FOR DAIRY COWS TO COME IN.

The question of the best time in the year for the cows of a dairy herd to come in is an important one for the dairy farmer. The custom has largely been to have them come in in the spring, about, or a little before, the time of turning to grass; and this custom has been followed because it has come down as a custom, without much inquiry as to whether it is a wise one or not. In other things, where conditions are under control, as in making beef or pork, or selling grain, the farmer studies, so far as his circumstances will permit, the probable state of the market, aiming to dispose of his products at such season of the year as under ordinary conditions they bring the best prices. Dairy products differ somewhat from others in that they are scattered through nearly or quite the entire year, yet in the case of each individual cow there is a period of greatest production after coming in fresh, followed by one of medium production, and this by diminished production, succeeded by that of non-production, during which she goes dry. A dairy herd can be so managed, if desired, as to the time of calving, that these conditions shall exist throughout the entire herd. Applying the principle before stated, that of making the product for the condition of the market, we find that the period of non-production or of smallest production should come in midsummer, for the reason that prices then rule the lowest. We have been at the pains to go over the market reports in our files back to the beginning of 1883, and find our quotations of choice to fancy creamery butter to be as follow on the dates given:

Jan. 4, 1883.....38 at 40c.	July 3, 1881.....18 at 20c.
April 5, 1883.....28 at 31c.	October, 3, 1884...28 at 30c.
July 5, 1883.....21 at 23c.	January 1, 1885...26 at 24c.
October 4, 1883...26 at 29c.	April 2, 1885.....24 at 26c.
January 3, 1884...32 at 36c.	July 1, 1885.....15 at 17c.
April 3, 1884.....31 at 33c.	

It will be seen from the above figures that on January 1, 1885, the price was below that on October 3 preceding. But this is exceptional. In all other cases the price was highest in mid-winter, declined to midsummer, then went up again like a rope suspended at each end and sagging in the middle, the ends representing mid-winter prices, and the point of lowest sag mid-summer prices.

Years ago, when farmers did not take the care of their stock they do now, when the cows were poorly sheltered, if sheltered at all, and fed only upon hay, giving their largest yield on the grass pastures the spring coming, it was probably the wisest plan. But with the shelter and care the dairy cow now has, and the grain food to supplement hay, she gives as large a product in the stable as on the best pasturage, and the natural conclusion would be that she should go dry at that season of the year when her products command the lowest price, which, as we have shown, is in midsummer. This would bring her in in September just when the markets are fairly on the upturn. There are other reasons to be urged in favour of winter dairying. In midsummer the pastures get short and the cows are tormented by the heat and flies which materially shorten the product. The loss from this source would be avoided by having them come in after the heat of summer is over. It would also relieve the dairy farmer largely of the care at the season of the year when other work on the farm is most pressing, while the season of largest product and care comes during the winter when there is little else requiring attention, or that can be done on the farm.

When it is desired to raise a part of the calves there is no trouble with the fall calves. They

get a good start before winter sets in, learn to eat hay and oats, and come out in the spring big, lusty fellows, ready to go to the pasture, and needing no further care.—*Farmers' Review.*

WHY THE BUTTER DOESN'T COME.

1st. Because of some disorganized or unhealthy condition of the cow.

2nd. On account of the unwholesome food and water supplied.

3rd. Want of proper cleanliness in milking and setting the milk.

4th. Lack of right conditions in the raising of the cream—pure air and proper temperature.

5th. The cream not raised and skimmed in due time.

6th. Cream not churned at the proper time—kept too long.

7th. Cream allowed to freeze—injured still more in thawing.

8th. Cream too warm when churned.

9th. Cream too cold.

10th. Churn not a good one.

11th. Lazy hand at the churn. Some persons have the churn around nearly all day, summer or winter; take a few turns, and then stop; fool around and begin again. Cannot make good butter so. Use a box or barrel churn; begin moderately, and continue so till no more vent is needed, and then go on at a good pace, without stopping till the butter comes. When the cream is perfect and the temperature right, about sixty-five degrees in winter, for a batch of butter weighing twenty to thirty-five pounds, twenty or twenty-five minutes should be ample time for churning, in the manner described. Since this complaint in butter-making is more common in the winter season, I should expect to find the cause in the reasons given above in No. 4 to No. 9.—*Asa, in N. H. Mirror.*

PERSISTENCY IN MILKING.

Of all the virtues possessed by dairy cows we think the greatest of all is persistency in milking. The medium milker that holds out to the end of the season may make no great noise in the world, just as the most useful people rarely do, but if accounts were kept with her the owner would radically change his opinion at the end of the season. This is one of the principles of life that the old philosophers have tried time and again to open our eyes to. They have moulded proverbs and fables to enforce it, such as the tortoise and the hare, and the drop of water that wears away the stone, and still the principle seems as far from taking a lodgment in the human brain as it ever did. We remember once owning a beefy little cow that possessed the salient points of a bad milker, and to cap the climax, when fresh she gave but little more milk than enough to support her calf. We always considered her the poorest dairy animal in the herd. In an evil hour for our own conceit we introduced the scales into the cow stable, and after five or six months we concluded to sum up the results. There was one large cow that gave immense quantities of milk when fresh and thus became the pride of the herd. When we came to sum up we found to our utter amazement that the little condemned cow was still giving nearly as much as she did when fresh, while the big cow had fallen below that cow's yield, and in the aggregate the so-called poorest cow was really the best cow in the herd. That test took the conceit out of us, and we imagine there are many surprise parties in store for the dairymen of this country when they get their courage up to the point of testing their cows with the scales through the whole season.—*American Dairyman.*

Does your cream refuse to produce butter, the condition so far as manipulation is concerned being correct? The fault is probably in some one or more cows of the herd. Test the milk separately of any one that may be suspected, especially of any one that may be ailing in any way.

AFTER a cow has reached her seventh or eighth year, she has outlived her usefulness in the dairy, unless she is a very good one, and her calves have proven good also. Yet there are those who will buy such an old cow, paying a round price for her, rather than raise their own from the best milkers.

The ambition of our dairymen should now be to raise the quality of their butter to the highest point of excellence; and when they have done this and we have properly improved our packages for shipment abroad, we ought to be able to export to Europe and South America many million dollars' worth of butter per year.

THAT dairying has become wonderful in its proportions in Great Britain may be judged from the following: The amount of capital employed in dairying by farmers in the United Kingdom is estimated at no less than £175,000,000 to £200,000,000, and that by landlords at from £1,800,000,000 to £1,400,000,000. These are vast sums, and yet it is only too well-known that British dairy farming is capable of much further development.

The *Cultivator* says: The milk from heifers is neither so liberal in quantity nor so rich as that from the same cow as she becomes older. The old rule which reckoned a heifer with her first calf as equal to half a cow was not far from right. The growth of the heifer is so much deducted from what would otherwise go to milk production, but with young cows capable of eating and digesting an unusual quantity of food a larger proportion may go to the milk pail.

The *Dairy World* says that the dairy cow must have been bred definitely and specially to a given end; that is, the production of milk. The native cow, therefore, cannot be depended upon to breed dairy cows, except as the ground-work for breeding grades; for unless bred to a bull prepotent in a definite direction, the calf will be more likely to revert to some ancestor of no fixed characteristic, than otherwise. The prepotent (purely bred) by, however, will fix his characteristics strongly in the calf, and this from a well-known law, heredity.

The *Farmers' Review* remarks: "In Canada cheese leads butter in the dairy business, and the Canadian cheese has made a reputation which gives it a decided preference over American in the English markets. According to the latest statistics the number of cheese factories in Ontario alone is 551, which turn out a yearly product valued at \$4,668,000. They give employment to over 1,600 persons. The Canadian dairymen have achieved their present enviable position by the production of good, honest, whole milk cheese carefully and skillfully made, while American cheese makers have largely lost their former prestige by sending abroad inferior skims."—[We hope Canadian dairymen may long continue to lead the way in cheese making. It will be their own fault if they have ever to take a back place.—ED., RURAL CANADIAN.]

"My dear," said a husband to his wife, "I am unable to get any sleep. I have tossed ever since I came to bed. I wish you would get up and prepare me a little laudanum." "It's hardly worth while now," she replied, consulting her watch; "it's almost time to build the kitchen fire." Then he sank into a quiet, restful slumber.

HORSES AND CATTLE.

RELATIVE VALUE OF FEEDING STUFFS.

A good deal of discussion has been taking place on the other side of the Atlantic regarding the relative value of cotton seed and linseed cake as cattle food. We give below an extract from an article in the *Agricultural Gazette*, London, bearing upon this subject, which contains some useful hints to American feeders:

"Cotton cake, by itself, has rather a tendency to bind animals, but when mixed with maize much of this is prevented, and if a few roots can be spared in addition there is not the slightest fear of any harm being done in this way. Beasts fed on a mixture of these two handle and have the same bloom on them as when fed on linseed cake. What the effect on calves and lambs would be has not been proved. Possibly it might not be so good, and until it has been experimentally proved it would be advisable not to use it on a large flock at once, as food which is easily assimilated is of the greatest importance to their young and easily disarranged stomachs. But, however, it may be on very young animals, for feeding older stock it is quite equal to linseed, and, as before stated, the expense is \$10 to \$15 per ton less. Throughout the winter linseed has been sold \$10 per ton dearer than the price of other seeds guaranteed. Care must be taken that the decorticated cotton cake is sweet and pure and free from the hard compressed knots so frequent in badly-made cakes; and also before it is given to animals that it is very finely broken. The bad results obtained from its use are nearly all owing to its having been given to animals in large pieces, which their stomachs are totally unfitted to digest. No lump should be given which will not pass through a three-quarter inch sieve, and it would be better if it were coarsely ground. The maize should be finely griddled when given with chaff, but not ground into a fine meal; as meals of all sorts are liable to produce hove when given in large quantities. On grass it is best coarsely griddled to prevent its blowing away. Farmers are so in the habit of giving their beasts linseed cake that with many the idea of feeding an animal is only associated with it; and, as a food in itself, it is unequalled by any other, but other foods can be mixed to be more economical. Linseed cake made its reputation in those good old days, which seem so long past, when prices were such that the close steering of the present did not seem so necessary, and when a farmer could afford to be satisfied with whatever profit he got from any particular thing, as he knew the whole would give him a good return; and the reputation it then gained clings to it, and in buying it now, compared with the other foods mentioned, \$98 is paid for its feeding properties and \$22 for its reputation.

"INTERFERING" IN HORSES.

A few days ago we had an interesting talk with some intelligent horsemen on this subject, when a few points were brought out which may prove of interest. The different methods of shoeing were discussed and one stated that it was best to lower one side of the shoe so as to cant the foot and thus prevent interfering. We believe this to be an erroneous and dangerous policy. In shoeing horses the first point to be observed is to retain the natural position of the foot. Anything that tends to throw the hoof out of this position is injurious, as by straining tendons, muscles or bones, it speedily works mischief and the horse is lamed.

Habit has much to do with "brushing" and "interfering," and these faults may often be over-

come by other means than bad shoeing, for lowering one side of a shoe we call bad shoeing. When a horse interferes badly, so that a wound is formed, he should be kept quiet and the sore place treated until well, then put thick leather coverings on the parts that strike and drive him for a while. If interfering is continued, increase the thickness of the leathers until they discommodate the horse in action, when he will learn to use them without striking. Where these are used for some time the bad habit of brushing gives way to the better habit of not striking the leather, thus when they are removed the horse usually goes all right.

Speaking of shoeing we are tempted to say a little more on the subject. We have recently noticed a method that is being introduced in some places that will lame more horses than anything we have seen. This is the practice of shortening the shoes so that the heel and frog are allowed to come down on the ground. Such a position is altogether unnatural, and must certainly produce bad effects. First, the heels are apt to receive injury from bruising, as is sure to happen if the horse be driven on stony ground; and secondly, the tendons of the leg are apt to be strained, and a false position given to the foot and leg in general. Not only should farmers see that the smith does not shoe their horses in this manner, but they should also be careful to keep the hoofs of young horses well trimmed at the toe if good feet and sound limbs are desired. An exchange gives a few good points on the subject of interfering in the following words:

"In taking steps to remedy the evils of 'interfering' in the case of horses, the first thing to do is to ascertain what part of the foot strikes the ankle; then apply white lead, or some kind of paint, to the injured parts; next, move the horse pretty lively till he strikes. If it is the shoe calks that do the harm, cut the calks off, and hammer the shoe down sidewise, to make it of the same height as the opposite calk, and turn it well under the foot; but if it is the inside shoe next to the heel, make it straight and hammer the edge round, and file the shoe smooth. But should it be near the toe, rasp the hoof off as much as the hoof will stand, and place a thin strip of India rubber between the shoe and the foot, projecting at least a quarter of an inch beyond the shoe. This being soft and elastic, the injured parts will soon get well, if the horse is not driven very much.

DEHORNING CATTLE.

I hereby give you a bit of my experience in the way of sawing off horns. Mr. Haaff's last letter seemed to lay the matter down so simply that a neighbour offered to furnish the subject if I would wield the saw. Being desirous of seeing the experiment tried, I readily consented. The animal was a two-year old Shorthorn bull that had shown strong symptoms of viciousness, having backed the owner out of the pasture two or three times. Our first attempt proved futile, failing to secure the brute properly. The head was tied around as Mr. Haaff directs, but the staunchion gave way, and out went the bull with a horn half off. We were obliged to abandon the job till next morning, when a suitable staunchion was fixed. This time the hon. gentleman left the stable a hornless muley, not having lost any more blood than would naturally flow from a simple cut on your finger. Not a groan did he give, but threw himself down, and there he lay till the horns dropped in the manger before him. About an hour afterwards, we made him a visit in the pasture, found him feeding as quietly as though nothing had happened, suffering no perceptible inconvenience, only that he could not gore us. There are several

others in this neighbourhood that will soon share the same fate. Some very humane people denounce us as cruel and unfeeling, and are somewhat inclined to complain of us. But let them once get horned by a mad bull and I'll venture they will be willing to see the brute sawed in two in the middle. I now believe "dehorning" perfectly harmless, as well as a benefit to the herd. I intend to denude my cattle of all horns at an early date. The operation was performed four weeks ago; bull all right yet.—I. E. S., in *Western Rural*.

INFLUENCE OF GRASS.

In describing a case of disease in an animal, a lady correspondent says that her husband thinks it will be all right as soon as grass comes. This has suggested to us that a few words upon the subject might be of great benefit. It is probable that nine out of ten cases of sickness will "come out all right" as soon as the animals can be got upon grass. Our animals have been fed all winter, in thousands of cases, upon dry, concentrated food, and in one way or another they are now showing the effects of it. The owner feels that he must do something, and often it is necessary to give medicine at once. But as soon as grass comes stop the medicines in ordinary cases at least, and turn them into the pasture. At first the grass will lack nutritious qualities, and it may sometimes be necessary to feed even a sick animal something in addition. Animals that are not diseased ought to have something besides the very young grass. But a sick animal will often be greatly benefited by stinting it in diet, and in such cases it may need nothing more than what the imperfect young grass will give. If we had an animal that was out of condition, or in any disease short of being or verging upon a desperate case, we should turn it upon grass as soon as grass comes, and give that a trial before resorting to medical treatment.

It rests a horse greatly to be relieved of his harness during the noon hour. A hurried rubbing over the surface of the body with a wisp of straw before putting the harness back will be grateful to the horse. Practise these little acts of kindness, they bring comfort and strength to the animal and peace to your own mind, as his keeper.

A GREAT width between and prominence of the eyes indicate a teachable and tractable horse. Width between the ears indicates courage, nobleness and strength of character. Roundness and elevation between the eyes indicate mildness of disposition, and desire to be caressed and to reciprocate kindness, but never trust one that shows much white above the pupil of the eye, or with white in that organ.

The following is given by an exchange for crack in a horse's hoof: "The foot should be examined to discover if the disease is or is not due to unequal pressure at the coronet or the side where the crack is formed. If it is found that the foot is not well balanced, the crust of the hoof should be reduced somewhat on the sole below the crack, so as to relieve the pressure; the bar on the same side should be thinned, and the shoe spread as much as possible, so as to close the crack if possible. The shoe should be fitted to bear evenly on the sides from toe to heel. A cut on the horn across the upper part of the crack should be made so as to prevent its spreading upward, and a plaster of Venice turpentine should be bound over the crack. A strong spring between the heels will very much help to relieve the pressure which causes the crack."

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SHEEP AND SWINE.**SUCCESSFUL SHEEP-HUSBANDRY.**

The ways and means by which sheep-husbandry can be made profitable must be learned, just as every other business must be learned, before the man engaging in it can reasonably expect to find it profitable.

The knowledge necessary is of a twofold character. The successful manager of a flock of sheep must not alone know what to do, and when and how to do it; he must know what not to do. As the successful pilot must have knowledge not alone of the deep and smooth waters of the route his vessel is to traverse, but as well must know the location of hidden rocks and shoals to be avoided, so must the shepherd know the course in his business that is free from obstructions, and which will, under ordinary conditions, insure successful results.

First of all have your mind thoroughly made up as to what particular phase of the industry you purpose to confine your efforts. In reaching this conclusion one will need to take into account the amount of capital to be invested, the kind and number of sheep he will begin with, and the limits to which capital and surroundings circumscribe him. If the owner of land one can "take chances" from which the mere leaseholder is barred. A large proportion of the failures among men making sheep husbandry their leading business have resulted from indebtedness incurred for sheep and lands with the expectation that profits would soon wipe out both principal and interest. At any other time than when a "boom" is on, more money will be made from a small, well-selected flock that has been paid for than from a larger one from which the first returns belong to the creditor.

When once the mind is made up as to the kind and number of sheep—stick. Don't let the report that some other man, at some other place, is working wonders with some other kind of sheep, divert you from the road you have marked out. Work to show the world what you can do with your sheep and with your surroundings.

When you buy a sheep for breeding purposes be sure that it is better than the best in your own flock in blood and physical development; and when you have bought it see that it is cared for like any other valuable piece of property. Good live stock, like good clothes, cannot be exposed to all kinds of hardship without showing the effects of such harsh treatment.

Take off the wool as soon as the weather seems settled and warm enough to admit of it with safety to the sheep, and put the fleeces in such order that the buyer will readily give you the top price for wools of similar grade.

Breed so as to have every lamb an improvement upon the average standard of the flock, and sell as soon as they can be made ready all that come below such standard. When the time comes for selling animals of any age do the selecting yourself—always keeping the best. They are worth more to you than anyone else, so long as you are not overstocked.

Do not be tempted into keeping more sheep than you have first-class arrangements for keeping—food and other necessary accommodations.

Do not keep different breeds of sheep together. The conditions best suited to some are not the best for others, and when mixed the result will be that all will come short of their highest possible results.

Do not make "spread eagle" calculations, and then quarrel with the sheep because your dreams are not realized.

Do not depend on tariffs, or anything outside

of your own individual judgment and energy, to increase your income from the flock.

Do not abandon sheep-husbandry because prices are temporarily unsatisfactory, or be in any hurry to expand your business when a "boom" sets in. Wool and mutton, like everything else, will vary in price, and the changes in price will come faster than any man can change his business without sacrifice.

Do not take many risks by experimenting in crossing different types of sheep. Successes are the exception and are secured only through long and persistent effort. Among the existing types are to be found better animals than any one is likely to get by crossing, no matter how successful his efforts in that line may prove.—*Breeders' Gazette.*

MONEY IN GOOD HOGS.

Hog raising is one of the most ready means of money making known to the Western farmer. Even when the supply is abundant and prices low, a margin of profit is found in well-kept stock. Such animals are always saleable. They are comparatively free from disease, and usually bring quick returns, in cash, for the amounts invested. Moreover, every properly managed and well fed hog that leaves the farm leaves it in all the better condition for growing rich pastures and heavy crops of grain, than had he not been reared and fed upon the farm.

Good management in hog raising as in the handling of all other farm animals begins with the selection of good breeding stock. A good thoroughbred Berkshire boar will greatly improve any herd of common hogs. Almost any farmer can afford to buy such a boar at the prices now asked. In fact, we do not see how any farmer who raises hogs can afford not to buy.—*Phil Thrifton, in Breeders' Journal.*

SWILL—HOW TO USE IT.

