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VOL. VIII.

{ WILLIAM WELD,
 Editor and Proprietor }

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CONTENTS OF AUGUST NUMBER.

EDITORIAL:—
 Farmers' Rights, 113; Notes of the Season, 113; A Trip for Health, Recreation and Business, 114; Notes and Queries, 114; Wood-bridge Agricultural Works, 114; Prizes for Essays, 114; Succession of Vegetable Crops, 114; To Prevent Cows from Sucking, 114; Fertilizers, 114; Sowing Mixed Grains, 115; Trip through Scarborough, Markham, Pickering and Whitby, 115; The Yorkshire Cattle Feeder, 115; Markham Farmers' Club Meeting, 115; Ontario Agricultural Convention, 115; P. T. Barnum to the Public, 115; The Agricultural College, 116; State of the Crops, 116; The Agricultural Emporium, 116.
 AGRICULTURAL:—
 The Grain Market, 117; Hints about Work, 117; Petroleum for May Beetles, 117; Keep your Implements Bright, 117; A New Way of Burning Stumps, 117; Acclimating the Cereal and Vegetable Crops, 117; Thoroughly Cultivated Farms most Profitable, 117; Driving Fence Posts, 117; Clover, 118; Bone Dust, 118; Roots as Manure, 118; Cause of Rust on Wheat, 118; Saving Seed Corn, 118; Live Fence Posts, 118; Cutting Rye for Hay, 118; Caution to Farmers, 118; Meeting of the N. Norwich Farmers' Club.
 ENTOMOLOGY:—
 The Hessian Fly, 119.
 GARDEN AND FARM:—
 Hints for August, 119; Co-operation among Farmers, 119; Elements of a Home, 119; The Horticultural Grounds, Toronto, with Illustration, 120; The Best Time to Hoe, 120.
 GARDEN, ORCHARD & FOREST:—
 The Scarlet Runner, 120; Planting and Preserving Trees, 121; What shall we do with our old Strawberry Beds, 121; Cold and the Curculio, 121; Billington's Improved Grain Drill, with Illustration, Wash for Shingles, 121.
 RECIPES:—
 Excellent White wash, 121; To Clean Paints, 121; Bone Felon, 121.
 STOCK AND DAIRY:—
 Making the Dairy Attractive, 122; Care of Stock, 122; Turnips for Stock, 122; The Short-Horn Sales in England, 122; Vermin on Stock, 122; The Manufacturing and Marketing of Butter, 122; Cheese, 123; Sale of Mr. Walter Gilbey's Alderneys, 123; Care of Sheep, 123; Feeding Cows and Young Stock, 123.
 CORRESPONDENCE:—
 Notes from my Garden, 123; Hybridization or cross impregnation of fruits and wheat, 124; Seed Wheat, 124; The Government Agricultural College, Illustration, 124; The organ at home, 124; The prospect of the markets, 124;
 POULTRY YARD:—
 Feeding Chickens, Eggs by the pound, 124.
 MINNIE MAY'S DEPARTMENT:—
 Ice Cream, 125; Ice Cream with Eggs and Milk, 125; Milk Cellars, 125; Cooking Sweet Corn, 125; Pudding, 125; Keeping Butter in Summer, 125; Simple Cure for Rheumatism, 125.
 UNCLE TOM'S COLUMN:—125.
 MISCELLANEOUS:—
 Cerebro Spinal Meningitis, 125; Permanent White-wash, 125; Rheumatism, 125.
 THE HORSE:—
 Draught and Road Horses, 126; Farmers' Markets, 126; Advertisements, 126, 127, 128.

Farmers' Rights.

Farmers have rights. No law, custom or privilege should be allowed to exist that deprives them of any of their just rights. There are numerous ways in which the farmers are taxed for the benefit of political parties; for the benefit of cities and private companies. One of those rights we are now about to treat on, namely,
 THE PUBLIC HIGHWAY AND RAILWAY CROSSINGS.
 Every little while there is some serious accident, and often loss of life, occasioned by the various railroads in Canada. It is to the interest of editors to keep in favor with railroad companies, and consequently these accidents are seldom chronicled.— They are hushed up and often not known beyond the locality in which the accident occurs.
 The old main stage road leading through Canada, about one-fourth of a mile from this city, in the township of Westminster, the G. W. R. has run a cutting under—the gravel road. They have thrown a bridge over the road for the farmers to travel on; the bridge is good, and there is no danger of the engine running into a farmer's wagon at this place. It is situated close to St. James' Park Nurseries. Perhaps the Company think they have done enough in this case, but numerous accidents are happening and no person is safe in crossing this bridge unless his horses are accustomed to it. People coming into this city by this road cannot be aware of the approach of an engine before they are just on the bridge, or so close that they cannot turn, even if that would do any good.— The view of the approaching cars is entirely cut off by the sides of the cutting in which the train runs, and by a dense growth of wood that comes within a few feet of the bridge.
 Mr. James Armstrong, of Yarmouth, the gentleman from whom we purchased "Anglo-Saxon" was coming into this city a short time since accompanied by one of his men, driving a fine span of young horses. He acted with all proper care, but just as he got on the bridge the horses were frightened by the locomotive, which just at that time was dashing under the bridge. Nothing could prevent the horses from running away. The vehicle to which they were attached turned over at a sharp angle on the road, about 10 yards from the bridge. The horses got away; one of them ran against a load of wood and was instantly killed. Mr. Armstrong and his man were both more or less injured; it was only wonderful that they were not killed.
 We cite this instance and this bridge to show you what this railway monopoly is doing for us. The right of way is ours;

we farmers have a right to travel any public concession or side line along any of our farms, without having our lives endangered.
 If these railroad companies cause loss of life or loss of property to any farmer that duly prosecutes his business in a commonly cautious manner, they should be compelled to pay for every such loss or accident that is occasioned by their lack of giving proper notice. We have passed numerous dangerous places on various lines.
 Some lines have useless painted signs put up, such as "Railway Crossing," "Beware of the Train," and have a bell attached to the engine. These may be useful in some places, and perhaps be sufficient where trains can be seen at a distance and the weather is fine, but even then, in case of some of our severe storms, are totally inadequate.
 Why, hundreds of families have had to mourn the loss of husband, wife or child through lack of protection that we farmers have a right to demand. We believe nothing short of a gate at every bridge and every crossing, with a person to open and shut it at all times, will be a safe protection to farmers. In the city of Montreal two large gates are hung at each crossing, so as to shut across the railroad track when pedestrians and teams are allowed to cross, and shut across the common highway when the trains are allowed to pass.
 Storms prevent the seeing or hearing of trains even in good open countries.
 If we cannot by writing awaken enough care on the part of the railway directors to cause a proper protection to be placed at this bridge, we farmers must unite and break up the railway power that is enchainning us. If this one bridge is made safe for farmers to drive over at any time in their usual way, then you may hope to have all other crossings made safe. The safest way is by having a gate; guards we have often noticed quite inefficient, sometimes not at the points where they ought to be.
 When railroads run parallel with the common highway and so near as to endanger loss of life by horses taking fright, the railroad company should be compelled to erect such a fence as to obstruct the view from the horses.
 Notes of the Season.
 During the month of July vegetation has been unusually luxuriant. Corn, potatoes and turnips are doing well. The growth of young trees has been very great, and let us not forget that weeds have grown as fast as our best crops, and need careful looking after. In the garden there is need of the constant use of the hoe. Let not a weed run to seed—pull out by the roots, gather them

into the manure pit; by so doing you will make the pests of all farming and gardening help to enrich the soil they would have impoverished.
 From our memoranda we give one instance of the rapid growth of the season:—
 July 12.—Afternoon—pulled the last of my early pease. Same evening took off the vines, and dug the plot where they had grown. Late that evening, after eight o'clock, sowed it with Stone turnips. Tuesday morning, July 15.—A promise of a good crop of turnips from the seed sown last Saturday evening. In two days from being sown they have grown from seed to be healthy plants, apparently without the failure of a grain of seed.
 Prepare the soil for another year.
 Plough up your stubble ground as soon as you can after removing your crop. The best method is to give it a shallow ploughing now as early as possible, and in the fall plough deep. The first shallow ploughing will cause all the seeds of weeds to germinate at once; the late, deep ploughing will expose the soil to the influence of the frost and snow. By pursuing this method you will have the land enriched and freed from weeds for the spring crops.
 Increase the fertility of the soil by ploughing down green crops. In many instances you can add greatly to the fertility of the soil by sowing a crop in the autumn, and ploughing it under when about preparing for root crops. Clover, when ploughed under, enriches the soil more than any other crop; its broad leaves absorb a large quantity of plant food from the atmosphere, and its long tap-roots draw largely from the mineral resources of the subsoil. All these nutritive stores are deposited in the ground by ploughing the crop down. Buckwheat is also used profitably for the same purpose. Winter rye, though not considered so fertilizing as clover, has peculiar advantages as an enriching crop. Sown in the fall, it grows on through the winter and early spring, till you find it necessary to plough it under in May or June, preparing for the succeeding crop. By this means you will have three crops in the two years—one of them used entirely for enriching the soil for the crop following it. We speak not merely from theory, but from experience.
 Last fall, after removing a crop of potatoes from a plot of ground, and wishing to have a potatoe crop the ensuing year from the same ground, we sowed it under winter rye. The third week of May we had the plot planted with potatoes, using scarcely any manure but the growing rye turned under, and the potatoes now growing give promise of an excellent crop. The rye at the time was about two feet high, and was turned down on the potatoe seeds laid in the drills. It not only gave the needed fertility to the soil, but served also to keep it free and mellow by preventing the pressure of the earth into a hard mass.
 If you don't look carefully after the bits of your horse, you may one day be looking after the bits of your wagon.