There is no better food for young pigs after weaning than good skimmed milk with a little sweet moderately fine wheat bran and corn meal stirred into it. There should not be a large proportion of meal in the mixture at first, nor so long as the pig is making growth, though corn meal is excellent to finish off fat tenning with. Many young pigs have been spoiled by overfeeding with corn or corn meal. It is impossible to get a good growth on such food alone. Clear milk would be better, but milk will pay a larger profit when given in connection with some grain. Milk alone is rather too bulky for a sole diet; it distends the stomach too much, and gives the animal too much to do to get rid of the surplus water. Many young pigs are spoiled by overfeeding. When first weaned they should be given a little at a time and often. They always will put a foot in the trough, and food left before them a long time gets so dirty that it may be entirely unfit to be eaten. But one of the worst methods of feeding milk to pigs is to have it stand in a sour swill barrel, mixed in along with cucumber parings, sweet corn cobs, and other kitchen wastes, till the whole mass is far advanced in the fermentation stage. Sweet milk is good, and milk that is slightly sour may be better, it may be even more easily digested; but milk that has soured till it bubbles, till the sugar in it has turned into alcohol or into vinegar, is not a fit food for swine of any age, and certainly not for young pigs that have just been taken from their mother. A hog will endure considerable abuse, will live in wet and filthy pens, will eat almost every sort of food; but a pig that is kept in comfortable quarters and fed upon wholesome food will pay a much better profit to the owner, and

furnish much sweeter pork for the barrel. Nearly all the diseases which hogs are subject to are caused by cold, wet pens, or by sour, inferior swill. Better throw surplus milk away than keep it till it rots, and then force it down the throats of swine. Farmers should keep swine enough to take all the wastes of the farm while in a fresh condition, and then supplement it with good wheat midlings and corn meal. Our own practice has been to keep pigs enough to take the skimmed milk each day direct from the dairy room without the use of a swill barrel to store and sour it in. A swill barrel in summer is a nuisance on any farm. We could never find a good place to keep it, where it would not draw flies or breed flies. In winter it would be less objectionable, but it is a nuisance at all times, and in all places.

The swill from the house is not a substitute for water, which should be given to swine fresh every day. Although hogs are fed sloppy food during summer any one trying the experiment will be surprised at the amount of pure water they will drink, especially in very warm weather.

The Yorkshire swine are divided into three classes, the large Yorkshire, small Yorkshire and middle Yorkshire. Except as regards size, the large and small Yorkshires are very similar; but the middle class may be said to be quite distinct in appearance, shape and quantity from the others.

By mixing one part sulphur to three parts of salt, and feeding to the sheep, it will have a tendency to improve the general health and drive away the ticks. Many farmers feed sulphur both summer and winter with excellent results. Flocks fed in this manner are much less liable to be affected with foot rot.

The hogs should be started to thriving before cold weather. A good clover pasture is the best grass they can get, but they should have some "snapped" corn once a day, and plenty of clear, clean water. The hog-pen must be repaired now for winter use. Hogs need a warm pen, but should have good ventilation.

Good time to make a note about planting shade trees at the proper season.

FARMERS should never consign their produce to strangers. The only safe course is to deal only with reputable and established firms.

Look out for the well. See that there is no drainage toward it. Provide spouts to carry all slops away from the house on to the grass and make surface drains, or raise a wide sloping mound around the well to carry off all the water to a distance before it can sink down. The soil around the buildings is continually being saturated with impurities, which will naturally follow the course of the water, and will in time find their way into the well. From there it goes into the family use in many ways. It is used as a beverage; it is used for bathing, so the skin absorbs it; it is boiled in the kitchen, and the vapour continually inhaled. Pure water is one of the most valuable articles of household use.

The greatest incentive to growth of grass is to fertilize the lawn freely. Autumn application of old rotted manure, to be raked off the following spring, after the strength has been conveyed to the soil, will bring best results; next to it in efficiency is ground bones with the addition of ground gypsum, sown broadcast early in the season. The latter is superior in one respect—more lasting; its effect is discernible for several years. Unleached wood ashes is always in order as a top dressing; very invigorating to growing grass. But no matter how strong the growth nor how rich the soil, if we do not cut the turf frequently, it will never present the attractive appearance of a well kept lawn.—*New York Weekly Tribune.*

POULTRY AND PETS.

A HALF HOUR'S RUN.

There are some poultry keepers so situated that their fowls, both young and old, must for the most part be kept yarded in very limited quarters. In such cases if there is a grass-plot, or other piece of ground, near by, a run upon it, even for a few minutes each day, will do the fowls much good, for they will be sure to find some addition to their diet of prime importance to their health and thrift. There is scarcely any flock so large that it might not be indulged in at least a half-hour's liberty toward night fall. The eagerness with which this favour is seized by every individual, old and young, shows how grateful it is to the captive birds, whose wild, natural condition is unlimited freedom.

Even when young chickens are confined to save them from the ravages of hawks and other enemies it is proper to open their doors for a little while before sunset; and if your presence is needed to secure their safety you will feel amply repaid for your watch by observing the wild delight with which they hail the opening of their prison doors. Children let out of school on a summer's afternoon are no objects for comparison. The leaps, the short flights, the eager running this way and that, the seizure of gravel and grass, and the rush after insects, make it a scene of such enlivening interest that you come to watch for it yourself as well as the chicks, and you are tempted to prolong the hour till the little creatures themselves become so tired and sleepy that they are glad to crawl back to their sheltered quarters and "lie down to pleasant dreams." We do not envy any man his disposition who looks with carelessness or contempt on the *little things* that add to the cheerfulness and comfort of any life, human or animal. And it should be the aim of all parents to cultivate in their children kindness and thoughtfulness for everybody and everything dependent upon them for care and consideration.

PET ANIMALS OF NEW GUINEA.

In Australia the only big animal which is not marsupial is the dog, and this was probably first brought over by man. New Guinea has not only dogs, but pigs; and it seems to us an odd thing that the natives, though they have dogs, should make pets of pigs. Papuan women will nurse and fondle a pig as an English lady caresses her dog—though the dog, too, has been considered an unclean animal. Dogs are sometimes sacrificed in New Guinea.

Australasia has another kind of strange beasts, lowly organized, and ranking even below the marsupials. Of these the best known is the famous *Ornithorhynchus paradoxus*, the platypus or duck mole, which its first discoverers hardly knew whether to class as a beast or a bird. After a time another animal of the same order was found, a kind of prickly ant-eater, and two species of this creature were found in New Guinea. There is, therefore, every hope of finding new and strange beasts, to say nothing of other animals. The birds of New Guinea are beautiful in the extreme: some of them have been known longer than their country; for hence come the wonderful birds of paradise, which were brought long ago to Europe, though living specimens, such as those now in the Zoological Gardens, have been seen there but seldom. The skins were sent to the West with the legs cut off, whence arose the fable that these lovely creatures were inhabitants of the air alone, and never settled on this dull earth at all. The splendid crowned pigeons, great blue birds with the staidest crests, several of which may be seen at the Zoological Gardens, also come

from New Guinea, where they were first noticed by the famous English navigator, Dampier.—*Cassell's Family Magazine.*

DO LANGSHANS LAY MANY EGGS?

This question is so often asked that we are surprised at it, from the fact that we supposed the majority of people had been informed as to their good qualities. We have only this to say relative to their egg-producing qualities: We have the first person yet to hear from as being dissatisfied with them in that respect, or to say they did not lay well. On the other hand, the universal expression, when given at all in that respect, has been entirely favourable, being always compared to the *Leghorns* where eggs are spoken of.

Our own experience coincides with the best record given them for the production of eggs, and having compared them side by side with many other varieties, can frankly say that they have excelled all others in our yards in the production of eggs, without intending any disparagement of other breeds. One important point, however, to be considered in the production of eggs with the Langshans, is dry quarters, as they will not lay eggs if compelled to occupy damp and wet houses. Cold does not affect them nearly so much, consequently, if your houses are dry and reasonably warm in winter, they will give you eggs all the time.

WATCH YOUR FOWLS.

Breeders should be very watchful for signs of sickness or disease, and thus be able to administer remedies in the incipency, which is about the only time that medicine does the fowls much good. A little carelessness in not keeping a lookout for the health or ailments of your poultry may result in the loss of many good birds. Some years ago I had a magnificent flock of fine fowls, and justly prided myself on them. Their yards were exempt from cholera, which was devastating those of many of my neighbours. I believed my place to be proof against this dread scourge, and this made me lax in my watchfulness, while numerous other duties diverted my attention from the poultry. A fine, large hen, upon which I had prided myself, commenced to lose her appetite, and to walk listlessly around the yard. Soon she refused to eat for a day or so, and then again her appetite would return. In this way she struggled along for two or three weeks, until one morning I found her dead under the roost. Then trouble commenced; for about half the birds were affected. Nearly all of these were dead by the end of a week, though extra exertions in cleaning, purifying and disinfecting the house saved me the remainder.

If I had removed the ailing bird at once, and had taken extra pains with the others, the loss would have been trivial; but I had to pay dearly for that period of lax care and attention. The combs are the first to show the signs of sickness, for they soon lose their bright red colour, eventually becoming of a pale ashen hue. As I began, so I will end by saying: watch your fowls.—*J. K. P., in Country Gentleman.*

Plan your fowl houses so that they shall be warm in winter, cool in summer, and sunny and dry at all times.

It is admitted by all that early chickens make the best winter layers, and it is pretty generally understood that old hens are more successful in rearing chickens than the younger ones. A witty old farmer once remarked, with a twinkle in his eye, that "a hen should never be allowed to sit until she had hatched and raised two broods of chickens!"

PACKING EGGS FOR WINTER USE.

As the price of eggs is usually low at this season, a large number may be packed and stowed away until prices become higher, says the *Farm and Garden*. It is not necessary to keep eggs six months, though they may be kept a year with care. Prices fluctuate very much, and three months make quite a difference. Opinions differ as to which is the best method of preserving eggs. The usual practice is to pack the eggs in salt, filling the spaces well with the salt. Boxes should be used, and the small sizes are best. The eggs are placed on end in the salt, and when the boxes are full, the tops are screwed on tightly. The secret of success is to turn the eggs at least three times a week, which is done by turning the boxes upside down. The difficulty with preserved eggs is that the contents, if the eggs remain in one position, settle and adhere to the shells. This cannot be avoided whatever the method or process may be, but if they are packed in boxes, and the boxes frequently turned, as mentioned, the difficulty will be greatly lessened. In addition to salt as a packing, coal-ashes, plaster, well-dried oats or corn, and even dust may be used, but salt is better. Dry processes are more convenient than the liquid methods, and the later they are preserved the better. The chief point to be observed, however, is to frequently turn the eggs, and to keep the boxes in a cool place.

Poultry at certain seasons are sometimes over-stimulated by high feeding to make them lay. It should be remembered that fowls can be injured in this way.

Hens of the White Leghorn breed will each produce on an average about 150 eggs in a year, which is about fifty per cent. more than the average obtained from mongrel fowls.

A lady in England, a successful breeder of poultry, preserves eggs fresh by immersing them in melted tallow and then packing in bran. This process closes the pores of the shell and excludes the air, and it is claimed will keep eggs fresh for months.

Douglas mixture, so often recommended by English poultry fanciers for adding to the drinking water of fowls, is made as follows. Sulphate of iron one pound, sulphuric acid two ounces, water one gallon. Mix and dissolve. Dose one to two teaspoonfuls to a pint of drinking water.

Encourage the wild birds to stay in the orchard, the garden, the lawn and shade trees. Their sweet songs alone repay for all the fruit they could eat, while they are of untold benefit in eating many insects and insect eggs that would be of far more detriment to our fruits than the birds. We never enjoyed the wild birds so much as we have this season. Last year the hated English sparrow drove away all our wild birds, but fortunately for us, the severe winter has killed them out, and our wild birds have again come back with songs more beautiful than ever before, busy hunting insects all day long.

Fresh-laid eggs in the winter are worth much more than summer eggs, and by the requisite care and painstaking every poultry raiser may have a good crop of eggs in the winter. A warm place with a southern exposure should be provided, and the fowls be well supplied with stimulating food. A meat diet is necessary for laying fowls, and the supply of insects being cut off by cold weather, the loss should be made up by small rations of fresh meat three or four times a week. Parched corn, oats and buckwheat are excellent food for laying hens. The Light Brahmas and the Leghorns are considered among the best winter layers.

Scientific and Useful.

WHITE spots upon varnished furniture will disappear if you hold a hot plate from the stove over them.

SCROFULA is a diseased condition of the glandular system, a depraved condition of the fluids, resulting in bad blood, Swellings, Sores, Ulcers, etc. Caro—Burdock Blood Bitters.

Mrs. J. G. Robertson, Toronto, suffered from general debility, loss of appetite, and says, "Life was almost burdensome" until cured by Burdock Blood Bitters.

A LITTLE borax put in the water in which scarlet napkins and red-bordered towels are to be washed, will prevent them from fading.

CERTAIN CURE.—A Cure for Cholera Morbus—a positive cure for this dangerous complaint, and for all acute and chronic forms of Bowel Complaint incident to Summer and Fall, is found in Dr. Fowler's Extract of Wild Strawberry; to be procured from any druggist.

EASIEST way to mark table-linen—leave a baby and some black-currant jam alone at the table for three minutes.

LOST.—How many people of both sexes are suffering from lost vitality, all broken down, and on the verge of Consumption that might be restored, as many have been when given up to die, if they would use Burdock Blood Bitters, which restores lost vitality and gives new vigor to the debilitated system.

A COPPER teakettle may be brightened and kept from tarnish by rubbing it with salt and vinegar till it shines, then washing it thoroughly in hot suds, and finally polishing it with coal ashes.

A MAN OF NERVE.—We all admire a man of nerve, who is cool-headed and equal to any emergency, but nervous debility is the prevailing weakness of most people. Burdock Blood Bitters is a good nerve and general tonic, which regulates and strengthens the whole system, imparting bodily and mental vigor.

A FAVOURITE way of serving beef soup at Galveston, is to pour it while at the boiling-point into a soup-bowl, in the bottom of which is placed a crisp, brown slice of toast, then a fresh egg is dropped into it, and it is cooked sufficiently by the time the soup is partly eaten, to be delicious.

A LARGER percentage of fatal diseases may be traced to their origin in the Kidneys. Burdock Blood Bitters act powerfully and healthfully upon the Urinary Organs.

A. E. Hall, Toronto, certifies to a cure of serious lung complaint with consumptive symptoms rapidly developing. The only remedy used was Burdock Blood Bitters.

MARK CAKE.—Light part. Whites of three eggs, one-half cup of butter, one cup of sugar, one-third cup of sweet milk, two cups of flour, one-third teaspoonful of soda, two-thirds teaspoon of cream tartar. Dark part: Yolks of three eggs, one-third cup of butter, one cup of molasses, two cups of flour, one teaspoonful of soda, spice and fruit: bake in one loaf by placing one spoonful of dark and one of light in baking tin.

HONESTY THE BEST POLICY.—An honest medicine is the noblest work of man, and we can assure our readers that Dr. Fowler's Extract of Wild Strawberry is not only reliable, but is almost infallible to cure Cholera Morbus, Dysentery, Cancer of the Stomach and Bowels, and the various Summer Complaints, whose attacks are often sudden and fatal.

AT this season of the year, before you fill your cellars with potatoes, cabbages, apples, and other vegetables, you should look to the arrangements for thorough ventilation. Do not have such an arrangement that air from the cellar must pass up into the living room of your house. Such a connection between cellars and living-rooms means sickness, expense, discomfort and probably death. Every heap of vegetables in a cellar will give off exhalations that are necessarily injurious to human health. Run no risks. Ventilate your cellars to the open air, not to your sitting or sleeping rooms. Admit to the rooms no air excepting that from outside, always avoiding the air that rises from the vegetable bins and the usual cellar medley of things perishable.

ACUTE, Malaria and Bilious Complaints so prevalent in the Spring and Fall may be prevented and cured by a timely use of Burdock Blood Bitters to purify and tone the system.

T. Walker, Toronto, recommends Burdock Blood Bitters as an invigorator of the liver and Kidneys, and for poverty of the blood from any cause. It cured him.

Questions Answered!!!!

Ask the most eminent physician:

Of any school, what is the best thing in the world for allaying all irritation of the nerves, and curing all forms of nervous complaints, giving natural, childlike refreshing sleep always?

And they will tell you unhesitatingly "Some form of Hops!!!"

CHAPTER I.

Ask any or all of the most eminent physicians:

"What is the only remedy that can be relied on to cure all diseases of the kidneys and urinary organs, Bright's disease, diabetes, retention, or inability to retain urine and all the diseases and ailments peculiar to Women?"

"And they will tell you explicitly and emphatically "Buchu!!!"

Ask the same physicians

"What is the most reliable and surest cure for all liver diseases or dyspepsia, constipation, indigestion, biliousness; malaria, fever, ague, etc.," and they will tell you "Mandrake! or Dandelion!!!"

Hence, when those remedies are combined with others equally valuable.

And compounded into Hop Bitters, such a wonderful and mysterious curative power is developed, which is so varied in its operations that no disease or ill-health can possibly exist or resist its power, and yet it is

Harmless for the most frail woman, weakest invalid or smallest child to use.

CHAPTER I.

"Patients "Almost dead or nearly dying"

For years, and given up by physicians, of Bright's and other kidney diseases, liver complaints, severe coughs, called consumption, have been cured.

Women gone nearly crazy!!!!

From agony of neuralgia, nervousness, wakefulness, and various diseases peculiar to women.

People drawn out of shape from excruciating pains of rheumatism, inflammatory and chronic, or suffering from scrofula.

Erysipelas!

"Salt rheum, blood poisoning, dyspepsia, indigestion, and in fact, almost all diseases frail"

Nature is heir to

Have been cured by Hop Bitters, proof of which can be found in every neighbourhood in the known world.

None genuine without a bunch of green Hops on the white label. Shun all the vile, poisonous stuff with "Hop" or "Hops" in their name.

CONSUMPTION CURED.

An old physician, retired from practice, having had placed in his hands by an East India missionary the formula of a simple vegetable remedy for the speedy and permanent cure of Consumption, Bronchitis, Catarrh, Asthma and all Throat and Lung Affections, also a positive and radical cure for Nervous Debility and all Nervous Complaints, after having tested its wonderful curative powers in thousands of cases, has felt it his duty to make it known to his suffering fellow-men, and by this motive and a desire to relieve human suffering, I will send free of charge, to all who desire it, this recipe, in German, French or English, with full directions for preparing and using. Sent by mail by addressing with stamp, naming this paper, W. A. NORRIS, 112 Power Block, Rochester, N. Y.

AN INIMITABLE SUMMER RESORT.

The largest majority of health or pleasure seeking tourists that have not the requisite wealth and time to visit the mountain resorts of Colorado or the various water resorts of Northern Wisconsin and Minnesota, long for a resort that will combine the benefits of easy access, pure air and enough natural attraction to entertain and invigorate the spirit. Oregon, Ogle County, Illinois, possesses the combination in the greatest degree; on the Burlington Route but 99 miles from Chicago, and reached from that point twice per day in less than four hours, with good and ample hostelries; numbers of springs gushing forth pure and health-giving water; the Beautiful Rock River; towering hills and massive rocks. One can well imagine that all the popular and interesting resorts of the continent have been merged together to be enjoyed at this delightful place. Detailed information furnished upon application to PERCEVAL LOWELL, General Passenger Agent, C. B. & Q. R. R., Chicago, or M. L. ETTINGER, General Ticket Agent, C. & I. R. R., Rochelle, Illinois.

Nervous Debilitated Men

You are allowed a free trial of thirty days of the use of Dr. Dye's Celebrated Voltaic Belt with Electric Suspensory Appliances, for the speedy relief and permanent cure of Nervous Debility, loss of Vitality and Manhood, and all kindred troubles. Also, for many other diseases. Complete restoration to health, vigour and manhood guaranteed. No risk is incurred. Illustrated pamphlet, with full information, terms, etc., mailed free by addressing Voltaic Belt Co., Marshall, Mich.

DR. FOWLER'S
EXTRACT OF WILD
STRAWBERRY
CURES
CHOLERA
CHOLERA INFANTUM
DIARRHŒA,
AND
ALL SUMMER COMPLAINTS
SOLD BY ALL DEALERS.

A GOOD THING TO HAVE AT HAND!

During the hot weather we of ourselves, if we would be free from such ills of summer as

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

and one cannot do better than to make assurance 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, 30c, 25c, and 50c. per bottle.

Burdock BLOOD BITTERS
Cures Dizziness, Loss of Appetite, Indigestion, Biliousness, Dyspepsia, Jaundice, Affections of the Liver and Kidneys, Pimples, Blotches, Boils, Humors, Salt Rheum, Scrofula, Erysipelas, and all diseases arising from Impure Blood, Deranged Stomach, or irregular action of the Bowels.

Miscellaneous.

SOME say that a man who would "beat an egg," would be so cruel as to "whip cream," "thrash wheat," or even "lick a postage stamp."

JAMIE and Donald at the Zoo, viewing the zebra—Donald: "A zebra, do ye ca' it? I ca' it a tartan cuddly!"

"YAAS," said Snooks, "I have been living on an exclusively vegetable diet down in the country—nothing but eggs and milk, you know."

It was a son of Erin who asked the meeting to excuse him from serving on a committee because he expected to be unexpectedly called away.

A MAN who wanted to see the last eclipse got into a cab and told the driver to take him as close to it as he could, because he was near-sighted!

"I met Mr. Smith in a shabby coat a while ago. He has not failed, has he?" "Oh, no, he only puts on that coat when he goes to the assessor's to give in his property for the assessment."

A SMALL boy went to see his grandmother. After looking eagerly around the handsomely furnished room where she sat, he exclaimed, inquiringly: "Oh, grandmamma, where is the miserable table papa says you keep?"

"POOR!" remarked the wise concert-goer as the accomplished but quiet performer of a piano solo was leaving the stage; "that fellow can't play. Why, he don't wriggle his body, nor throw back his head, nor stick out his tongue a bit."

IN SEASON.—It is now in season to warn our readers against the sudden attacks of Cholera, Cramp, Colic, and the various Bowel Complaints incident to the season of ripe fruit, vegetables, etc. Dr. Fowler's Extract of Wild Strawberry is the grand specific for those troubles.

A MALARIAL NEIGHBOURHOOD.—People so unfortunate as to reside in a malarial region should cleanse and thoroughly tone up the system with Burdock Blood Bitters, that promptly acts upon the Stomach, Bowels, Liver and Kidneys, thus preventing Ague and all Bilious Complaints. An ounce of prevention is worth a pound of cure.

A SCOTCH weaver took his child to church for baptism. Upon being asked what he intended the name of the child to be, he said, "The Right Honourable William Ewart Gladstone." The minister replied, "No, William, that'll never do. I can admit your bairn into the vesical kirk; but, if you want the world's honours for it, I doot ye'll hae to gang to the Prime Minister himself."

A GENTLEMAN was one day taking his family to ride, and his little daughter Molly was very anxious to know where they were going, so her father told her they were going to Wilbraham. On the way home, Molly was very quiet, for her, and finally she said, "Papa, is the place where we went to, the place where Lazarus went to, Wilbraham's bosom?"

A CITIZEN, who had been playing poker the night before, dropped a blue chip into the contribution box by mistake. After service, he went to the deacon who had passed the plate, and told him of his mistake. "So I'll just give you a dollar in its place," he said, "and we'll keep the matter quiet." "No you don't," replied the deacon, ignoring the money offered: "that's a blue chip. It's worth five dollars."

"WHY, Caroline, aren't you ashamed of yourself?" exclaimed a mother, entering the parlor and addressing her daughter. "Your poor father has only been dead three weeks, and here you are playing the piano." "He's been dead longer than that, maw. He died on the 2nd, so you see he's been dead four weeks." "That's a fact," said the mother. "Go ahead. I declare, my memory is failing me."

"A nice husband you are!" said madam, in a passion. "You care less about me than about those pet animals of yours. Look what you did when your poodle, Azor, died." Husband (quietly): "Well, I had him stuffed." Wife (exasperated): "You wouldn't have gone to that expense for me—not you, indeed!"

MINKS—"Yes, sir, I have oatmeal on my table every morning. I consider it the most wholesome, most—" JUNKS—"But see here, Minks, don't you know that oatmeal is the principal dish in Scotland, and that country is a nation of dyspeptics?" "Oh, it's not the oatmeal that causes the dyspepsia over there." "What is it?" "The bagpipes."



The Improved Model Washer and Bleacher.

Always to the Front.

I Hang My Banner On the Outer Wall. I Won't, Nor I Can't Be Beat.

My Challenge is Broad, and open to all, from it I'll Never Retreat.

A Little Common-Sense Talk About Washing—Read, Weigh the facts, and be convinced.



"Well, I never would have believed it had I not tried it. Washing all out; not half the labour; never looked so nice before. Just as Mrs. Moore said, 'The Improved Model Washer and Bleacher' is worth its weight in gold."



"What! Dinner not ready yet? Don't see why you can't have your work done as early as Mrs. Tucker. Her washing is all on the line."

"So I could, John, if you would buy me an 'Improved Model Washer and Bleacher,' as Mr. Tucker did for his wife. They only cost \$3."

THE IMPROVED MODEL WASHER AND BLEACHER.

It is harder work to operate the mechanical devices than to use the common washboard. They are constantly getting out of order, and wear out in a short time. They wear out clothes faster than the rubbing board, because the friction is greater.

We will explain why:—

Water force is what removes dirt from the fibre of the cloth. A large body of water is required to hold in solution a comparatively small amount of dirt. Steam wash-boilers

cannot accomplish the desired result. They do not contain enough water to hold the dirt in solution.

While steam will not remove dirt, it is a powerful agent to assist in cleaning, because it expands the fabric, and causes the discharge of dirt and impurities from the cloth that cannot be forced out in any other way, unless by the application of heat and force of water combined. In order to remove the dirt from steamed clothes, they must be rinsed in water at nearly boiling heat, for if you use water at a lower temperature it causes the fabric to contract, which "sets the dirt," thus causing the clothes to turn yellow. An essential thing to be mentioned is the rotting of clothes by steam wash-boilers, because of the small quantity of water used.

Everybody knows that a large quantity of soap dissolved in a small body of water must necessarily form an exceedingly strong alkali, which, after the clothes are packed in the steam wash-boiler, is converted into steam, every moment becoming more concentrated, till the clothes are removed. A few such washings, and what is the result? Simply this: Your clothes fall to pieces of their own weight, and you pronounce steam wash-boilers (as they are) a failure.

The art of cleansing fabrics is yet imperfectly understood.

The numerous devices of friction rollers, pounders, squeezers, dashers, agitators, steam wash-boilers, etc., have all failed in one or more of three essential parts, namely: The saving of labour; wear and tear of clothes, or imperfectly extracting the dirt, and discoloration, all of which are accomplished by the Improved Washer and Bleacher. Mechanical devices of all kinds can only accomplish the desired result by pounding, dashing, rubbing or squeezing about in the water to force the water through and through them. With the Improved Model Washer the clothes are held intact, while the water is kept in motion—the only true principle of hydraulics—thereby extracting all the dirt, without the slightest wear and tear.

What is it removed the dirt? You may ask washerwomen and housekeepers and your answer from nine out of ten will be "plenty of elbow grease," or, in other words, laborious rubbing on the washboard. And such is the case, for you first rub soap on the cloth, and then you have to rub it in to make the dirt soluble; but does that remove it? No, to do that you must dip it in the water and rub repeatedly to force water through the fabric again and again. That is what removes dirt after having been softened by the chemical action of the soap.

The way in which this could be most economically accomplished has been developed in the Improved Model Washer and Bleacher, which embodies all the above points. Mechanical devices take the entire time of a person during the whole wash, and will not remove streaks from clothes. With the Washer and Bleacher, washing, baking and housework are contemporaneous operations, the Washer doing the washing while the housewife does the housework.

The principle of the Improved Model Washer and Bleacher embodies all the essential points. First, we have the desired heat, which expands the fabric, and causes it to discharge the dirt. Second, we obtain a powerful suction beneath the clothes, which produces a downward current or water force

through and through them, thereby removing the dirt. Third, we use a large body of water, which holds the dirt in solution.

Fourth, we use a small quantity of soap. Fifth, the washing is done by water, and not by steam. This process cannot injure fabrics. It cleanses thoroughly, rinsing the clothes being all that is required to complete the operation.

By engineers, mechanics, and scientific men generally, it is pronounced one of the most wonderful discoveries in the principle of hydraulic or water force ever brought to light. By bleachers and chemists it is said to be the most powerful method of removing dirt and all vegetable matter from fabrics ever known. It is the greatest Bleacher extant, and for that alone is worth ten times the price.

For lace curtains this principle is invaluable; cleansing them as no other process can, and without the slightest danger of injury.

The philosophy of the Improved Model Washer and Bleacher is this: The water underneath the Washer becomes hotter and more, expansive than in any other part of the boiler, and consequently is thrown to the surface through the tube, thus tending to produce a vacuum, into which the water is rapidly drawn.

A WORD ABOUT BLEACHING.

There are few professional bleachers in the world. The word "bleaching" implies the art of extracting vegetable or animal matter and discoloration from the various fibres which constitute our different fabrics. This is done by a regular chemical process consisting, first of alkaline boilings, second, immersions in solutions of chloride of lime; third, solutions of acids. After each process the goods receive a thorough rinsing in clear water. This leaves the goods pure and white as snow, ready to finish for market. Now the question arises. Can these fabrics again absorb and fix all their natural discolorations? We answer, No, impossible. Then why is it (asks the housewife) my clothes become yellow and discoloured? There are many reasons—poor soap, hard water, careless servants, not having strength to rub out the dirt your selves, and not being able to use water by hand hot enough to keep the fabric expanded to the extent which is absolutely requisite to thoroughly extract the dirt, or "bleach the clothes." Clothes should never be bleached but once, but thoroughly washed, and they will always be white. The Improved Model Washer and Bleacher will do it for you every time.

Should your first attempt not be as successful as you desire, do not condemn the Washer, but ask yourself if you have fully followed directions—plenty of water, clothes not packed too tightly, and a good fire. Remember your first attempts to make bread, and their failures, simply for the want of a little experience.

QUESTIONS AND ANSWERS.

Q. What kind of a boiler do you use?—A. Any kind of a boiler that has a bottom either concave or flat, or an old fashioned washpot. It is the only machine that will work in any kind of a boiler.

Q. How can you have a flow of water at the rate of eight to ten gallons per minute in a boiler holding eight or ten gallons?—A. The same water is used over and over again;

And in order to be thus used it must pass down through and through the fabric, and this, with soap and heat, is what does the work.

Q. How can you use a large quantity of water in a boiler already full of clothes?—A. Fill the boiler three quarters full of water: as soon as the water commences to work put in the clothes. They absorb it.

Q. Can you wash flannels and coloured clothes?—A. We wash anything that can be washed. Flannels and coloured clothes need but little soap, and from five to ten minutes of the full operation of the washer. Flannels should be rinsed in hot water. It is the change from boiling to cold water that contracts the fibre, causing them to shrink. Any Fuller will tell you so. Fugitive prints will part with their colour by this or any other process, but fast colour will not be injured. It is not best, as every housekeeper knows, to use strong soap or alkalis in washing coloured goods. Many prints and other coloured fabrics have some kind of acid as a base, and if alkalis are used strong enough to destroy this acid the fabric will part with its colour. This is why of English Scarlets, which will not fade in the sun, or by ordinary washing, are ruined by strong soaps. These facts are worth remembering by the inexperienced housekeeper.

Q. Can you use the common soft soap of the farm-house?—A. Yes, if good.

Q. Is it not better to put very dirty clothes to soak over night?—A. No.

Q. Will your Washer remove the streaks from dirty wristbands and collars, such as farmers and mechanics wear, after having been worn a whole week, as they usually are? Will not those require extra care in rinsing?—A. The Washer will cleanse the dirtiest clothing. Much soiled portions may require a second operation to remove the dirt entirely. Give the clothes a thorough rinsing.

Q. We sometimes find a white scum on top of the Washer. What is the cause of this?—A. The water is hard. When soap is added to hard water, a chemical change takes place. Certain substances in the water having an affinity for the alkali of the soap, unite with it, thus setting free other substances; these are precipitated and do fall to the bottom or rise to the surface in a whitish scum, according as their specific gravity is greater or less than that of the water. This is why it is impossible to clean fabrics with hard water. It may be softened by the use of borax or sal soda. Pure rain-water is the best of any method of washing. When the scum referred to above is found on the Washer after using, clean with a little cast oil.

Q. How can it be possible for so simple a thing to cleanse fabrics?—A. If you will study the philosophy of the Washer carefully and intelligently for a few moments, and consider what is required to remove dirt from clothing, you will ask: "How is it possible for it not to clean fabrics?" A gentleman, writing upon this principle, says: "I must own that when I first saw the Washer I was utterly incredulous as to its cleansing powers. My family were still more so. In fact they had no faith in washers of any kind; but, being strongly urged by a friend who had used the machine successfully, I concluded to try one. We made the first trial with a good many mixings. In fact, I could not see how so simple a thing could wash clothing. But when I saw the water pouring out from the discharge pipe at the rate of 8 or 10 gallons per minute, and when I reflected that this amount of water must pass through the clothes twenty or thirty times in the course of an ordinary wash, my doubts began to give way. I saw that there was both philosophy and common sense in the process, and it was impossible that it should not prove effective. I am now a firm believer in the Washer, and trust it will find a place, as it deserves, in every household."

The foregoing treatise sets forth as explicitly as possible the merits of the Improved Model Washer and the mode of operating it.

The Washer is made entirely of metal, is non-corrosive and indestructible. Not a particle of wood in its construction, not a pin, rivet, bolt or nut, consequently nothing to get out of order.

PRICE ONLY \$3.

Agents Wanted Everywhere.

SEE ADVERTISEMENT ON PAGE 2.

FOR TERMS AND TERRITORY ADDRESS,

The Improved Model Washer and Bleacher.



Pat. Aug. 2, 1884.
W. Dennis, Toronto.

OPINIONS OF THE PRESS.

SARNIA WEEKLY CANADIAN: "The Model Washer—one of the neatest, simplest and most useful household inventions of late years—is the Model Washer for which our townsman, W. Alex. McLagan, is agent. Housewives who have used it all agree in pronouncing it, if not perfection, yet something a very great deal nearer it than washing machines generally prove to be."

THE CANADIAN BAPTIST: "From personal examination of its construction and experience in its use we commend it as a simple, sensible, scientific and successful machine, which succeeds in doing its work admirably. The price, \$3, places it within the reach of all. It is a time and labour saving machine, is substantial and enduring, and is cheap. From trial in the household we can certify to its excellence."

CANADA PRESBYTERIAN: "The Model Washer and Bleacher which Mr. C. W. Dennis offers to the public has many valuable advantages. It is a time and labour saving machine is substantial and enduring, and is cheap. From trial in the household we can testify to its excellence."

DOMINION CHURCHMAN: "Having tested the Model Washer and Bleacher, sold by Mr. Dennis, 213 Yonge Street, Toronto, we can heartily recommend it. Its work is performed thoroughly, and the saving in labour is so great that, combined with its cheapness and simplicity, should bring it into use in every household."

EVANGELICAL CHURCHMAN: "We desire to direct the attention of our readers to the advertisement by Mr. C. W. Dennis, which will be found in our advertising columns. The Model Washer and Bleacher has many and valuable advantages, and from personal trial in the household we commend it as a simple and most successful machine."

TORONTO TRUTH: "One of the horrors of everyday life is 'washing day,' which comes with such persistent regularity week after week. A dreadful necessity, men have turned their attention to mitigating its misery by the introduction of machinery which will lighten the labour and make it less slavish. Among the many machines brought before the public with this end in view, the Model Washer and Bleacher, patented by C. W. Dennis, 213 Yonge Street, Toronto, is certainly one of the very best. It is constructed on strictly scientific principles, and does all, and more than all, that is claimed for it. Washing is made light and easy, and the labour becomes almost a pleasure. It saves time and labour, is substantial and cheap, and very enduring. No rubbing is required, and the clothes are not, therefore, worn out 'in less than no time,' as is the case in the ordinary method adopted. Its price is placed at the low figure of \$3, and if not found to be all that is claimed for it the money will be refunded."

TORONTO TRIBUNE: "In the olden times and in semi-barbarous countries to the present day, apparel was cleansed by beating it between two flat stones. The modern washboards and the numerous washing machines operated on the same principle are on a degree less destructive to clothing than the former process. The idea that hard rubbing is necessary to get the dirt out of articles is erroneous, and the only reason why hard rubbing does take the dirt out is that the water and soap used are forced through the texture with considerable force and carry the dirt along with them. Now if this can be accomplished by a process that saves the great wear and tear of rubbing, a very important point is gained. Clothing will wear ever so much longer, buttons will stay in their places and the discomforts of 'washing day' be greatly alleviated, to say nothing of the saving of labour. With this end in view the Model Washer was invented, and there is no gain-saying the fact that it does its work effectively. To those ladies especially who are in the habit of doing their own washing, the Model Washer is a boon for which they may well be thankful, while the price is so low that none need be without them."

NEW YORK TRIBUNE: "We are often asked our opinion as to the best Washing Machine in the market, as there are a great many kinds. We do not hesitate to say that the cheapest, most durable and best washer in the world, is the Model Washer."

TESTIMONIALS.

Thousands of Testimonials Like the Following can be Shown at my Office.

Said one lady, "I would take the carpet off my floor, and part with it sooner than the Washer."

From Nova Scotia's eastern shore
To B. C. in the west,
They all pronounce with one accord
It is the very best.

Admaston, March 9, 1885.

C. W. DENNIS, Esq.

DEAR SIR,—Enclosed you will find the sum of \$—for which you will please forward me by express to Renfrew one doz. Model Washers and Bleachers.

Send by Canadian Pacific Railway to Renfrew, and oblige

Yours, etc.,

GEO. G. GILLAN.

Colborne, March 11, 1885.

Mr. C. W. DENNIS, TORONTO.

DEAR SIR,—Find enclosed to pay for half-a-dozen Model Washers. Send at once by freight and oblige

GORDEN ESTATE.

per G. A. G.

Jarratt's Corners, Jan. 19, 1885.

C. W. DENNIS, Esq.

DEAR SIR,—Enclosed please find—for two dozen Washers and Bleachers, one for Mr. Turcotte and one for me. Please pack all in one box as it saves freight charges. Please send by freight to Orillia.

Respectfully yours,

J. H. CLAPHAM.

Carlyle, April 26, 1885.

Mr. C. W. DENNIS,

213 Yonge St., Toronto, Ont.

Sir,—Your "Model Washer" came promptly to hand, with it we are well pleased. Some of our neighbours desire me to get them some. Will you kindly furnish me immediately with your wholesale prices.

Yours, etc.,

REV. W. C. WILSON,

Carlyle, Assa., N.-W. T.

Read the following certificates signed by a number of the first citizens of Dartmouth, N. S., and to which many more could be easily added:

THIS IS TO CERTIFY that, having tried the Improved Model Washer and Bleacher, we have pleasure in recommending it as a great saving of time and labour on wash days, and when used according to directions cleanses equally well cottons and flannels, leaving them much better in appearance than when washed by the ordinary process.

Rev. P. M. Morrison, E. Mairson, Mrs. G. Tait, Mrs. J. Lawlor, A. Wisdom, J. Haudley, John Crook, Frank Mumford.

Brampton, March 13, 1885.

DEAR SIR,—I want you to send me half-a-dozen of your Washing Machines and one wringer, for which I send you—Send them to-morrow if you can, or Monday, to Brampton by express.

THOMAS McCONNELL,

Brampton, Ont.

Cardinal, Feb. 28, 1885.

C. W. DENNIS, Esq.

DEAR SIR,—Enclosed find post office order, for which please send me one dozen Model Washers, and the agency for the Township of Edwardsburg (Cardinal Village included). Send by freight to Cardinal Station. Send the last patented.

Yours, etc.,

JAS. M. THOMPSON.

Wales, Ont., March 12, 1885.

C. W. DENNIS, Esq.

DEAR SIR,—I received your sample Model Washer and have tried it and think it works to perfection. Everybody that has tried it thinks it works to perfection. How many sizes of Wringers do you handle, and what is your trade price for them? Have you an agent for Osnabrock Township yet? Hoping to hear from you on the above, I remain

Yours truly,

FRED WARREN.

Jarratt's Corners, Jan. 6, 1885.

C. W. DENNIS,

DEAR SIR,—Please send me one dozen Washers and Bleachers.

J. H. CLAPHAM.

Petrolia, Ont., July 15, 1885.

We, the undersigned, having used your Model Washer for some time, take great pleasure in recommending it to any person who may need one. It does its work well, and we consider it the best in the market:—Jno Dunfield, M.D., Mrs. Geo. Primmer, Mrs. D. Hawken, Mrs. J. Rogers, Mrs. S. Martin, Mrs. J. Hessey, Mrs. Ford, Mrs. A. McDonald, Mrs Temple, Mrs. Geo. Fraser, Mrs. S. Mitchell, Mrs. Mary A. Mann, Mrs. T. K. Thompson, Mrs. M. Graham, M. A. Freeman, Mrs W. Husband, Mrs. Wm. McNeil, Mrs. Mary Gorman, Mrs. McGorman.

Tooswater, March 18, 1885.

Mr. C. W. DENNIS.

DEAR SIR,—I write to inform you that I have received the Model Washer and Bleacher all right. It has proved quite a success. Some of my neighbours have had a trial of it, and they highly esteem it for the work it has done. There is no mode of washing that can equal it. It is my real opinion that you will be able to dispose of quite a lot of them around this locality. You may guess there was some laughing when I got it by the folks round here. Some thought it would dance through the boiler; some said it would dance the Irish jig; but I assure you it has danced a jig that pleases them all. They call it now the Irish washerwoman. So I think when my friends have all got a trial of it, you will be receiving quite a few orders. I have also received the receipt for the money I sent you. Hoping you will do a good business from those around here.

I am, Sir,

Yours respectfully,

JAMES CARSON,

Tooswater, Ont.

C. W. DENNIS, PATENTEE AND MANUFACTURER, Toronto Bargain House, 213 YONGE STREET, - TORONTO, ONT.

"The best paper of the kind published in Canada to-day" — *D. Thom. News.*

THE RURAL CANADIAN,

— WITH WHICH IS INCORPORATED THE —

FARM JOURNAL, CANADIAN FARMER & GRANGE RECORD

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The Rural Canadian.

TORONTO, OCTOBER, 1885.

THE AGRICULTURAL FAIRS.