A Trip for Health, Recreation and Business.

After the close application to office for such a length of time, we feel the actual necessity of a change, and take a trip through the country.

We call at Dr. Francis' Nursery, in Delaware, just in strawberry time, to see

THE COL. CHEENY STRAWBERRY.

We find the plant vigorous and well set, with fruit of a large size and firm. It is a little later in ripening than the Wilson, but much larger and of a bright, clear color.—It sold in London market at from five to ten cents per quart more than the Wilson, and if we can afford it, we will plant a bed of them next fall or spring.

In passing through his grounds we noticed what we consider the

BEST MARKS FOR NURSERY STOCK.

The Dr. went to a brick yard near his place and with a wooden pencil marked the ends of a lot of bricks with initials and names of different kinds of nursery stock; these bricks were placed in a hot part of the kiln and burnt hard. He uses these in place of wooden stakes, which are in general use, and they are far superior, as they do not rot. The names are plain and always legible on each brick. They are no more in the way than stakes, in fact, not so much so, as they project only three inches above the surface, merely showing the ends with the names on. This plan might with advantage be adopted by many farmers and gardeners who test various kinds of seed.

We also saw in the Dr.'s place the

BEST WILLOW HEDGE

we have ever seen. It is now six years old and is used as a fence. No cattle, horses or sheep can go through it or over it. The plants were put in two feet apart; they have been cut off near the roots, and one strong sprout has been allowed to run up. When about 1½ inches thick the main stem is cut off from every alternate plant about four feet from the ground; the other limbs are woven or plashed in these upright stakes. Thus the hedge has the living timber running horizontally as well as perpendicular, and makes a strong, substantial, living fence, suitable for any farm. Many farmers have tried it, but the failures in every case have been caused by the lack of knowledge and attention. To make them efficient they must be properly attended to when young, or they will never make a good fence. This hedge was growing on high, dry land, in fact, on quite a knoll.

When we see the willow making a really good, substantial fence in such a place, we know, with proper management, that it will make a fence anywhere. There is also another advantage that must make this hedge very valuable. While the lower part acts as a fence, the upper part is growing rapidly, and where wood is scarce, as it is in many places at the present time, this surplus wood will make fuel, and sometimes it is found useful for other purposes. It will also be found most advantageous as a shade for stock and a protection to our fruit, grain and grass crops. Trees also tend to draw rain to fall in their vicinity, or retain moisture. We believe that the value of farms in some bleak, open sections of the country would be greatly enhanced by merely planting the willow hedge around and through them; the crops and stock would both be benefited by it, and wood for fuel would be obtained also.

We have ordered a photograph to be taken of this hedge, and intend having it engraved to show you how it is made. Valuable as we think this as a hedge, we do not consider it will equal the Buckthorn for fencing alone. The time has now arrived when we must pay attention to hedges and timber for fuel and building, as in many parts our farms are denuded of timber of any kind.

Some complain of hedges and trees impoverishing the land and destroying the crops near them. This may be prevented by digging an open ditch alongside, causing the roots to descend deeper for their nourishment.

Notes and Queries.

FALL WHEAT.—I will want some of your best kind of fall wheat in December, as we are needing a change of seed here. The kinds sown in this section are Soule, Treadwell, Diehl, and Hutchinson. If you know any kinds better than these, I would like to get some.—W. R., North Simcoe.

[So far as we have yet seen, the Scott wheat certainly takes the lead. We will have more to say on this subject next month.]

WARTS ON HORSES.—If you know what will remove warts from horses, please publish it in your next number.—W. R.

[We know nothing better for this purpose than to tie a fine, strong silk thread around the root of the wart.]

POTATO BUGS.—Mr. S. Roberts, of Ingersoll, informs us that he has tried various kinds of mixtures for the extermination of the potato bug. He has tried Paris Green with flour, ashes and plaster of Paris, but the best plan that he has yet adopted is to mix Paris Green with water, one tablespoonful to two gallons of water; puts it in a pail and takes a wisk or whisk—such as is used for brushing clothes—and sprinkles the mixture on the vines. He keeps the mixture well stirred at the time of applying it.

WATER FOR CALVES.—One important point in rearing calves is often neglected. When calves are allowed to run in the pasture and are fed liberally with milk or whey, we are apt to think that they need no water. It is found that calves thrive better by having a liberal supply of water, in fact it is actually necessary, no matter how much milk or whey they may have. Their coats look sleeker and they have a more thrifty appearance than is imparted to them when running in a pasture field without a supply of water.