The season of the agricultural fairs is now almost over, and it must be remarked that on the whole it has been a remarkably good one. From all parts of the Province the accounts of the local exhibitions are flattering. In grain and roots, in live stock and dairy products, in manufactures and the arts, Ontario has never made a better display. The Provincial Exhibition and the Industrial Fair have far exceeded any former attainment; and the stranger who wished to study the country, and to see what has been accomplished in a territory that half a century ago was almost all wilderness, could not have failed to be struck with the wonderful evidences of progress which at these exhibitions were displayed before him. The Provincial deserves to be regarded especially as an agricultural fair, and in live stock and animal products, grains, fruits and vegetables, it was unquestionably a grand exhibition. The leading feature of the Industrial, on the other hand, is the display of manufactures; although in the agricultural lines it is a close second to the Provincial. As an all-round show it was probably superior to the Provincial, as it certainly was in the throng of visitors and in its financial results. Both institutions have a good educating effect, and we doubt if either has been equalled this year on the continent. But it is not unlikely that the county show or the township show may in its way do more good than either the Provincial or the Industrial, by encouraging the farmers of the country to higher efforts; and, in their place, they deserve a liberal measure of encouragement and recognition.

MIXED FARMING.

The farmers in our North-West country are sadly discouraged when their wheat crop meets with partial failure. One of their troubles is that all their eggs are in one basket. They have hitherto been depending far too much on wheat-growing. They have scarcely a product for the market besides wheat, and this, too, although 75 or 80 per cent. of its market value is required for production. We manage these things better in Ontario. Here we have mixed farming on a very large scale; and while it is true that there are lines which can be followed here which cannot there, yet it is obvious enough that farmers in the North-West might profitably devote their time and energies to something else besides putting a certain number of acres in wheat. There is a splendid country for grazing purposes, and not only could they produce beef and mutton cheaply and abundantly, but they could also go largely into the production of butter and cheese. During the severe depression of 1874-9 the farmers of Ontario scarcely felt the pinch, although in successive years their wheat crops were a succession of failures. But they grew oats, barley, roots and hay in abundance, and they produced beef, pork, mutton, butter and cheese, and their loss in wheat was more

than made good in the increased returns from these products. Our farmers have clearly demonstrated the necessity of mixed farming, and we feel sanguine that year by year they will prosecute it on a steadily growing scale and with steadily improving results.

A POOR CROP OF SPRING WHEAT.

Farmers who have grown spring wheat in Ontario this year have met with a severe reverse, nearly one-half of the crop having been destroyed by rust. Of course this means that in many localities the loss has been nearly a total one, for there are parts of the Province where the injury done was comparatively slight. Well drained fields that were sown early did not suffer to any great extent even in sections where the rust was most destructive; for not only was the grain well advanced towards maturity when the blight appeared, but the conditions which favoured it were largely absent.

It is well known now that rust itself is a species of plant life, that it will not grow excepting from seed germs, and that it is only on plants whose vitality has been lowered and under favouring conditions of weather that the germs will take root and grow. The common idea is that the producing cause is rainy and muggy weather. It would be just as correct to say that soil, moisture and warmth are the producing cause of wheat. Everybody knows that without the seed-grain there could be no wheat plant, and that it is only in favouring conditions that the seed germinates and develops into a plant. So it is with the rust, which is also a vegetable growth. The spores or seed germs float like fine dust in the air, and where all the conditions are suitable they take root and grow. If the land is dry, and the plant life upon which it falls is either in an advanced ripening stage or is strong and vigorous enough to cast off the parasite, little harm will be done. But if the land is wet and the vital energy of the plant is low, the rust germ finds suitable lodgment, and like every other parasite it thrives at the cost of the plant life that nourishes it.

It is a serious matter that from seemingly so slight a cause the country should meet so great a loss, for it is probably not less this year than 6,000,000 bushels of grain, or say \$4,500,000 in cash. That such a loss is, to a large extent, avoidable is almost obvious; and thorough drainage will at once suggest itself as the true remedy. We are glad to know that the farmers of Ontario are not unmindful of the value of drainage for other reasons besides as a means of reducing the blighting effects of rust to a minimum; but they can only be said to be beginning to improve their lands in this way, and at the past rate of progress many years must elapse before they have finished the work. An impulse is sometimes needed to urge forward any measure of reform, and we do not doubt that the loss to spring wheat this year will be followed by a more general effort than has been witnessed for some time to drain and underdrain the farm lands of the Province.

We have had a heavy crop of rust; that is certain. And it is well that farmers should not overlook the fact, for rust may easily be propagated by sowing seed that has been infected by it. It is not improbable that considerable areas of land which have grown spring wheat this year have been already sown to fall wheat. We would suggest that in any such case the ground should be liberally sown with salt, in order to destroy the rust germs in the soil. We would also advise farmers when sowing the next crop of spring wheat to thoroughly prepare their seed grain before committing it to the ground. Steeping it for a few hours in a strong brine will be

found very effective, and if this is done the risk of another rust-blight next year may be very considerably reduced.

AN INTERESTING FACT.

Observations made many years ago by Bous-singault showed that a certain quantity of heat was required for the growth and maturity of grain and other crops, and that the duration of the life of a plant is longer or shorter as the mean temperature of the cycle is lower or higher. "In other words," he remarked, "the duration of the vegetation appears to be in the inverse ratio of the mean temperature; so that if we multiply the number of days during which a given plant grows in different climates by the mean temperature of each, we obtain numbers that are very nearly equal." For example, wheat in various parts of France was found to mature in 131 to 147 days, under a mean temperature of 61° to 56° F., or an aggregate heat of a little over 8,000° F. We are not aware that any observations of this nature have yet been made in Ontario; but the subject is an interesting one and careful data collected at different stations in the Province would have a positive and practical value for farmers by enabling them to determine what crops can be planted with safety in seasons of average length and temperature. But experience proves that there are many crops which will mature in all but seasons of very exceptional character; and there are two ways whereby we may aid nature in providing the necessary volume of heat. One is to get the land ready for the seed at the earliest possible time, as by fall ploughing. Another is to drain off all superfluous moisture. And the present is the season for such works to be carried on.

GETTING DANGEROUS.

Every thunder shower that occurred during the past few years has left a sad memento to somebody, as a house shattered, a stable or barn in ashes. Twenty or thirty years ago a barn or house struck by lightning was a rare phenomenon, but then trees were shattered and often burned; now those tall forests that served to receive the sun's electricity, and throw up the ground electricity to the clouds, have been cleared away, and the only high objects in the country are houses and barns, and the barns are being raised on stone walls, and made larger, so that those buildings, under present conditions very dangerously high and attractive to lightning, will have to be protected by conductors of good quality, else farmers and insurance companies will suffer heavily. To have proper protection none but copper conductors with platinum points should be used, since the things peddled about the country as lightning conductors, made of galvanized wire, are next to useless for the purpose intended, from the cause that iron is only a poor conductor, and zinc is a non-conductor, so that galvanized iron is of little use for this purpose.

Insurance companies that have many risks in country districts should use every inducement to get their patrons to put up copper conductors in all the cleared parts of the Province. It will well repay the small outlay, as a good copper conductor properly put on will so effectually neutralize the building and locality that a shock on it is a natural impossibility. We are apt to conclude that because we were not in the last storm-centre, or because our barn has escaped so far, we may always escape; that is only counting our chances, which are but poor at best, as the storm will always come to the ground by the tallest object, unless the ground and building be negated by a conductor.

WHY IT COMES.

Though electricity is now used to carry messages across the ocean, to light our streets, and harnessed to carry us along the road, yet many who read *THE RURAL CANADIAN* have only a limited idea of its modes of action when about to leave the clouds, or why it leaves the clouds. To discuss this subject a few general facts are here given, and every one who is within reach of a library is requested to get a good work on the subject for the long winter evenings. Farmers, above all others, should instruct themselves on the laws and forces of nature, since our operations are guided and governed by natural laws. Electricity, like heat and gravitation, is a force invisible when not excited, has no weight, and owes its origin to the sun. Heat and electricity are twin sisters, both useful as servants when under control, but dangerous when not under subjection. This force is of two kinds, or rather two qualities, which have a power of action for each other; that which comes from the sun and manifests itself in the thunder-cloud, and that in the earth and animals and objects on the ground. So active and sensitive are these two electrical states that what produces a commotion in one, generates a similar motion in the other, until the lightning of the cloud meets that of the ground, when a union takes place, making a loud report.

The same law which regulates the conductivity of heat applies, with a few exceptions, to electricity. Metals conduct heat well, and in different degrees, so they will electricity. Lead and zinc conduct heat poorly, melt easily at a low temperature, and are almost non-conductors of electricity. Glass scarcely conducts heat, and will not conduct electricity. Copper, gold and silver withstand heat well, conduct it well, and are also excellent electric conductors.

In contact and dispersion heat and electricity follow the same law. The point of an iron rod will burn before the iron will melt. A deeply carved stove will throw more heat than a smoothly polished one. Electricity will pass rapidly from a point, while from a smooth ball or plane surface it will not disperse until overcharged, and then go off in a shock.

These general facts will enable any one to get an idea of the reason why lightning comes to the ground, why it chooses the highest objects in its course, why bank barns should have a copper rod run along the roof an inch or two higher than the ridge, with points all along its length, and principal points five or six feet high directly over the highest points which connect with the ground over the peak of the gable walls, with an unbroken connection with the earth to throw up the ground electricity on the approach of a storm. To be perfect the cardinal points must be of a metal that will neither rust nor melt, and that is platinum. Do not let us spend our money in galvanized iron that is of little use as a road for electricity to travel on. S. D. G.

HARVEST HOME.

The annual "Harvest Home" meeting of the Markham Farmers' Club was held on the farm of Mr. William Rennie, seedsman, of this city, in the township of Markham, on Tuesday, September 29. The day was very fine and the turnout of members of the club with their families and friends was large. The early part of the afternoon was spent in viewing the farm, its crops, stock, etc. As has already been said in these columns, the farm is one of the finest in Markham Township and probably in the Province. Under the management of Mr. Rennie it has become noted far and wide as a model farm, and well it deserves the name. At three o'clock a meeting was organized by the President of the

Club, Mr. John Gibson, taking the chair. In opening he expressed his pleasure at seeing so many present, and proceeded to review the work of the club for the past year and the many previous years of its existence. These "Harvest Home" gatherings had been a source of much social pleasure, as well as profit, to them. They here, as at their regular meetings, discussed matters of general interest to themselves as agriculturists, and all were benefited. He closed his remarks by calling upon Professor Brown, of Guelph Agricultural College, to address the meeting. Professor Brown's remarks were listened to with much interest, many practical hints being thrown out, which will serve for future topics of discussion.

Professor Brown was followed by Messrs. Frankland, W. P. Page and others, after which a general discussion was held, when the meeting was closed after a vote of thanks being tendered Mr. Rennie for his hospitality and suitably replied to by him.

All present were then invited to lunch prepared by Mr. Rennie, to which ample justice was done.

These annual gatherings, held for several years past on Mr. Rennie's farm, are looked forward to with much interest and each year better attended. In their social character they are a great success; in their educational character they serve a good purpose, as farmers cannot well look over a well tilled and systematically managed farm without carrying away with them some practical information that will be of advantage to them; besides a spirit of emulation is aroused, and a united determination to improve is the result.

Let there be more "Harvest Home" gatherings among farmers.

THE DIFFERENCE.

A farmer of a speculative turn told a story the other day of real significance. He visited a farmer, a few miles from his home, and saw in the fields a few calves, fairly good, but not of extra quality, except as, it was claimed, in breeding, the calves were half-bred Short horns. Commenting upon them, our visiting farmer said:

"You have very fine calves, but not quite as plump as they ought to be."

The reply was: "I want to sell them calves. Hay is short; can't keep all my stock this winter. Something has got to go, and I'll sell the calves."

"What will you take for them?"

There were four which our speculative farmer thought he would take at a low price, but he got the answer:

"Make me an offer. I'm going to sell the calves, and if your offer is fair, you'll get them."

"Well, let me see. It is now September. I will have to feed the calves, if I buy 'em, a long time to make anything out of 'em. I'll give you \$10 for the four."

"Take 'em," was the ready response.

So, in journeying homeward, the purchaser passed another farm where fodder was short, and found another lot of calves under similar conditions. He bought four more, the eight cost \$20. He took the calves home and turned them in a small field where the pasture was moderately good, gave them slops, a little gram and good care for six weeks or two months, when a neighbouring farmer, who stopped for an interchange of courtesies, saw them and said:

"I would like to buy those calves. What will you take for them?"

"Ten dollars apiece."

"Well, I'll take 'em."

So he became the purchaser, and having eight he had a desire to get more; so he looked around and found enough to make about twenty. These

calves he fed through the winter, through the next summer and until the first of this month, when he sold the most of them to a butcher at \$22 a head.

Now, our speculative farmer knew a neighbour who had two that he was feeding liberally. He observed them from time to time as he passed the place where they were kept, and late in autumn, when the calves were not more than nine months old, he thought he would buy them. So, one day in passing, he called and made his errand known, when the farmer said:

"You're too late. I sold those calves a little while ago for \$30 apiece."

That is the difference. Two calves about nine months old brought \$60, or \$30 apiece. A dozen others kept through two summers, one winter and half another winter, sold for \$22 apiece. That is the difference between good care and good feeding and hap-hazard ways that never bring profit.—*The Husbandman.*

A CANADIAN FRAUD—"THE FIRESIDE FRIEND."

The Fireside Friend is said to be the name of a paper, claimed to be published at Toronto, Ontario, by Messrs. Burns & Russ. Messrs. B. & R., like Rory O'More, believe that "there's luck in odd numbers." They propose to give to the ninety-ninth, the one hundred and ninety-ninth and the two hundred and ninety-ninth names, "received and registered on our books," premiums in cash, and parlour organs. It is rather singular that this offer does not extend beyond the two hundred and ninety-ninth name, though this is probably to induce people to hurry up, in the chance of being one of the ninety-niners. A lady in Iowa City, Iowa, received a printed note from Burns & Russ, informing her that hers "was the one hundred and ninety-ninth name that we received and registered on our books, and that you are entitled to receive from us one Estey Organ, worth two hundred and twenty five dollars." Then follows a request for shipping directions, and, of course, for one dollar, "to pay packing and cartage." The lady who was thus notified has written several times, and has had no reply. The document calling for the "Estey Organ, worth two hundred and twenty-five dollars," was sent to the Bank of Toronto, who returned it, saying, "no such firm" there. Where is the *Fireside Friend*? Can any of our readers inform us?

[The above we clip from the September *American Agriculturist*. We know of no such paper either in Toronto or Canada.—ED., *RURAL CANADIAN.*]

ATTENTION is directed to the advertisement on another page of this issue of *THE RURAL CANADIAN*, of the Improved Model Washer and Bleacher, manufactured by the patentee, Mr. Dennis, 213 Yonge Street, Toronto. This little machine is so simple and low-priced that many have doubted the claims made for it by the manufacturer. Nevertheless, hundreds who are now using them speak in the highest terms of its utility and durability. The Improved Washer is so simple in construction that it is almost impossible for it to get out of order, and even a child can readily understand and operate it. Mr. Dennis has been long established in Toronto and our readers need not hesitate to remit their money with the order.

SIR J. B. LAWES says that of dry food eaten by sheep it has been found that these animals stored up an increased weight of 12½ per cent., while cattle only laid up an increased weight of 8 per cent.; or eight and a-half pounds of dry food increased the live weight of sheep as much as twelve and a-half pounds did the live weight of cattle.

Bees and Honey.



OFFICERS OF ONTARIO BEE-KEEPERS' ASSOCIATION, 1885-6.

President, S. T. Pottit, Belmont; 1st Vice-President, Alton Pringle, Sooby; 2nd Vice-President, Mrs. R. McEchnie, Angus; Secy.-Treas. Wm. Couse, Meadowdale.

EXECUTIVE COMMITTEE—D. A. Jones, Beeton, S. Corneil, Lindsay; Jacob Spence, Toronto; Dr. Thom, Streetsville; R. McKnight, Owen Sound.

OUR APICULTURAL DEPARTMENT.

It will be seen by a reference to the proceedings of the Ontario Bee-Keepers' Association, a report of which appears in our present issue, that a considerable difference of opinion existed among the members as to the Association having a recognized organ. It was decided to refer the matter to a committee; but the committee has yet to be nominated by the President, and cannot report until a year hence. The question is therefore, in the meantime, left undecided. As, however, the bulk of the members of the Association receive THE RURAL CANADIAN, and bee-keeping forms an important branch of rural economy, which is destined to receive increasing attention from the farming community, the department headed "Bees and Honey" will be maintained, and every effort put forth to render it valuable and useful to apiarists. The publisher has pleasure in announcing that these columns will be edited by an enthusiastic practical bee keeper of twenty-one years' standing, who, besides furnishing original articles embodying the results of his own experience and observation, will "boil down" the more interesting and useful contents of the bee-journals. All matters relating to bee-keeping will be freely discussed from an independent standpoint. Communications for this department will be welcomed at all times, and inquiries for information on practical bee-culture cheerfully answered as far as possible. THE RURAL CANADIAN will be always ready to lend a helping hand to the Ontario Bee-Keepers' Association in its endeavours to promote the interests of apiculture.

OCTOBER BEE NOTES.

BY J. C. THOM, M.D., STREETSVILLE.

As promised in the notes of last month we have a few directions to give for wintering the stocks the bee-keeper has in present possession. This may be done in two ways, and it is for the bee-keeper himself to decide which plan he shall follow, and then persevere with it until he attains the measure of success that experience will in the end put him in possession of. The first way is in a special repository built for the purpose; the second is a good cellar. The cellar being most generally obtainable, it should be made thoroughly dry, if not already so. Make a partition across one part of it (the darkest and quietest end), leaving room according to the number of stocks you desire to winter. Construct benches a foot or two high for hives to be placed on, and your repository is ready. Much has been written on the subject of sub-earth ventilation, but if the air of the cellar can be kept pure and sweet by the ventilation you already have, you will find it sufficient to keep the bees in health. Keep the temperature always above freezing.

Some sunny day in early November remove the honey-boards and place a sheet of factory beneath them. About the 20th or 25th of the same month will be a suitable time to place stocks away. Remove covers and honey-boards, leaving quilts only over the bees; lift them quietly on to the benches and leave them in quietude and darkness until the warm spring days arrive.

The owner of a few stocks may with advantage remove them from the cellar and give them a fly on any genial day of February or March, remembering to place them on the stands they severally belong to.

If open-air wintering is preferred, procure one of the many double-walled, chaff or sawdust packed hives, now so easily obtained of dealers, and they will prove a success in the majority of winter seasons. Exceptionally severe seasons now and then occur when they prove an insufficient protection. However, if stocks are in single-walled hives, place them close together in a row facing the east in a sheltered spot in early October. In early November remove them while you construct a protection for them, by laying a floor of boards long enough to accommodate your row of hives; set up posts at the corners, and nail boards around the floor, and in this box place nine inches or a foot of chaff; place the hives now on this, six inches or so from the front, and make a spout or trough the size of the entrance, reaching from each hive to an aperture cut in the boards. Nail up the boards to the post to form the box a foot or so distant from the back and sides of the row. When the box is filled with dry chaff to a level with the tops of the hives, remove the tops and honey-boards, substituting therefor a thick well-made cushion of chaff or cedar sawdust; raise the sides of the box high enough to cover the cushions with chaff six inches; cover all with a good rain-proof roof and the bees will be tolerably certain to survive an ordinary Canadian winter, provided all other conditions are right, such as having abundant stores and prolific queens.

NOTES FROM THE APIARY.

BY S. CORNEIL, LINDSAY.

THE HONEY CROP.

My honey crop averages about thirty pounds of comb honey and seventy pounds of extracted honey to the hive. From neighbouring bee-keepers I learn that their yield is about the same, in some cases not quite so good, in others a little better, owing to some localities being better than others. The yield is not so good as it was last year, and not more than one-third of what it was two years ago. On account of the scarcity of bees last spring and the lightness of the crop, the quantity of honey to be marketed is much less than it was a year ago and it should bring better prices.

STARTERS IN THE BROOD-NEST INSTEAD OF FULL SHEETS FOR NEW SWARMS.

In THE RURAL CANADIAN for July I stated that we were furnishing new swarms with starters instead of combs or full sheets of foundation. As all were treated alike I am unable to say how it affected our yield of comb honey; but I find that even where the swarms were hived on only four frames they built a good deal of drone comb. As a result we have about two hundred combs which cost very little for foundation; but they have an average from fifteen to twenty per cent. of drone comb, which is too much for the brood-nest. Next season we shall raise them to the upper stories for extracted honey and replace them with combs built on foundations.

CHANGING BEES FROM ONE STAND TO ANOTHER.

From the way robbers were nosing around one

of our hives a few days ago I suspected it was queenless, and an examination proved the suspicion to be correct, there being no brood and only very few bees, but abundant stores for winter. As bees and queens are plentiful at this season we shook three and a-quarter pounds of bees into one of Doolittle's nucleus boxes, which was placed in a dark cellar for three hours. A queen was then dropped in amongst the bees and the box left in the cellar till next morning, when the bees and queen were shaken down in front of the queenless hive and run in like a swarm. They remained where they were placed, and are now working away like any other colony. I consider the idea of using this box to make nucleus stocks, remove bees from one stand to another, and to introduce queens late in the season, worth more to me than my yearly subscriptions to all the bee papers amount to. The box is six inches wide, six inches high and ten and a-half inches long, inside measure. Two sides are of wire cloth, one of which is easily removed, in order to empty out the bees. There is a hole in one side large enough to take the spout of a large funnel into which the bees are swept from the combs, and in one end there is a smaller hole through which a queen may be dropped in amongst the bees.

No well regulated apiary should be without one or more of these nucleus boxes.

FEEDING TO PREVENT STARVATION.

Too much dependence must not be placed upon the quantity of honey swarms may have laid up for fall and winter. A day or two ago my son found two stocks which had commenced to carry out their brood and were at the point of starvation. They were swarms from colonies run for comb honey. The old stocks were storing well in the sections before they swarmed and probably on that account swarming was retarded. The swarms were hived on the old stand, and sections were put on at once. The bees having acquired the habit of carrying their honey above before swarming, they continued to do so while the honey flow lasted, leaving their brood-nest almost unprovided for. Late swarms particularly require to be looked after now. A little neglect will in many cases make all the difference between success and failure in wintering.

RESULTS OF THE HONEY SEASON.

BY R. F. HOLTERMAN, BRANTFORD.

The honey season is almost over, in fact in many places is entirely so, and what has been the result? Reports are very conflicting, many say it has been a season below the average and others report as high as 250lbs per colony. No doubt locality has something to do with this; but much more is owing to the strength of colonies when the honey season opens, and here some of the fine points in management come in. With few exceptions the bee-keeper who has managed to have his colonies strong when clover came in has had a very fair crop, averaging close on to one hundred pounds, with over fifty per cent. increase; but any one failing this has had but indifferent results, as basswood, although abundant as to bloom, was inferior in honey yield, as also thistle. Upon returning from Buffalo on business, I stopped over to see friend Ellis's apiary at St. Davids. He has an excellent locality, surrounded by broken land and hills abounding in season with willow, fruit bloom, clover, basswood, thistle, and in the fall buckwheat, boneset, golden rod and aster would make it a favoured spot alone; but there are only three more colonies within quite a radius and of these he has control, so he is enabled to keep his stock pure and monopolize the pasture. Some colonies had gained

several pounds since the 20th inst., and bees were gathering on the 29th lively. Friend Ellis had three colonies of bees particularly beautiful, and it was no surprise to hear that with good spring management he could obtain one hundred pounds of extracted honey per colony with ease. Of course we are not all so fortunate as to locality; but still, with a more uniform good management in spring, reports would be better and more uniform. By an effort on all hands to keep down impure drones our stock might be bettered, and better results obtained all around.

ONTARIO BEE-KEEPERS' ASSOCIATION.

The annual meeting of this organization held its first session in the City Hall, Toronto, on Thursday evening, Sept. 10th, at half-past seven. It was rather thinly attended, owing partly to other attractions in the city the same evening, and partly to the simultaneous holding of the Provincial Exhibition at London, which naturally drew bee-keepers residing in Western Ontario to their local centre.

The annual report of the Executive Committee was presented by the Secretary, Mr. Jacob Spence. It detailed the efforts made to secure statistics of bee-keeping, which had resulted in an arrangement for securing their collection through the Agricultural Department of the Ontario Government; referred to the disastrous effects of the severe weather last winter; and recommended a scheme of affiliation by which local societies might be represented in this organization. Mr. Spence also read the Treasurer's report, which showed a balance on hand of \$1238. The reports were adopted, and the scheme of affiliation laid on the table, to be taken up at a later stage of the meeting.

PRESIDENT'S ADDRESS.

The President, Dr. J. C. Thom, of Streetsville, then delivered the annual address, as follows.

Ladies and Gentlemen of the Bee-Keepers' Association of Ontario:

It being prescribed by the Constitution that the President deliver an annual address at the expiration of his term of office, in compliance therewith I have thrown a few thoughts together, which may serve to indicate the progress already made in the past few years, and the directions in which we are now tending toward further developments in the science and art of Bee-Culture.

Our art is eminently a progressive one, as the most casual observer cannot fail to notice, more especially if he be of somewhat mature years. Let him enter the well kept apiary of one of our progressive bee-men, during the month of July, we will suppose. Instead of the few weather-beaten, worm-eaten, weed overgrown homes, (save the mark!) of the tidy little insect, placed in the most neglected corner of the garden, which he remembers in his boyhood's sunny days, what does he behold? Why the long rows of neat, trim hives, shaded by the broad-leaved purpling grape, the avenues as closely clipped as the lawn of the millionaire. Swarming is in progress; but with the quickness born of experience, the golden queen is caged, other swarms return as at the word of command. He enters the bee-house where order and system reign, and while the busy assistants unclog the snowy comb and set the imprisoned nectar free, by a few revolutions of the extractor, he looks around on the shining cans and porty barrels, and when he is told that these are filling up at the rate of hundreds of pounds a day, the startled visitor cannot but exclaim that bee-keeping is indeed advancing in no uncertain manner.

There is another side to the picture however, as, since we last met in convention many have had to mourn the loss of their pets caused by the extreme cold of the past winter. The remedy, I have no doubt, will be eagerly discussed in this assembly, and while none can control the severity of the seasons, I am satisfied that compliance with a few prime requisites will always enable the apiarist to save such a large percentage of his stock as will permit of a steady increase from year to year. Such, at least, has been the experience of your President during the past ten years. The prime factors in safe wintering I have found to be a sufficiency of honey; young queens; non-intervention after the first of October, placing the stocks in a dry, quiet, frost proof repository, the temperature of which varies little from forty-two degrees, before severe frost sets in; and free upward ventilation.

A good deal of attention has been given during the past year to labour-saving appliances in connection with hives, and it would seem as if reversible frames, cases, and hives were about to be added to the appliances which the wily exhibitor places before the bewildered gaze of the incipient bee-keeper.

Among the discoveries of the past year, I may mention that the preservation of honey has been found to depend

on a well known constituent of the poison-see of the bee, namely, formic acid. This shows us that the sting serves not only as a weapon of defence, but possesses the power of infusing into the stored-up honey an antiseptic substance. Observers have noticed that bees in the hive, even when left undisturbed, from time to time rub off against the comb, from the point of their sting, a tiny drop of formic acid. This excellent preservative is thus, in minute quantities, introduced into the honey, in fact a sufficient admixture is essential to its existence as honey. These facts serve to explain why the stingless bees of South America store up very little more honey than is required for daily use. It contains no formic acid, and therefore will not keep any length of time. Fierbend in 1877 recommended formic acid as a means of preserving fruit from fermentation.

It gives me great pleasure to announce to you that we now have the *Canadian Bee Journal* an established fact, and from the patronage it has already received, it bids fair to be a success.

I am of the opinion that it would greatly promote the object so many are desirous of attaining (I refer to the *Apis Americana* or the perfect bee of the future), if under the auspices of the North American Bee-Keepers' Association, an Experimental Bee-farm could be established, in which races of bees from foreign countries could be thoroughly tested before being disseminated throughout the country. After having had the Asiatic races inflicted upon us (with a good intention no doubt), we are now threatened with the Carniolan. The Italian race ought to be maintained and cultivated as the best bee America has yet tested generally. I speak thus as, personally, very great loss has been sustained in exterminating the traces of other races from an Italian apiary, after they had been tried and found wanting. Many others have had a similar experience.

I would draw your attention to the desirability of the formation of a union among the honey producers of Ontario for the purpose of establishing a foreign market for our surplus product. The appointing of agents in Liverpool, London, Glasgow, Paris and Berlin would be a simple matter, and yet might save our home markets from becoming demoralized in the event of an extra good season.

The Foul Brood question has been relieved of the necessity for immediate legislation, by the kindly hand of the frost king removing most of the diseased stocks forever. The discovery of Mr. Cheshire, of England, of phenol as a cure for the dread disease has also greatly lessened the dangers of its appearance in an apiary.

A most favourable opportunity for an exhibit of Canadian honey presents itself in the Colonial and Indian Exhibition, which will be held next year under the patronage of H.R.H. the Prince of Wales. This is a rare chance for showing to the world what Ontario can do in the production of honey of a quality which, I am sure, will be excelled by no other colony of that Empire which girds the globe with the homes of her children.

I would suggest a revival of the Constitution by a committee appointed for the purpose. One of the points requiring attention is the payment of the travelling expenses of the executive and other committees that may from time to time be appointed by you. Members cannot be expected to incur expense as well as devote their time to furthering the general interests.

To conclude, notwithstanding an unfavourable season, Ontario again displays under the fostering care of the Toronto Industrial Exhibition the products of the dairy and apiary, in such quantities and of such unrivalled excellence, that it may truly claim to be the Western successor to Palestine of old, in being "a land flowing with milk and honey."

Rev. W. F. Clarke remarked that the President's able and interesting address was fruitful in topics inviting discussion and criticism. He thought the condemnation of foreign races of bees rather sweeping. It was really one of the European races, namely, the Cyprians, which was open to objection on account of their peculiarly irascible temper. He concurred with the President in his eulogy of the Italians, but thought they were improved by a dash of Asiatic blood. The Syrian and Palestine bees had some valuable qualities. They were prolific, gentle and industrious. If we could fix the best features of the Italian and Holy Land bees, we might be satisfied. We had, no doubt, existing strains that combined the best features of both races, and should endeavour to perpetuate these.

D. A. Jones was of the same opinion. He had experimented largely both with distinct and mixed races, and had come to the conclusion that a cross between the Italians and Holy Lands made the best bees for all purposes. He also thought a dash of Carniolan blood was an improvement. He would advise all who had apiaries of any extent to get at least one Carniolan queen. The main objection to them was that they very closely resembled the black bees.

J. B. Hall was glad to say he had not dabbled much in foreign races. A cross between the brown Germans and Italians was good enough

for him. He had tried the Carniolans, but did not find the difficulty Mr. Jones had spoken of in distinguishing them from the black bees. He thought there was quite a difference, especially when they were young, and the queens had dark zebra-looking stripes by which they might be distinguished from black queens. Mr. Jones agreed that, when young, Carniolans and blacks were somewhat different in appearance, but as they grow older they became more alike.

S. Corneil had tried the Cyprians, and thought they were excellent workers; but they needed very careful handling, as they were easily excited, and when aroused, were unmanageable.

Mr. Jones thought the Asiatic bees valuable in regions farther south, but a preponderance of Italian breeding made a more hardy bee, better suited to our severe climate.

A resolution was passed appointing a committee to communicate with the Government and secure its co-operation in making a creditable display of Canadian honey at the Colonial and Indian Exhibition to be held in Kensington next year.

A vote of thanks was passed to the President for his address, and it was referred to the business committee about to be appointed, to bring up any remaining points in it for discussion and action.

The question drawer was opened. The first question proposed was: "Is there any advantage in reversible frames?" Messrs. Hall, Corneil, Jones and Clarke discussed the question, their opinions, on the whole, being unfavourable to the use of reversible frames.

Another enquirer asked whether chilled brood was the same as foul brood, or would produce it. Both questions were answered in the negative, unanimously, in the discussion which followed. The meeting then adjourned.

SECOND SESSION.

The Association met in the City Hall on Friday evening, President Thom in the chair. After some routine business the subject of wintering was taken up.

S. Webster, of Toronto, gave his experience, which was a somewhat melancholy one. He must confess he did not yet know how to winter bees, but wanted to learn. Notwithstanding failure, he was still resolved to keep bees, and hoped in time to conquer the difficult problem of wintering.

R. McKnight, Owen Sound, said he was present to learn, and the majority of bee-keepers in the assemblage were also there as knowledge-seekers; was glad to see that the majority present were young men; had noticed the same on the Exhibition grounds; get the young men interested and the calling was sure to succeed. Wintering in its broad sense means a sufficient supply of food of the right kind, and a suitable receptacle to winter bees in, did not know anything of the value of sugar syrup as a feed for wintering purposes—there are many who do winter entirely on sugar syrup stores and who are eminently successful; was of the opinion that the question of substitution of sugar syrup stores in place of honey for wintering led consumers to the belief that the honey was adulterated also; he felt that if the bees were fed sufficient in the fall to carry them through to the first honey flow of the next season that there must of necessity be a certain amount of sugar syrup in the first extracting, which would give it flavour of sufficient strength to be easily detected. As a matter of policy he thought honey should be used, and outside of this he considered it the best anyway. During three years he had lost none through imperfect wintering—had lost a few this spring through robbing. As the greater number of bee keepers were so in a small way, he thought the best system of outdoor or clamp wintering was what should be explained.

Wintered six outside last winter, set them up near the fence and covered them over with roof, packed over and around with pea-straw. A neighbour wintered twenty out of doors and some indoors; those outside wintered equally as well as those indoors; lost one out of the twenty; he used an outer case and packed with sawdust; put sawdust around and left top-story on and packed it with sawdust. If one could afford it the best place for wintering is a bee-house.

Mr. Webster used cushions over his frames; as an experiment he had made a number, eight inches thick, of cork dust, and put ventilators through the cushions; could not find that it made any difference. He thought that a good many lost more bees than would pay for a good bee-house; he had been unfortunate with the rest, but he was bound to go on and he felt that in future he would succeed.

S. Corneil, Lindsay, uses woollen quilts; last winter he had packed forty colonies in twenty cases of two each; packed with cork dust, and in some instances so much was put in that it covered the top for a few inches around; after a hard frost, had noticed in the apiary that this layer around the edge of the cushions was frozen hard, the moisture of the hive having come up through the quilt; had always advocated woollen quilts, and was as much in favour of them as ever. The cost of quilts was about eighteen cents each.

Mr. McKnight said he was probably the first one who had advocated cork dust as a packing; had tried it and sawdust and chaff; found that the chaff became mouldy and solid and emitted a disagreeable odour; found sawdust always damp in spring, while cork dust was just as light and dry as when put in in the fall.

Mr. Webster endorsed the opinion of Mr. McKnight.

Mr. Corneil stated that cork dust could be obtained right in the city if a sufficient quantity was needed. It was cheap, too, and a splendid thing.

The President gave his experience. He had spent so much in trying to keep bees that he had estimated that his honey cost him \$1 per pound; this was before he had got much knowledge of the business. Before he had built a bee-house he wintered in common hemlock sawdust—got it in July and kept it in an old hen house—with good roof, but single-boarded. In November he set the hives in it, covered them all over, and put in a tube leading from entrances to door of house. They all came through in splendid shape; set them away just as he had taken them from their summer stands.

Rev. W. F. Clarke did not believe in cellar wintering, dark bee-houses, or earthen clamps. Bees are denizens of the upper air. They establish themselves in queer places, even the carcass of a defunct lion had served them for a hive; but none of their own accord ever made their home in a cellar. He did not deny that they could be made to survive during the winter in such places; but we want more than mere survival. We want them to winter in comfort, according to the laws of their being, and to come out in spring healthy, vigorous and prosperous. His name had been somewhat prominently before the bee-keeping public of late in connection with hibernation, which he proceeded to explain. Bees, like certain animals and many other insects, incline on the approach of winter to go into a state of torpor, or semi-torpor, in a normal condition. We should winter them in harmony with this law of their nature. All agree in the necessity of their having sufficient stores, and adequate protection from the cold. In addition to this, there must be a proper air supply. He believed this was best furnished in the form of a perpendicular column,

as that secured a gentle current by which the air was kept fresh and moisture carried off. It was unsafe to trust to the ordinary horizontal entrance for ventilation. That was liable to be stopped up with dead bees, ice and snow. He had devised a plan which he believed met the case. Removing the bottom board, he substituted a sort of hopper, like the hopper of a fanning-mill, which ended in a tube about four inches square. The hopper was enclosed in a box eighteen to twenty-four inches high. Air was admitted through inch auger-holes just under the cover of the box, which projected outside the hive sufficiently to admit of an outer case to be packed with chaff or sawdust. The chief object of the hopper was to allow dead bees to fall to the bottom of the box. He considered this of great importance, as accumulations of dead bees were a fruitful cause of disease. The hopper also allowed the dry faeces, comb chippings and all refuse to fall out of the hive. While he preferred the hopper, he thought a two-inch auger-hole through the bottom-board would secure a uniform air supply, and render all cleaning out of the entrances needless. His trial of the hopper-box plan last winter had been very satisfactory. He intended experimenting further the coming winter, and hoped others would do the same, to ascertain what ventilation was necessary to secure hibernation. One great advantage of bees hibernating was that they consumed very little honey. Another was that remaining quiescent, the old bees husbanded their vitality so as to give the colony a good start in spring.

Mr. Jones was not prepared to say that bees hibernated, but he was sure the quieter they were kept, the better they would winter.

John McArthur, Yorkville, said that last fall he had put forty-seven colonies away and came out with only eighteen; he used the Jones hive. Six of the forty-seven were wintered outside in the following way: Made boxes large and deep enough to take the frame—and six inches wide—so as to hold four frames; set this box in the inside of hive, longitudinally, and on these four frames wintered the bees; put them up in November. If there was not sufficient stores in the four frames he put surplus combs of uncapped honey on each side of this box, and the bees work from them through small holes in the box and store the honey in the inside combs; then the vacant space in hives was filled up with cork dust; used quilt and put cork dust on top of it. All of the hives were raised two feet off the ground. Had tried this plan for three years and never lost one. He lost most of those put inside.

Mr. Corneil concurred in much of what Mr. Clark had said; had explained his ideas on the subject in the journals. He had noticed an article in a late number of the *Scientific American* about mineral wool as a non-conductor, and thought probably it might be a good thing for wintering; it is used greatly by architects and builders for "filling-in" houses. Cost \$3.25 per 100 lbs., and there were about fourteen pounds to each cubic foot. The expense of packing a hive with this material would be from forty to fifty cents.

A communication from C. Blackett Robinson, Toronto, in reference to THE RURAL CANADIAN, the present organ of the Association, was laid over till after the election of officers. It was moved and seconded that the next session be held in the City Hall, on Tuesday evening next, the 15th inst. The meeting then adjourned.

THIRD SESSION.

The Association met according to appointment on the evening of the 15th inst., President Thom in the chair. It had been hoped that there would be a more general rally of bee-keepers on this occasion; but the attendance was little if any

larger than at the previous sessions. After the transaction of routine business and a short time spent in miscellaneous free talk the Association elected the following officers for the ensuing year: President, S. T. Pettit, Belmont; 1st Vice President, Allen Pringle, Selby; 2nd Vice-President, Mrs. R. McKechnie, Angus; Sec'y-Treas., Wm. Couse, Meadowvale. Executive Committee—D. A. Jones, S. Corneil, Jacob Spence, Dr. Thom and R. McKnight. A long discussion took place on the question, "What journal, if any, should be the organ of the Association?" The meeting was unable to agree and the matter was relegated to a committee which will report a year hence. A resolution was passed empowering the Secretary to grant certificates of delegation to any members who might be able to attend the forthcoming annual meeting of the North American Bee-Keepers' Association at Detroit. The meeting then adjourned until next year.

THE BEE AT ITS BEST.

When is the bee at its best? And in answer to that question we must say that depends upon what period of its existence the question relates. If I induce my bees to breed up late in autumn and then put them into winter quarters where they keep quiet till March heralds the approach of opening spring, and not much brood rearing has been carried on during the interim from going into winter quarters, many of us would say the bee was at its best under such conditions. That would have been the judgment of the writer a few months ago, but some things of late point to that condition of things as a little moonshiny.

Our bees we know did not breed after 25th September last fall, unless in one swarm the queen commenced to lay in November, which we strongly suspect she did do, and unless this were the case the main part of the bees which braved the rigours of our past cold winter were mainly bees hatched in August and before; but they came through the winter bright, and apparently as strong as in the fall. Here is another point which came to my notice a few days ago, which shows that bees may and do breed in winter. Mr. Pike, of Livermore Falls, a few days ago, informed me that late in November last, he superseded a black queen in a good stock, giving it an Italian queen of his own rearing in exchange. At the time of her introduction there was no brood in the hive. He placed the swarm in the cellar with others. His cellar was kept at a temperature ranging from 31° to 37°, the average being about 35°. This spring on setting out the bees upon the summer stands, this hive with the Italian queen introduced to black bees in November was found to have fully one-third of its bees pure Italians, and the colony in good shape and strong. The question well may be asked, are bees wintered in the cellar at so low a temperature as 35 degrees at their best?

There is one point I am fully convinced is conducive to putting the bee at its best, and that is to put each swarm to be wintered in proper shape for wintering at latest by the middle of October, or at any rate when the weather is warm enough so the bees will cap in the syrup it is best to feed them on for their winter stores. I am so well satisfied on the point of wintering for sugar syrup, that I do not hesitate to proclaim that the bee is only at its best when it sits down to its table in winter to an exclusive diet of pure granulated sugar syrup.

Another essential point is that the colony be fed sufficient to insure a full supply of stores to carry it through all contingencies till the 1st of May, at least. Because I do not consider the bee at its best unless it can calmly, with smiling countenance, feel beyond the reach of possible contin-

gency of lack of stores to foster its young during the coquetting of April with winter; enabling it to keep at home and snap its fingers at the weather till May wikes the willows and maples.

I don't believe it best to disturb the bees by feeding for stimulation, as it is termed, very much before May frogs peep and the swallows fly; nor then, if cold rain storms are on the docket and the wind is tempered from snow-clad hills. Cover the bees up warm in the fall—with chaff hives, if possible—and give them a thick covering of dry material above the bars and don't disturb them, only when absolutely necessary, till the swallows come. Thus, for the time of year, I believe, the bee will be at its best.

Bees fed at any season means accelerated activity. A little honey clandestinely obtained sets the whole colony in an uproar. When bees are fed in the evening, if the air is frosty, numbers will sally out of the entrance to make-believe they are bringing in stores from the fields. Nor do they forget the good luck when the morning comes. Numbers fly out and in unpropitious weather become chilled, and on the whole, I am of the opinion that, as a rule, feeding in April to stimulate to brood-rearing does not result in gain, but often is the means of a positive loss, as the increase of young bees no more than balances the loss of the old ones which come to an untimely end by the exercise of an unwise ambition.

Hence, I believe the bee is best let alone, to keep it at its best through the critical period of our changeable spring weather. But when May opens with warm nights as well as days, give all the feed they need, even if a little accumulates in the combs.

It is a bad sign to see immature brood carried out in the night and lying about the entrance. That is a pretty sure sign the stores are short. This condition of things should not be allowed to occur, but be sure and feed so that the contingency of long storms may be provided for in giving an abundance of feed at once.—*By L. F. Abbot, of the Lewiston, Me., Journal.*

OVERSTOCKING.

This question seems not yet quite settled, nor indeed can it well be, for various localities, while, say 1,000 acres in one place where alsike, white clover, basswood, or other good bee-pastures abound, may produce more nectar in a few weeks than some other ten thousand during a whole season. Then again comes the question, How far do bees fly? The *American Apiculturist* elaborately makes out, by estimates and calculations (as to the nectar production, bee-flights, hive, home consumption, surplus, etc.), conclusions which may be helpful to those wishing to consider in regard to particular locations how many stocks may be most profitably kept. Of course the nearer home they can gather a load the better, even if they do fly long distances where they can do no better. Let it be enquired, not what is the extent of their flight under peculiarly favourable circumstances, as for instance, when they are following a receding honey-flow on higher land, but how far do they fly on the average profitably in quest of honey? If we permit those of most ample experience to answer, they will tell us that forage must be within two miles of the hive in order to secure much gain in the surplus apartment, and that it will be more profitable to have it within one mile. Then we may place our apiaries three miles apart, giving to each one the pasturage of nine square miles, or about six thousand acres. Mr. Quinby preferred to place his yards no nearer than this, and thought about sixty colonies in each gave the best results. L. C. Root places a still smaller number in many of his yards. Adam Grimm noticed that when as

many as one hundred stocks were kept in a place, there was a diminution in the number of swarms, and that less surplus honey was made per colony. He concludes by saying that. "If not more than fifty colonies are kept in a place, and the yards are placed three miles apart, there will be no danger of overstocking in ordinary seasons." These are spring numbers, and it will be remembered that all of the authorities quoted were in good localities.

If fifty stocks are kept in a place and the number doubled it will require twenty-five hundred pounds of honey for their winter stores; nearly double this, or five thousand pounds, for brood-rearing and summer consumption. Therefore about four tons of honey will have to be gathered before any surplus can be stored. A yield of twenty-five pounds surplus per swarm, old and young, will require twenty-five hundred pounds more, or a total of ten thousand pounds. This is on the supposition that the comb is already built in which to store the honey. If comb foundation is furnished instead, call it one-half more, or a total of eleven and a-quarter thousand pounds. If the bees have to construct the whole comb, unless the hives contain too small a quantity of old bees in proportion to young, we shall have to double the first amount, making a total of twelve and a-quarter thousand (12,250) for a surplus of twenty-five pounds of comb-honey per hive. Then it figures up little over two pounds of ripened honey per acre; while many an acre will not contribute a pound of honey, it may still be granted that in the average season many more pounds will be produced. However, we may reasonably conclude that a range may be overstocked, and that this means not only loss of surplus honey, but also of bees as well. In this connection the subject of artificial pasturage and its effect on the welfare of both bees and bee-keepers may deserve to be considered; at any rate all concerned ought to be conversant with the range of his honey gatherers, and see to have full force at the right time and favourably situated for the best results.

TO BEGINNERS.

The *Kansas Bee-Keeper* has good advice to a correspondent on this subject.

Get a few colonies and commence business at once; get a good bee journal and read the way recommended therein, then practise what you read. Study and work, work and study; go at it with a will—persevere—aim to know all that is to be known about bees and about all the late improvements in bee-culture, and we have no doubt you will soon master the business. But do not expect to learn all this in one or even two years. We never remember a year in all our long experience in honey-raising but we learned something of real value in regard to the management of bees. Again, in starting you must learn not to be discouraged by reverses and difficulties, but learn to meet and overcome them all. We have some winters very hard on bees, you may lose all you have once or twice, but it will not always be so; you are learning every year; keep up courage then.

Many beginners have the idea that all they need to learn is simply methods of management, and therefore they pay no attention to the natural history or physiology of the honey-bee itself. This is not so. Not only to become really successful, should one be familiar with the appliances; he should also become familiar with the bee itself, its history, its construction, both anatomically and physiologically, he also should become familiar enough with botany to know the whole flora of the locality of his apiary. With all this knowledge he can at any time determine just what is needed to be done.

CREAM.

The flour of the family is usually latest to rise. A bar is a place where water is scarce and danger near.

"Doctor, what is the best material for a bathing suit?" "A bear skin."

BARON WORTH, the French milliner, knows more about the French beat crop than any man in Paris.

WOMAN is like an accordeon; you can draw her out, but she makes music when you attempt to shut her up.

"Good gracious," said the hen, when she discovered the porcelain egg in her nest, "I shall be a bricklayer next."

"WAITER, can you bring me a nice young chickon, smothered in onions?" "No, sah. We doesn't kill 'em dat way, sah. We cuts off d'er heads."

TEACHER—What is an engineer? Boy No. 1—A man who works on an engine. Teacher—What is a pioneer? Boy No. 2—The man that works the piano.

WHAT in the old version was called "leasing" in the new version is termed "lying, or falsehood." The real estate agents have brought this upon themselves.

A GENTLEMAN said to a minister: "When do you expect to see Deacon S. again?" "Never," said the reverend gentleman solemnly. "The deacon is in heaven."

SMALL BOY—Pa, when they install a minister, do they put him in a stall and feed him? No, my son, they harness him to the church, and expect him to draw it alone.

SPEAKING of a commercial traveller who was arrested for embezzlement, an exchange says: "He confesses his guilt." A drummer may own up to guilt, but to brass—never.

The young lady artist from the city went into the country to sketch a cow. She selected one with a ring in her (his) nose. They picked her up on the other side of a seven-rail fence.

He bowed and ventured to say: "Excuse me, I think I have met you at Zaratoga; my name is Moses." She: "Really, I do not recall your face; but your name has a rather familiar sound."

COMPARATIVELY speaking, the Smith re-union at Peapack, New Jersey, on August 26th, was a lacerating failure. There were only 4,000 of that family present. But it was a cold day, and the railway facilities were totally inadequate.

"Pa, who was Shylock?" Unitarian Paterfamilias (with a look of surprise and horror): "Great goodness, boy! You attend church and Sunday-school every week, and don't know who Shylock was. Go and read your Bible, sir?"

A YANKEE clinched his argument with an Englishman as to the relative size of the Thames and Mississippi by saying: "Why, look here, mister, there ain't enough water in the whole of the Thames to make a gargle for the mouth of the Mississippi River."

"MERCY on us, Bridget, what have you been doing?" Bridget (returning from the cellar with her hand full of lobster's claws)—"Howly Virgin protect us! I've just killed one of the biggest cockroaches a-crawlin' over yer cellar bottom that I ever see in me life!"

AN English visitor at one of the spas was complaining to a *garcon* at his hotel that the waters he took seemed not to have the slightest effect on him. "But, monsieur," replied the waiter who, it should be said, was under notice to quit his place, "it is necessary to be patient. I remember a lady last season who took the waters, and did not die until she had been here close upon six months."

The Grange Record.

OFFICERS OF THE DOMINION GRANGE.

OFFICE.	NAME.	POST OFFICE.
Worthy Master.....	Robt. Winkie.....	Blouhelsm, Ont.
" Overseer.....	A. B. Black.....	Amherst, N. S.
" Secretary.....	Henry Glendinning.....	Manilla, Ont.
" Treasurer.....	I. P. Bull.....	Davenport, "
" Lecturer.....	Chas. Moffat.....	Edge Hill, "
" Chaplain.....	Geo. Lethbridge.....	Strathburn, "
" Steward.....	Thos. S. M. Leod.....	Dalston, "
" Ass't Steward.....	Wm. Brock.....	Adelaide, "
" Gatekeeper.....	L. VanCamp.....	Bowmanville "

LADY OFFICERS.

Coro.....	Mrs. G. Lethbridge.....	Strathburn, Ont.
Pomona.....	T. S. McLeod.....	Dalston, "
Flora.....	C. Moffat.....	Edge Hill, "
L. A. Steward.....	E. H. Hilborn.....	Uxbridge, "

EXECUTIVE COMMITTEE.

Jabel Robinson.....	Middlemarch, Ont.
Robert Currie.....	Wingham, "

AUDITORS.

Chas. Moffat.....	Edge Hill, Ont.
T. S. McLeod.....	Dalston, "

OFFICERS OF ONTARIO PROV. GRANGE.

OFFICE.	NAME.	POST OFFICE.
Worthy Master.....	R. Currie.....	Wingham.
" Overseer.....	Thos. S. McLeod.....	Dalst. "
" Secretary.....	A. Gifford.....	Menford.
" Lecturer.....	D. K. Ledy.....	Peterboro'.
" Treasurer.....	R. Wilkie.....	Blouhelsm.
" Chaplain.....	E. Wright.....	Banks.
" Steward.....	Thos. Keaziu.....	Cashtown.
" Ass't-Steward.....	Wm. Brock.....	Adel. Ide.
" Gatekeeper.....	J. P. Palmer.....	Fenelon Falls.

LADY OFFICERS.

Coro.....	Mrs. C. Moffat.....	Edge Hill.
Pomona.....	G. Lethbridge.....	Strathburn.
Flora.....	E. M. Cryder.....	Dell.
L. A. Steward.....	J. McClure.....	Williscroft.

EXECUTIVE COMMITTEE.

Thomas S. McLeod, Esq.....	Dalston.
Chas. Moffat, Esq.....	Edge Hill.

AUDITORS.

W. H. White, Esq.....	Chatham.
S. Bollachey, Esq.....	Paisley.

FOR THE RURAL CANADIAN.

FAILURE.

We are not in possession of facts from other parts of the Province, but so far as the clay district of the Huron tract reaches, spring wheat is this year almost a total failure from the effects of rust. Late oats in some few places are also quite rusty. There are exceptional cases where rust has not struck in; but in the older settled parts of the districts these exceptions are few, and, what is still more unfortunate, the cause that makes them so few is general, and will soon be universal in Ontario, unless active measures be used to plant timber belts. Owing to the confidence in spring wheat, inspired by the results of the past two years, some farmers depended entirely on it, and others sowed largely and put in very little fall wheat, hence the failure falls heavily on very many, and injures all more or less. Some of our best and finest fields, under the best state of cultivation, have yielded least. It will be difficult to estimate the loss without a knowledge of the breadth sown, which may be approximated at about ten acres to each farm of one hundred acres. About ten per cent. of this may give five bushels to the acre, and the other ninety per cent. will not be worth threshing, being fit only for fodder.

CAUSE OF FAILURE.

In earlier times when an occasional patch was caught by rust, it was generally ascribed to the smallness of the clearings, newness of land, fogs, or something incidental to the early settlement, which would disappear as the place got cleared up. Experience now proves that our cleared fields are the worst rusted; that new and old have fared alike, rich and poor shared the same fate, except under particular circumstances, where land has a western aspect, or shaded from the early rays of the sun. It has been observed that some kinds of wheat rust more than others. Strong growers and gross feeders fare worse, which may be accounted for by the greater flow of sap than in fine standards; slow growers, though in a season like the present all kinds have suffered, were not sufficiently shaded. The great trouble has been, and will continue to be, that atmospheric

is liable to sudden changes either by electric convulsions or cold northern waves, bringing the thermometer down to the freezing point at night, while the unclouded rays of the morning sun, by a sudden expansion, burst the sap-vessels first in the leaf, causing an over-pressure on the stalk-vessels, which burst also. The lungs of the plant are destroyed and it starves to death; we must not forget that the little absorbent and exhalent vessels on the lower and upper sides of the leaf are the organs through which the plant not only breathes but takes in about nine-tenths of its nourishment, so that anything which injures them injures the life of the plant, whether it be sudden cold, great heat, or, as happened a few years ago, an over-dose of ammonia.

RUST.

Various theories are offered to account for the production of rust. One is that it is due to fogs, which by some means or other deposit a something on the stalk that forms rust, since fogs often appear about the time that it attacks the plant. By a little careful investigation it will appear, however, that fog is the effect, not the cause. If fog causes rust, then it would be impossible to raise wheat in Western Europe where fogs prevail more or less during the whole summer, yet we rarely if ever hear complaints of rust there. In Oregon and southward along the Pacific coast heavy fogs hover during the early part of the forenoon during the growing season, yet rust does not appear. In these cases fogs are caused by lowered temperature and an atmosphere laden with moisture, the same as in ours. On the Pacific Slope proximity to the ocean so tempers the weather that freezing does not take place, and if it did mists and heavy dews would counteract its effects, while in the comparatively dry air of Central Ontario a cold dip from the north may send the thermometer below the freezing point, or so low as to greatly condense the sap and check circulation, when, should the air happen to be saturated with moisture, the first refracted rays of the morning produce fog, but if the air be dry no fog will follow, though in both cases should the sun shine out with warmth and brightness, rust will follow. It is clear, therefore, that frost, not fog, is the cause of rust; that fog is vapour condensed by the mixing of a cold and warm air, or, as is the case on the banks of Newfoundland, the mixing of cold and warm water.

RED AND BLACK RUST.

Where only a single chill overtakes a crop and a few of the vessels on the lower side of the leaf are burst, a small quantity of sap leaks out, and, as at this stage of growth the plant demands a large supply of mineral as well as vegetable matter to build up the straw and hard parts of the grain, iron forms a part of the sap which leaks out through the little wounds, which, combining with the oxygen of the air, forms red rust, but when all the vessels of the leaf burst, and the sap all runs out through the leaf or stalk, only half as much oxygen unites with it, and black rust is the consequence. By carefully examining a leaf or stalk after scraping off the black rust, it will be found to resemble a tube of fine separate fibres, or threads, frayed and torn apart.

EXEMPTIONS FROM RUST.

By observation and experience we believe that rust is caused by the contraction and sudden expansion of the sap-vessels, so that when wet grain is frozen rust will not appear; that when frost comes and a shower follows before daylight, no bad effects are seen; that along the lake shore as far as the sea breeze extends frost does no injury, and spring wheat is not rusted, and in several instances where wheat fields have been shaded by woodland, the grain is free from rust. It is also obvious that where fields have been

partially shaded by orchards or belts of trees, the grain is much better than where exposed without shelter.

WORST PLACES.

Where land has been well tilled, manured and is what we call in the best condition, yet without shade of any kind eastward or northward, and with a high eastern aspect, the crop is entirely useless. In one case of this kind, with a piece of woods on the west, though the field had been sown early, the crop was destroyed so soon that a vestige of grain was not found, apparently from the combined influence of the direct rays of the sun and the heat reflected from the woods on the west, which caused all the sap-vessels of both leaf and stalk to burst, and left the crop a blackened mass fit only for fodder.

TO PREVENT RUST.

Since we know the cause, we have it in our power to aid in preventing rust to some extent. Evaporation is a very powerful cooling agency, hence land which is undrained and of a loose nature and dark colour, as in swampy spots, black, low, low land, will cool sooner and be worse affected by a slight frost. For this, as indeed for all land, the first remedy is to remove the water by good drainage. The second part of the remedy is to afford shade, and add to precipitation by planting trees along boundary lines and divisions of fields. As it will need much time to get trees large enough, we would urge the necessity of beginning early to plant trees along all boundaries. Nothing looks so desolate as a large tract of bare fields and dead fences, with a heap of snow on each side, and in summer cattle standing panting under a scorching sun, without a green leaf between them and the fiery rays of a noonday sun. S. D. G.

PROPOSED WORLD'S GRANGE.

MR. EDITOR,—I send with this for publication in THE RURAL CANADIAN, a copy of resolutions which it is my intention to bring before the Dominion Grange at its next annual session. The preamble, perhaps, sufficiently explains my views with reference to the organization of a WORLD'S GRANGE. My fellow Patrons will, I think, agree with me at least in this, that a crisis looms in the not far distant future, when must be decided, either by haphazard, or common consent and wisdom of the several sections of the Order then existing, the question: Shall there be a WORLD'S GRANGE, a FOUNTAIN HEAD for the Order everywhere, or shall each nationality or colony have independent jurisdiction in all things within its own limits?

The Order in Canada has set an example which is not unlikely to be a precedent for other jurisdictions as they arise, unless it can be shown and is confessed that the step taken in the year 1874 by the Subordinate Granges of Ontario was a step in a wrong direction, and has not been productive of the best results. Our noble Order was conceived by Brother D. H. Kelly—to whom be the honour; was brought to its present state of almost perfect organization by his associates of the National Grange; and was introduced into the Dominion by a deputy from that body, which has therefore a *patent right* to this most excellent and efficient device for combining farmers in the interests of their profession. This consideration, together with the wisdom and zeal in council and in labour displayed by the National Grange, might well have induced those who organized the Dominion Grange to retain allegiance with the parent body, and thus have the benefit of association and combination with Patrons across the border, among whom are many of distinguished talents and professional attainments.

While I utter these sentiments, I disclaim even the remotest desire for any closer political union than with those lands over which the Union Jack proudly waves, and the Sovereign of Britain holds sway.

Enclosed also please find proposals for amendments and additions to the Constitution, which I shall thank you to publish. Concerning these, the required notice has been given, and they will be brought before the Dominion Grange at its next session. It will be remarked that the proposals now made for Constitution of Dominion Grange differ widely from those made by me and published in the *Toronto Bulletin* of January, 1888. Allow me to explain that in my opinion the object aimed at, viz.: thorough representation of the views and wishes of the Order, will be better secured with a minimum of expense by the latter than by the former proposal.

I am still, however, of the opinion that Subordinate Granges should have the right of representation in Provincial Granges, provided that the cost of all such delegations be borne by the Subordinate Granges represented. Mature reflection has also confirmed the view that those who are selected to direct and manage the affairs of a Grange should be the best representatives to higher grades, which opinion is embodied in the preamble to the resolutions sent with this for publication. I shall not criticise Bro. Doyle's proposals, or so-called by-laws. I offer mine for consideration and all fair criticism, and hope to have the assistance of that worthy brother before the Dominion Grange. I most respectfully request my fellow Patrons to examine and re-examine the article on Constitutional Amendments above referred to, published in the *Bulletin* of January, 1888. I trust that the principles enumerated in that article and the proposed amendments predicated thereon, will be found to bear examination.

The proposal to so add to Article 3 of the Constitution of Dominion Granges as to permit members of Dominion Subordinate Granges, under certain conditions and circumstances, retaining membership in, or becoming members of superior grades to which they may belong, or be eligible, it is believed would, if adopted, be the means of retaining many useful members for the work of the Order. The proposal to permit work of any Grange to be done in any degree to which it may be entitled, it is also believed would, if adopted, remove temptation to undue haste in conferring degrees in Subordinate Granges, and render membership permanent.

NOTICE OF RESOLUTIONS TO BE MOVED AT THE TWELFTH ANNUAL SESSION OF THE DOMINION GRANGE.

Whereas it should be the aim of the Order of the Patrons of Husbandry to unite the farmers of the world in one grand fraternity devoted to the interests of agriculture and the objects expressed in our Declaration of Principles; And, whereas we learn from the published proceedings of the eighteenth session of the National Grange that "The Secretary received and referred to the Executive Committee a letter from parties in Australia, asking for information and power to introduce into that far distant land the organization of the Patrons of Husbandry," also, that in consequence of these inquiries and solicitations the Committee on Foreign Relations recommended that when calls of this nature justified such action, and all attendant expenses not recouped by fees from organization be fully guaranteed, deputies be commissioned "to labour in the interests of instituting and establishing the Grange" in the country so applying; And, whereas it is in the opinion of this Grange desirable, if not essential, that there should be uniformity of rituals and ceremonies, and of the secret or unwritten work of the Order, and also that there should be, in view of the probable early extension of the Order into other lands, as already mentioned, a Superior Court of Appeal for the Order:

Therefore, be it resolved that it is desirable that a WORLD'S GRANGE should be organized, having charge of, and authority over, the constitutions, rituals, and secret work of the Order, and to be a Superior Court of Appeal and Jurisdiction for the Order; Also, resolved that a committee be appointed to take such preliminary steps as may be deemed necessary to accomplish the object expressed in this resolution and the preamble thereto.

NOTICES OF RESOLUTIONS AND MOTIONS TO BE MOVED AT THE TWELFTH SESSION OF THE DOMINION GRANGE.

Whereas it is desirable that the duties and functions devolving upon this Grange in accordance with the Act

incorporating this Grange, and such other duties and functions not inconsistent therewith as may now or hereafter be assumed by this Grange, be performed as economically as is consistent with efficiency, and in order that as large a share of the funds contributed to this Grange as possible be directed to the dissemination of the principles and accomplishment of the declared objects of our Order.

And whereas the executive officers of Provincial Granges should be, and might fairly be presumed to be, thoroughly qualified by acquaintance with the condition, the needs, and the affairs in general of the Order in their several jurisdictions, to administer the combined interests and affairs of the Order in the Dominion.

And whereas it is desirable that any and all alterations of, and additions to, the constitutions of the Order should be duly considered, and be the result of the deliberations and the best wisdom of the whole Order.

Therefore resolved, and it is hereby enacted by this Grange, that the following amendments and additions to the constitutions of the Order, embodying the principles and opinions expressed in the foregoing preamble, be made by virtue of the authority belonging to this Grange:

Constitution of the Dominion Grange: Article 1. Sec. 1.—The Dominion Grange, or Dominion Executive Committee, shall be composed of its own officers, of the members of the executive committees of the Provincial Granges under the jurisdiction of this Grange, and of deputies elected in accordance with Sec. 4, Article 1 (present Constitution) of the Dominion Grange, provided that the Master of the Dominion Grange shall have power, by and with the consent of, or at the request of a majority thereof, to summon to its councils any past or honorary members of the Dominion Grange who shall for the time being have all the constitutional rights and privileges of delegates to the Dominion Grange.

Article 2, Sec. 1.—The officers of the Dominion Grange shall consist of and rank as follows, viz.: Master, Overseer, Secretary, Treasurer, Lecturer, Chaplain and Steward, also two Auditors.

Sec. 2.—Vacancies by death, resignation, or otherwise, shall, when necessary, be filled *pro tempore* by the Master. Should the offices of Master or Overseer be vacant, the officer next in rank below the Secretary shall assume the duties of Master. All *pro tem* appointments shall be filled by election, at the next meeting of Dominion Grange.

Exchange Sec. 7. Wherever the words "Executive Committee" (meaning Executive Committee of the Dominion Grange) occur, the words "Dominion Grange," shall be substituted, or when both occur the former shall be expanded.

Sec. 9.—The duties of the Overseer and Chaplain shall be the same as, etc. The Lecturer shall be chosen with reference to ability as lecturer, and shall perform such duties properly belonging to the office as may be required by the Master or the Grange.

The Steward shall have charge of the properties of the Grange not properly in the keeping of either of the officers of the Grange. He shall prepare the room for sessions, shall satisfy himself that all present at any session are qualified to remain, shall permit none to enter who are not duly qualified, unless by direction of the Master, and shall perform such other duties in connection with the office as may be lawfully demanded.

Sec. 12.—The Dominion Grange shall deal exclusively with matters affecting the interests of the Order generally throughout its jurisdiction; appeals or other matters properly referred to it by or from other Granges; shall carry into effect the wishes of any Province having a Provincial Grange, as directed by their delegates to Dominion Grange or by properly certified authority; shall carefully watch the legislation of the country affecting the agricultural interests; and (pending the organization of a World's Grange) shall act as a Supreme Court of Appeal and Jurisdiction for the Order within its jurisdiction, and shall reverse the laws of the Order and decide questions of usage when appealed to, provided that no change shall be made in any law of the Order, except as provided for by Sec. 3 of Article 4.

Article 4, Sec. 1.—The Dominion Grange shall meet at such times and places as the Grange may decide upon, or as the Master, by and with the consent of the executive committees of the several Provincial Granges under its jurisdiction, may appoint, and the Secretary of the Dominion Grange shall give thirty days' notice of all such meetings to the secretary of each Provincial Grange, and all others entitled to a voice therein. Omit Sec. 2.

Sec. 3.—Proposals for alterations of any description in or to the established laws, etc., of the Order, shall be put in writing, and be communicated in duplicate to the Secretary of the Dominion Grange, endorsed by the recommendation of any Grange, or the executive committee of any Grange, to which the member making such proposals may belong. The Secretary of the Dominion Grange shall cause all such proposals to be published in the official organ, or recognized organs of the Order. And it shall be the duty of the Masters of all Granges in the jurisdiction of the Dominion Grange to cause all such proposals to be fairly discussed by the Granges over which they preside, and to take a note on the same, and to communicate the result to the Secretary of the Dominion Grange, and the Dominion Grange shall, if a majority of the Division Granges approve of the proposed alterations, discuss the same, giving due weight to the views expressed in the reports from Division Granges, and shall amend, adopt, repeal, or reject, or may refer the matter back to Division Granges for further discussion, as may be deemed best.

Yours in F. H. C. & F.,

EDWIN S. CREED.

PAINT AND PAINTING.

The basis of the best paint for farm use, says the *American Agriculturist*, is linseed oil and white lead, but there are almost innumerable substitutes. In fact, almost any compound which

may be applied with a brush, and will finally become dry and firm, forming a smooth and not a chalky surface, is of use in protecting houses, out-buildings, fences and implements, from the action of the weather. We hardly think how rapid this action is, unless our attention is particularly directed to it. See how quickly a new shingle roof changes colour, or how, after a few years the exposed surfaces of shingles are worn away. That this is not by the action of the rains alone is obvious from the fact that the shingles on the south side of a roof wear three times as fast as those on the north side. It is the sun, the air, and the water, altogether, that do the work of decay, and the province of paint is to defend all articles, especially wooden ones, against this wear.

Paint ought not to be applied when the wood is too dry, for then it is needlessly absorbed, and fails to produce a good surface. The best time to apply paint is when the surfaces are dry after a spell of moist weather. At such times, dust does not fly, the surfaces are often washed clean of dust and deposits, which in a dry time adhere. We have often, in autumn, not only more or less leisure to do this work, but just the right sort of weather in which to do it. Painting is an art easily learned. Some experienced person should guide the beginner if possible, for experience is often a costly school. Painting may be learned without a master, at least sufficiently to be of great service to any farmer. In the mixture of paints and selection of colours, there is room for the exercise, not only of skill but of taste, and yet we can hardly be too thankful that Providence which "tempers the winds to the shorn lambs," tempers the *outré* and outrageous combinations of colour, with which tasteless people often disfigure the landscape, so that after a while they are no longer glaringly bad. There are comparatively few colours which will long stand the beneficent influences of the blessed sunshine. Old Sol has an abhorrence of bright and staring tints. He paints, so to speak, a piece of new wood a beautiful gray in a short time, and the reds and olives, and blues, greens and purples, which some people think are beautiful upon houses and barns and fences, are almost as quickly subdued to more neutral tints, which, if not positively beautiful, have in them more of harmony with nature, and less of torture to cultivated taste.

It is not advisable to suspend Grange work during the busy season when farmers and their families have incessant labour, yet it may be well to have meetings less frequent. Grange work, it must be understood, extends through all affairs. It is more than a mere observance of forms, for it is a rule of action that directs business intercourse and social affairs. It is operative in trade matters, and every farmer has to buy supplies at all seasons of the year. Let him employ the channels opened for his special use and effect savings which enable him to become a larger purchaser, or to meet more fully all his wants. While such savings are not the ultimate object of the Grange, they are, nevertheless, desirable, and it becomes the duty of every Patron to obtain the advantage they give. He owes to himself and his family the largest measure of comfort, pleasure and happiness that may be obtained by his labours. But if he squander the proceeds by submitting to every kind of exaction recognized by commercial rules as right, he will soon find his resources impaired and consequent inability to supply real wants. Grange work, including the trade system organized and maintained by the Order, brings no wrong to any person, but it does bring better rewards for labour, and is, therefore, worthy of attention from every farmer in the land.—*From the Husbandman.*

HOME CIRCLE.

A MEDDLER'S WORK.

"So, your husband's mother is coming to live with you," remarked Miss Susan Nims, giving her head a toss which set all the pink bows dancing.

"Why, yes, Miss Nims," said I, opening my eyes in surprise at my visitor's tone. "Mother Grey's last child has married, and now she is left quite alone. Henry always was her favourite, and I, knowing it would please him, suggested that she should rent the farm and make her home with us."

"Humph! more fool you! You've got yourself into a pretty fix now. She will never leave you as long as she lives; you can bid good-bye to peace for the rest of your days."

"Why, Miss Nims," said I, "I don't understand you. I'm sure I never want mother to leave us, and as for peace, what difference can her coming make?"

"Oh, you'll see! You will repent of your bargain before a month is over. Of all the mean conniving women in the world, commend me to a mother-in-law. Oh, I know lots of such cases."

"But, Miss Nims, there are exceptions. I'm sure there are good and true women in the world belonging to this class."

"Well, I'd like to see one of them. I'm sure I hope you'll get along with her," said my neighbour, with a little sympathetic sigh.

Often, during the day, I found myself wondering what my husband's mother was like. I thought how nice it would be to have some one to whom I could go with all my troubles, and how pleasant it would be for Henry to have his mother near him, where he could watch over her. Could my husband's mother be disagreeable in any way? No, a thousand times no! And yet the sharp words left their sting, and I could not drive their memory from my mind.

When train time arrived, baby and I took our station at the window to watch for grandma. Soon the sound of wheels was heard, and Henry drove up to the door and handed out a lady.

"Mother, this is your daughter Mary."

I glanced up and met a pair of gentle blue eyes looking out wistfully from a kindly old face.

"Mary, will you let me be your mother, as well as Henry's?" asked the lady, holding out her hands; and I answered, embracing her warmly:

"Indeed I will! Welcome home, mother!"

Time sped along happily for months, and it appeared as if Miss Nims would be disappointed, for no happier family existed than ours. I felt like singing all the time, and often told Henry if I was rich enough to have a piano I should be almost too happy to live. The unpleasant effects of Miss Nims' predictions were wearing off, but she felt it a duty to run in often enough to keep me suspicious. As she left me one evening, I ran down to the parlour to get my sewing. The door did not open readily, and I tried it again, but found it locked. I was sure I heard Henry and his mother talking inside, and thinking the door had been fastened accidentally, I called Henry to open it.

"Oh, is that you, Mary?" he asked. "Run upstairs and get my slippers, will you?"

I did so, and when I came down I found Henry sitting by the table reading.

"Where is mother?" I asked.

"Wasn't she upstairs with you?" replied Henry, keeping his eyes on his book.

"No; I thought she was here."

"Well, you see you are mistaken, Mary," he answered.

I did not reply, but took my work and sewed away busily, my thoughts keeping time with my

fingers. I was sure I had heard Mrs. Grey's voice in a low-toned conversation with her son, and still he had the same as denied her presence there. It was the first time he had ever equivocated to me, and I could not overlook it without knowing the reason. Was Miss Nims right, after all?

My uneasiness was very much augmented a few days afterward. I was in the kitchen when Henry and his mother entered the dining room, and I heard him ask:

"Are you sure Mary knows nothing about this matter?"

"Yes, I am quite certain," was the answer. "I think we have been fortunate in keeping it from her."

"Yes, it would not do for her to find it out now," said Henry.

Alas for my peace of mind! I waited to hear no more, but ran upstairs. What was it that my husband and his mother were trying to keep from me? Why did they treat me like a child in my own house? It was shameful, and I was indignant. My meditations were interrupted by the entrance of Miss Nims, who had run over to have a little chat, as she said.

"Why, my dear!" she exclaimed, at sight of me, "how poorly you are looking! What is the matter with you?"

"Nothing serious. I was very busy yesterday; I am a little tired."

"Ah! one more in the family makes more work, I know. It won't do for you to wear yourself out in this way; you must let your mother-in-law do her part."

"Ah, indeed she does!" exclaimed I, quickly, "and more than I want her to."

"Well, it seems to me she goes out more than you."

"And so she ought."

"She receives callers, too."

"I think you must be mistaken, Miss Susan."

"But I certainly saw a gentleman come here two days ago when you were down town. Yes, and she met him at the door herself. Mr. Grey came home and took him away with him."

"Oh, it was probably some friend of Henry's."

"Perhaps so," said Miss Nims, doubtfully.

She soon after took her departure, leaving me in a troubled state of mind. In vain I tried to reason with myself, to persuade myself that all this was no concern of mine, still I could not help connecting the visit of this gentleman with the mysterious private conversation. Why was I not thought worthy of their confidence? Why all this plotting and scheming?

Almost daily I found myself interrupting stolen conversations and stumbling on evidences of the secret, no wonder I grew thin and pale and lost my appetite. Mr. Grey and his mother wondered at it, and tried in vain to raise my spirits, and my husband took me out driving often.

One day Henry said he was going to take me for a long drive. I pleaded that I was too busy, but he would not listen to it, and so I went. The air was clear and keen, and I felt much refreshed when we returned.

"Run upstairs and take your wraps off, Mary, and then come right down—I want to show you something," said Henry, as he helped me out.

When I came downstairs he was sitting in the hall, and drawing my hand through his arm he conducted me to the parlour.

I raised my eye and then gave a scream of delight, and, with a bound, was across the room standing before the superb piano.

"Oh, Henry! where did this come from? What a beauty! Is it really for me? Oh, how can I thank you enough?"

"Here is the giver," said Henry, going to his mother and putting his arm about her.

"Mother! Is it possible! Oh, you darling!

How can I ever thank you?" And I, too, throw my arms around Mrs. Grey and gave her a rapturous hug.

"I am quite surrounded," he said, smiling. "I am glad you like your piano, Mary, and you shall repay me by getting all the enjoyment you can from it."

"It is something I have wanted ever since we were married," said I.

"And now you have your heart's desire," said my husband, "but at the cost of a little duplicity, I am afraid. Do you remember one night, about two weeks ago, when you found the parlour door locked?"

"Yes."

"Well, mother and I were holding a consultation. You came to the door, and I sent you after my slippers to give her time to run away. I came very near telling a fib."

"Yes," said his mother, "such planning and plotting as we have had! The other day, when the man came to make the final arrangements about bringing the piano, you were down town, and I was so afraid that you would return and find him here! It was put up while you were out driving, for I knew Henry would not bring you home too soon."

I felt sick and faint. This, then, was the secret which had tormented me so! The innocent plottings of loving friends! What a monster I was to have suspected this noble woman!

This is the reason why I have gradually dropped Miss Nims' acquaintance, and why that worthy spinster often complains of how "uppish" some folks have grown; but I am only too glad to be out of the reach of her tongue, and in the absence of my husband I find my greatest comfort in the society of my mother-in-law.

A SANITARY BILL OF FARE.

This is for housekeepers in the country, where the butcher and the fishmonger come but once a week.

Saturday breakfast.—Fish balls, graham bread, graham mush, apple sauce, milk or milk and water.

Dinner.—Boiled corned beef and vegetables. Dessert: Pudding of granulated oatmeal, made as follows: one half-cup granulated oats, one half-cup dried currants or chopped sweet apples, one quart milk. Stir two or three times while the oatmeal is swelling; bake slowly two hours. Serve with whipped cream.

Supper.—Graham bread, white rolls, toasted crackers, baked apples and cream, milk or milk and water.

Sunday breakfast.—Baked potatoes, beans baked with butter in place of pork, or baked in milk, as preferred, brown bread, graham bread, apple sauce, oatmeal and milk.

Lunch.—Sandwiches, crackers and milk, fruit.

Late dinner.—Cold corned beef sliced thinly, hot canned tomato, canned sweet corn, toasted bread, oyster stew, or escalloped oysters. Dessert: Grapes and melons, or apples, pears and nuts, or pepper corn, raisins or dates, according to the season.

Monday breakfast.—Brown bread, cream toast, boiled eggs, graham bread, apple sauce, graham mush, milk.

Dinner.—Baked beans heated up in steamer, escalloped potatoes, lettuce, or tomato, fresh or canned. Dessert: Buns brought on in cake basket, canned peaches.

Supper.—Graham bread, white bread, butter toast, stewed fruit or baked apples, fancy crackers, milk.

Tuesday breakfast.—Baked potatoes, eggs dropped on graham toast, oatmeal and milk, graham bread, apple sauce.

Dinner. Beef prepared as follows: A piece of beef weighing about three pounds, such as would be purchased for salting, placed in a pan with half-a-pint of water, sprinkle it over with a little salt, pepper, or summer savoury if that is liked, or use celery for flavouring, then place it in steamer and cook three hours, or until tender. Remove the meat from the pan, place on platter and keep warm; put pan with broth on top of stove and thicken this broth when boiling with a little flour or corn starch; add seasoning if necessary and a small piece of butter. For vegetables—Mashed potato and squash, turnip or corn, according to season. Dessert: Small white rolls, cut round, warmed and buttered, placed in cake basket, hot roasted tart apples in glass dish, served with cream.

Supper.—Graham bread toasted, French tea rolls, rice steamed in milk, baked sweet apples, or fresh berries with cream, baker's graham crackers.

Wednesday breakfast.—Corn cake, cream toast, graham bread, cheese, apple sauce, milk, graham mush.

Dinner. Beef left day before sliced cold, hot tomato, fresh or canned, mashed potatoes, one other vegetable. Dessert: Rice pudding—one-half cup rice, one half cup raisins, one quart of milk, a little salt; stir two or three times while rice is being swelled, then bake slowly. To be eaten with butter, whipped cream or plain.

Supper. White bread, graham rolls, granulated barley (as prepared by the Health Food Company) steamed in milk and moulded in cups, baked apples, berries or stewed fruit, egg crackers.

Thursday breakfast. Graham gems, poached eggs, apple sauce, oatmeal, milk.

Dinner.—Corn chowder made like fish chowder, using corn only in place of fish, if in season of corn; if not, salt fish soaked in water, brought just to the boiling point, set on back of the stove ten minutes, then remove, flake the fish and put back in spider, adding a pint or more of milk; thicken with flour made smooth in a little cold milk; add pepper. Baked potatoes, sweet or Irish, pea soup. Dessert: Tapioca, steamed in milk, four even tablespoons to a quart, add little salt; serve with sweet apples and cream.

Supper.—Wheat gems warmed (an extra dozen being cooked at breakfast) white bread, butter toast, canned fruit, oatmeal crackers.

Friday breakfast.—Corn cake, graham bread, omelette, apple sauce, milk.

Dinner.—Fresh fish baked in milk, potatoes, one other vegetable. Dessert: Rice steamed in milk, apple souffle made of sweet or sour apple stewed, strained through a colander and then put in glass dish and frosted with whipped cream or beaten whites of two eggs.

Supper.—White bread crumbs heated up in milk brought to boiling, eaten warm with butter; graham rolls, canned fruit, baker's buns, milk.

It will be seen at once that no sugar is used in the food here recommended, except the little necessary in some varieties of canned fruit, and what may be in the baker's buns, no eggs being used in puddings or cake, they can be had for breakfasts. The money expended in most families for tea, coffee, sugar and extracts will more than purchase the raisins, currants, dates, etc., which are much more healthful and nutritious. The graham flour used should be of the entire wheat, either purchased whole or ground for the consumer or else purchased of reliable parties, as much of that sold as graham is cheap flour mixed with bran. No sweetening should be used in the bread.—*Good Cheer.*

ONE of the best evidences of the hard times is the fact that a footpad tried to rob an editor the other day.

UNCLE GABE ON CHURCH MATTERS.

Old Satan lubs to come out to de meetins now a days, An' keeps his bizzness runnin in de slickes kind o ways. He stractifies a feller how to sling a fancy cane. When he's breshin' roun' de yaller gals wid all his might and main.

He puts de fines' teches on a nigger's red cravat, Or shoves a powter quarter in de circulatin' hat. He hangs aroun' de sisters too, an' greets em wid a smile, An' shows 'em how de white folks put on lots o' Sunday style;

He tells de congregation, in a whisper sweet as honey, To lab de benches painted wid de missionary money, Or to send de gospel 'way out whar de necked Injuns stay. And meet de bill by cuttin' down de parson's 'eerly pay. His voice is loud an' strong enough to make de bushes ring.

An' he sets up in de choir jis' to show 'em how to sing. Den he drops de chune 'way down so low, an' totes it up so high,

Dat 'twould poster all de angel's what's a-listenin' in de sky;

An' he makes de old time music sound so frolicsome an' gay.

Dat 'twill hardly git beyon' de roof—much less de milky way.

For dar's heap o' dese now-fashion songs jes' sing 'em how you please—

Dat 'ill fly orf wid de harrykin, or lodge emungst de trees,

Or git drowded in de thunder-cloud, or tangled in de limbs;

For dey lack de steady wild-geese flop dat lif's de good old hymns

De wakenin' old camp-meeting chunes is jes de things for me,

Dat start up from a nigger's soul like blackbirds from a tree.

Wid a flutter mongst his feelins an' a wetness round de eyes,

Till he almost see de chimneys to de mansions in de skies.

—J. A. Macon, in the Century.

IT IS NOT TRUE.

"Why Farming is so Little Liked" is the heading of an article which has been "going the rounds"; but after reading we look in vain for any substantial reasons, because there are none to be offered, why farming is *not* liked. For ourselves we deny the proposition. The fact that three-fifths of the population of the country are engaged in farming puts a stopper on any such nonsense. It proves that no business is *more* liked than the cultivation of the earth, and none yields so sure a living, and provides with more certainty for the wants of old age when our work-days are over. There are lazy people engaged in farming, as in any other calling, who are always ready to try their hand at something else which to them seems to promise as much or more gain with less labour. But we all know, who have paid any attention to these changes, how seldom any one betters his condition. On the contrary, how frequently—in fact, how generally—they fail entirely and disastrously. It is perfect folly, after working at a pursuit a number of years, and becoming well acquainted with it in all its parts, and doing well enough, to abandon it and begin anew some other business of which we know nothing. And we see the result of this folly all around us. The industrious, temperate, careful man, who pursues farming as the vocation of his life, becomes ardently attached to it and never fails to do well by it. We say never, because such a man cannot help but succeed, unless overwhelmed with misfortune; but even in such case it is not often permitted to be ruinous in these days of good will and benevolence.

In a word, there is no business in life that a man engages in for the support of his family that is as sure of accomplishing its object—or that is upon the whole *better liked*—than that of tilling the soil, and there are no people, take them as a whole, who are more respected or held in higher repute by the rest of mankind.

THE VALUE OF CIVILITY.

There would be fewer broken friendships, fewer unhappy unions and family quarrels, were it not so much the custom amongst intimate friends and relations to neglect the small cour-

tesies of life, to show less and less mutual deference as they grow more and more familiar. It is the foundation of misery in marriage, and many a serious and life-long estrangement has begun, not from want of affection so much as from lack of that delicate and instinctive appreciation of the feelings of others, which makes a person shrink from saying unpleasant things and finding fault unless absolutely obliged, and in any case avoid wounding the offender's sense of dignity or stirring up within him feelings of opposition and animosity, for, although many persons profess to be above taking offence at honest censure, and even seem to court criticism, yet it must be very carefully administered not to be unpalatable. Even kind and generous actions are often so uncouthly performed as to cause the recipient more pain than pleasure, while a reproof or denial may be so sweetened by courtesy as almost to do away with any sense of mortification or disappointment. True, good breeding is always inclined to form a favourable judgment, and to give others credit for being actuated by worthy motives; it does not wish or seem to know more about people than they themselves desire should be known, but it is always prepared, when necessary, to take an interest in the affairs of others, while self is not suffered to intrude unduly, in a superior, by tone or gesture of his position; in an inferior, it never escapes equality. A show of respect never fails to beget respect. "*Suaviter in modo, fortiter in re,*" should be the motto of all who desire to be either useful or beloved. The stronger an individual, the more impressive is his gentleness; the wiser he is, the more gratifying and complimentary his deference, and in a world where there is so much unavoidable discomfort and unhappiness, it is surely every one's duty to cultivate those gracious manners, under whose magic influence the restless and dissatisfied grow more content with their surroundings, by which the diffident are encouraged, the invalid is roused and interested, the young are inspired with self-respect, the old are kept bright and hopeful; which, in short, beam sunshine everywhere, and increase a thousand fold the aggregate of human happiness.

The farmer's trade is one of worth,
He's partner with the sky and earth,
He's partner with the sun and rain,
And no man loses for his gain,
And men may rise or men may fall,
But the farmer he must feed them all.

The farmer dares his mind to speak,
He has no gift or place to seek,
To no man living need he bow,
The man who walks behind the plough
Is his own master—whatever befall,
And king or beggar, he feeds us all.

The juice of lemons, eaten, has relieved many cases of rheumatism. Applications of hot and cool wet cloths—alternating them—to the parts affected, frequently give immediate relief—even when the disease is of an inflammatory type. The wet cloths should be well covered with dry flannels while being used, and changed about every five minutes, continuing their use half an hour, or until pain ceases.

FURNITURE in bedrooms should be as light in construction as is consistent with strength, and made of light wood. Ash furniture, oak, and satin wood are very suitable. Whenever possible, it is much desired on the score of health that furniture should be made in such a manner as to be easily moved. Woollen hangings should never be used in bedrooms, or woollen upholstery of any kind. Chintz or cretonne is what naturally suggests itself as most suitable for drapery, and there is much to be said in its favour, on account of its comparative cheapness and the immense variety of its designs.—*Good House Keeping.*

The Last Sweet Words of Mother.

Words by GEORGE COOPER.

Music by CHARLES E. PRATT.

1. Of all the memories that I keep, Like roses in my breast..... A gen - tle one lies

2. I gaze with in her gen - tle eyes, Where shines the part - ing tear;..... A - gain her ten - der

3. The last sweet words of mo - ther dear, Shall nev - er fade a - way;..... Like voice of an - gel's

hid - den deep, Far sweet - er than the rest..... It brings me back one sun - ny year, One

soft re - plies, In ac - cents pure I hear..... Her lov - ing hand is on my brow, Her

hos' - ring near, They glad my life to - day..... The joys of old re - turn once more, With

a tempo.

dream of child - hood's glee;..... The last sweet words of Mother dear, Are whis - per'd now to me.....

lips are meet - ing mine;..... Al - tho' in sad - ness I may bow, These dreams my heart en - twine.....

all their mem - ries sweet;..... And mine they are 'till life is o'er, And fond - ly we shall meet.....

CHORUS

Sopr'o. f
The last sweet words of Mother, How dear their echo seems;... They bless my sad and lone - ly heart, With bright and heav'n - ly beams!...

Alto. f

Tenor. f
The last sweet words of Mother, How dear their echo seems;... They bless my sad and lone - ly heart, With bright and heav'n - ly beams!...

Bass. f

YOUNG CANADA.

THE RUNAWAY.

A sad tale, dear children, I now must relate,
Of little Miss Clara Applegate.

Her mother was very busy one day,
And Clara was out in the garden at play,
When there popped in her head a strange little plan:
"I'll run just as fast as ever I can,
Dolly and I, and to school we will go,
To Annie and Bertha and dear brother Joe.
Oh, won't they be pleased—I reckon they will—
When they see me and Dolly come over the hill?"

So she ran and she ran, but, alas! went astray,
For she had mistaken and gone the wrong way.

Soon the houses and fences and trees became strange,
Her gladness all faded, her heart seemed to change
Into stone. Down she sat with her Dolly beside;
And what did she do? She cried and she cried:
"O Dolly, we're lost! Oh, what shall we do?"
She was frightened, I tell you, through and through.
"O mamma! O Annie! O Bertha! O Joe!
What will become of me? where shall I go?"

What would have become of the child, who can tell?
But riding along came good Doctor Bell.

He stopped and he looked, and the good doctor smiled;
He guessed in a minute what ailed the poor child.
"Come, pigeon, jump in," said he; "let's have a ride.
Where shall we go?"—"Oh, home!" Clara cried.
"Oh yes, home's the place for babies no doubt;
I wonder if mamma knows you are out?
Next time you had better keep close by her side,
Like chickens that under the mother-wings hide."

Once more at home it was Clara's refrain,
"I'll never run off, no never, again."

SAVED BY A LARK.

Patty lived in the country, in a white house
with green blinds. There was a nice yard, with
smooth-cut grass and green trees, where the birds
would sit singing on the boughs. Patty had a
swing, too—one that papa put up—of good stout
rope, that would go up ever so high into the
branches. Patty was six years old.

A short distance back from the house and garden
stood three great barns, filled with stores of
hidden wonders. But she liked best to go with
mamma in early spring into the woods to gather
flowers and search for ferns and soft, green
mosses; or in the autumn to go into the fields
where papa was at work and make him a little
visit.

One morning, in the harvest time, Patty was
alone at the door. Outside, all was bright and
sunny. Through the air came the softened hum
of the distant reapers. Patty thought she would
like to go out; and see papa, and so in another
moment the little feet were trotting across the
fields. When she came into the wheat field she
could see the men going down one side following
the reaper, and leaving a shining row of bundles
behind.

Patty tried to catch up, but they worked very
fast, and by-and-bye, growing tired, she sat down
on a sheaf of wheat. By her side the uncut grain
waved in the sunlight; an old beech tree cast a
cool, pleasant shade—it was very beautiful there.

Suddenly a bird flew out of the wheat near by,
singing a rich, clear song. Patty clapped her
hands in delight.

"Perhaps there is a nest in there," thought
Patty; and "in there" she went, looking with a
pair of bright eyes eagerly about. And yes, there
it was surely, a nest, and three of the dearest,
sweetest little birdies. Was there ever anything
so funny as these downy little heads with the tiny
bills wide open? Such a nice place for a nest, too,
Patty thought. It was like being in a golden forest
in there, for the grain was high above her
head. The yellow straw laughed too, a waving,
murmuring laugh, and tossed its head back and
forth, but never whispered to the child of danger,
nor even told to the men coming rapidly along
the story of the little girl hidden in its midst.
The men came on, the machine leading them, the

horses drawing steadily, and the knives cutting
sharp and sure.

What was it that made the farmer stop his
team all at once? Did he know that his little
daughter was in danger? No, indeed; he thought
she was safely cared for at home, but he was a
noble man, with a large, kind heart, and he had
seen a lark fluttering wildly over the grain; so,
as he would not willingly hurt the least of God's
creatures, he said to the man: "Here, Tom,
come and hold the team. There is a nest some-
where near the old tree yonder; I'll hunt it up,
and you can drive around so as not to hurt the
birds."

Ah, what a cry of surprise papa uttered when
he found his darling Patty sitting there! How
fast his heart beat when he thought of the danger
she had been in! And how it thrilled and softened
as he caught her up in his arms, and, covering
her face with kisses, said: "It was the bird that
saved her!"

When the first excitement was over, and Patty
had been safely carried home in her father's arms,
and the men were going down the field again,
leaving a wide, uncut space around the lark's
nest, somebody—it was a great, rough-looking
man—said, while the tears glistened in his eyes
and his voice grew husky: "God bless the birds!"
—*Christian at Work.*

THE SPARROW.

The sparrow is an autocrat, especially addicted
to divorcing his partner upon the smallest pretext.
I have elsewhere chronicled two small
dramas in sparrow life, which I watched from beginning
to end. The actors in the first were a
pair living in a hole in a maple tree before my
window.

For some undiscoverable reason the graceless
head of the household decided to make a change
in his domestic arrangements, and to begin by
divorce. In that case the female had the advantage,
since the home was not an open nest, but a
castle. She had possession and kept it for two
days, in spite of violent vituperation and the most
threatening manner. In this case, also, I observed
that she never "talked back," indulged in
unseemly scolding, or assumed the offensive
in any way. She appeared indifferent to his
opinions, but enough attached to her home to
endure his annoyances for two days before tired
of the controversy. When at last she accepted
her fate and departed, I saw him bring home the
bride, as coquettish a young thing as can be
imagined, coax her by many wiles to examine the
snug house, follow her about, and finally induce
her to take up her residence with him.

The other case was of trouble on the other side.
A cock sparrow lost one leg, and his mate, who
had nestlings to feed, attempted to divorce him.
Several birds appeared upon the scene, evident
aspirants for the soon to be vacant place. But
the little fellow, though evidently suffering so
greatly that several times he appeared to be dying,
never failed to revive and attack with fury every
pretender, and after a day or two of this conflict,
was able to resume his duties as assistant provider
for the little ones, when his spouse amiably
"kissed and made up."

All through the trouble she never displayed
temper. She refused him admission into the
honeysuckle vine, where the nest was; but she
would come out and alight near him on the window-sill,
talk to him calmly, reproach him, evidently
reminding him of the babies to feed, and
he not able to help. To these remarks he made
little reply.

As I said, the sparrow is a domestic tyrant,
breaking no opposition. I have never observed a
case in which the hen had her own way. He is

so great a bully, so self-willed and violent, that,
whatever the cause of disagreement, he holds out
with dogged obstinacy till he gets his will. In
one case there was difference of opinion as to the
site for a nest; he wishing to occupy an empty
cottage of man's providing, while she, with finer
instinct, had decided upon a charming crotch in
an overgreen tree.

At first she opposed him strongly, scattering
the material he brought, throwing the choice bits
to the winds, while he stormed and scolded, and
—brought more. In the intervals between thwarting
his plans, she would accumulate material in
the chosen tree. He scorned to touch them; he
simply ignored her designs, and proceeded with
obstinacy almost sublime, to bring, and bring, and
bring, till she was worn out, gave up, and accepted
the cottage at last.—*Atlantic Monthly.*

HOW DYNAMITE IS MADE.

The most powerful engine of destruction ever
discovered is prepared in a manner so marvel-
lously easy that the wonder is mankind have not
availed themselves of it long ago. Dynamite,
from the Greek word *dunamis*, meaning power, is
simply nitro-glycerine. The glycerine is a pro-
duct of animal fat, usually of hog's lard. Take
one pound of nitric and two pounds of sulphuric
acid, and mix thoroughly. The acids must be of
full strength and purity. The mixture will cost
three and a-half cents a pound. Put seven pounds
of it into an earthen jar, and pour upon it, drop
by drop, one pound of common crude glycerine,
which can be got for twelve cents. Stir with a
glass rod, and keep the jar in ice or salt and ice,
or the thing will "go off" before you are ready
for it. The sulphuric acid does not enter as a
constituent into the explosive, but serves to facilitate
the chemical union of the other ingredients. When
the chemical combination is complete, the nitro-
glycerine will be found settled to the bottom,
while water and oil of vitriol float on top. These
are poured off, and the nitro-glycerine is
thoroughly washed, to free it from any remaining
acids. It is then complete, a yellowish, sticky,
oily mass, which will "go off" almost for the
looking at it. It must be toned down before it
can be used. This is done by mixing with it a
rough powder as an absorbent—either dried saw-
dust or old tanbark, or pulverized silica. The
substance most commonly used for this purpose,
however, is a vegetable earth from Germany,
which absorbs and holds three times its weight of
the explosive. The dynamite of commerce is not
full strength, as it would be too dangerous. Com-
monly it contains forty per cent. nitro-glycerine
to sixty of the earth. In this state, as an explo-
sive, it is four and one-half times as powerful as
gunpowder.

WANT OF SELF-CONFIDENCE.

Some people never seem to believe themselves
capable of anything; they see others press for-
ward to attempt and achieve, and shrink back
into a desponding inactivity. Having no faith in
themselves they undertake nothing and effect no-
thing. If they are convicted of some fault or bad
habit, they have so little hope of being able to
cure it that they scarcely make an effort. If some
some avenue of usefulness and honour opens up
before them, they draw back, almost sure that
they will not succeed, and decline to enter. If
some duty presses urgently upon their conscience,
they try to quiet its promptings by pleading in-
ability. Thus their lives pass away in uselessness,
their faculties do not develop or their characters
improve, their abilities are wasted, they dwindle
into insignificance, and all this, not for lack of
power, but for the want of a confidence and cour-
age that would set that power into good, practical
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River St., Rockland, N.H., May 13, 1882.

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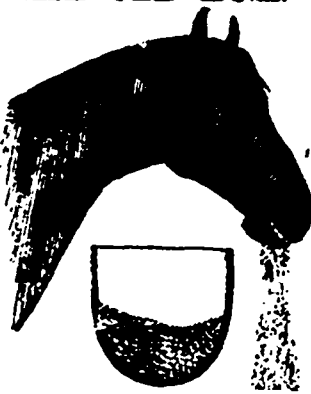
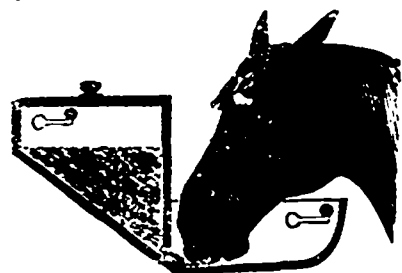
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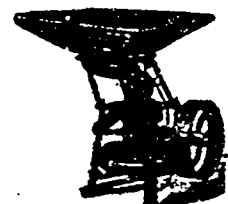


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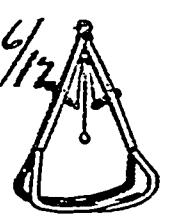
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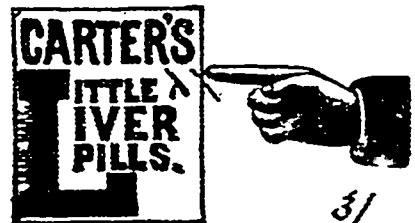
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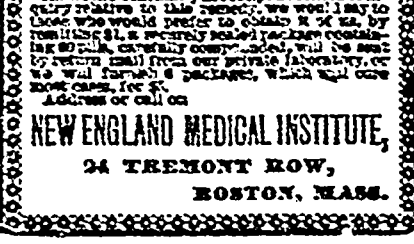
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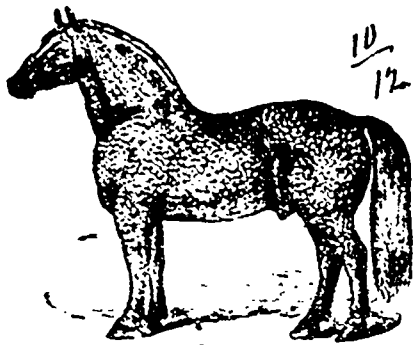
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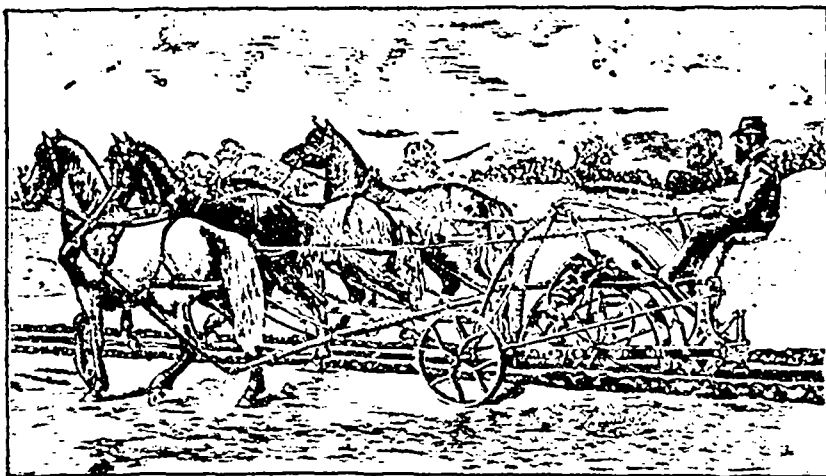
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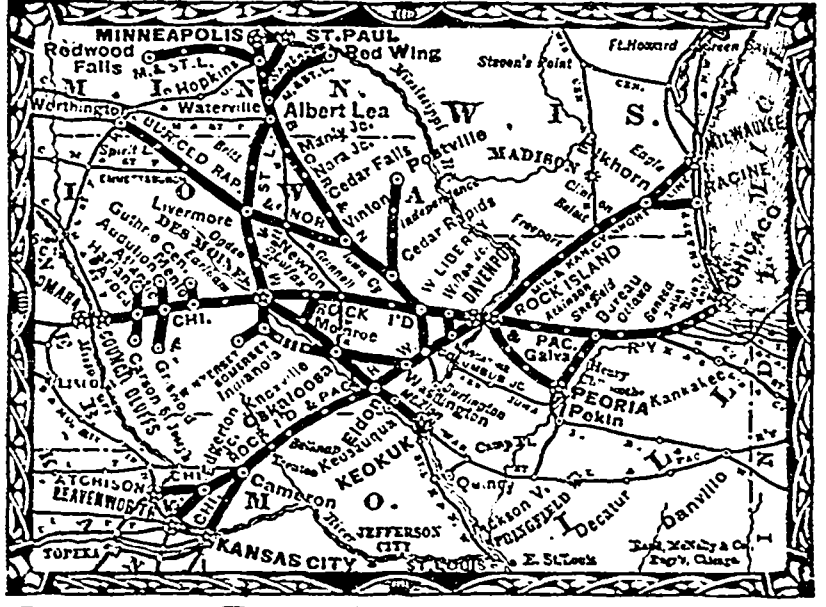


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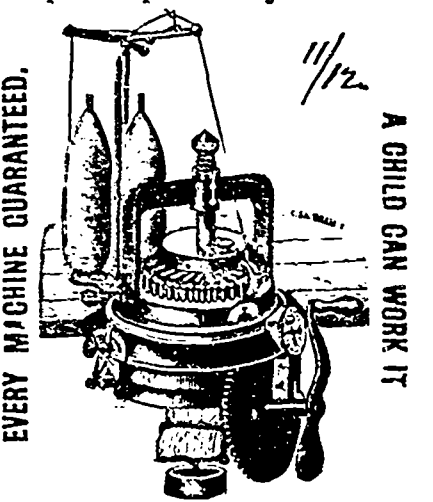
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