SWEET CORN FOR FORAGE.—Corn has been used for forage in the United States for some time, but not always with satisfaction, many dairymen complaining that there was very little nutriment in it, notwithstanding the bulk. We notice that some prominent men in that line advise the Evergreen sweet corn for forage, sown thinly—1½ bushels broadcast, or 1 bushel drilled. When fed green it should be cut 24 hours before feeding, so that it will get wilted. They claim that this feed increases the quantity of the milk and the flavor of the butter.

Can you tell me what has killed my evergreens? I had some beauties growing on both sides of my garden walk. They grew splendidly for a few years, but after that gradually faded away and are now dead. J. H.

[Upon inquiry we find that "J. H." has been in the habit of salting his garden walks to destroy the weeds on them, in which he was successful, but gradually the salt has worked its way down to the roots of the trees, and that is what killed the trees. We have seen trees die in this way before. The side nearest the walk first became brown, and next year the whole tree was dead. Unless your trees are a good distance from your walks, don't use salt to keep the walks clean.—Ed.]

The farmer who has barns ample enough to house all his stock, has the means at hand to give the same stock an unfailing supply of the best water the year round. The rain that falls on the roof, if caught in cisterns, will water all the stock the roof can comfortably shelter.

Woodbridge Agricultural Works.

Woodbridge is a small village situated 16 miles from Toronto. The Toronto, Grey and Bruce Railway has a station at this place. It would not be known as a village were it not for Mr. Abel's Agricultural Works. Mr. Abel employs between 100 and 200 hands, and his establishment we think is more completely fitted with the different kinds of improved machinery than any other we have seen in the western part of Canada.

The principal business doing at his works when we were there was the manufacture of threshing machines. Mr. Abel makes a speciality of threshing machines, and the surprising number he makes is not generally known; he sends them to all parts of the Dominion. He has again made additional improvements; at the last Exhibition he carried off first prize and diploma despite the strong competition. He also makes the portable steam engines to drive them; only a few of the steam engines are as yet employed, but they must come into use.

He was about completing one to send to Thamesville, and several more were under way.

Mr. Abel manufactures many other implements. He sold 400 reapers and mowers this year, and was obliged to let many orders go to other firms, because he could not fill them, as he was obliged to turn his force to the threshers, to have them ready in time.

We noticed a new water wheel lying in his shop. It is called the Sampson Wheel. This wheel has an adjustable shut which regulates the amount of water to be used in the best manner we have yet seen; he claims this wheel to require 15 per cent. less water than the Leffel Wheel. It is our impression, from what we have seen and heard of this wheel, that it is destined to take the place of the wheels now in use.

We noticed in his yard a double furrow plough, made something similar to the English ploughs, but much lighter, easier handled, has better improvements, and one which we believe will be preferred to the heavy English double furrow ploughs. Mr. Abel will commence manufacturing these ploughs as soon as the iron market is settled; the great prices of iron have deterred him from manufacturing them as yet, although some persons that have already procured the English double furrow ploughs wished to take his in preference to them.

Prizes for Essays.

We propose again giving a few presents to writers on special subjects. We will give one of Vick's beautiful chromos for the best article on the

DESTRUCTION OF CANADA THISTLES.

Also, one for Minnie May's Department, for the best article on

MAKING HOME-MADE HARD SOAP.

One chromo for the best article on the following question:—

HOW TO RAISE WHEAT WITH THE LEAST

LIABILITY TO BE ATTACKED BY THE

HESSIAN FLY,

where the Hessian Fly exists.

SUCCESSION OF VEGETABLE CROPS.—Even after you receive this paper it will not be too late to sow late turnips. Food for cattle is expected to be scarce in the coming winter, and every effort should be made to provide for it as much as possible. Whenever a crop is taken off, let the plough be immediately at work preparing for a succeeding crop. It is too late for Swedish turnips, but other varieties, such as the Stone, may yet give a fair yield, but sow them as early in the month as possible. The soil for them should be rich and mellow. Some sow their late turnips broadcast, but we cannot recommend such a method. To be a remunerative crop they must be thinned to a regular distance and properly cultivated.

To Prevent Cows from Sucking.

This is not a very common habit, still we have seen many cows that have learned it. Mr. Riley, the other day, informed us that he took a good piece of hard wood, about two feet long, 1½ inches thick, made it round, tapered the ends and drove a sharp spike in each end. He cut a small notch in the middle of the stick, punched a hole through the cow's nose, and forced the stick half way through the nose. The small notch, being made a little smaller than the other parts of the stick, prevents it from moving either way, the muscles of the nose retaining a hold on that part.—Thus the cow can feed, but if she turns her head to suck herself, the stick prevents it. Also, in case of sucking another animal, the least touch of the stick prevents it likewise.

Fertilizers.

As our country is becoming older and more densely settled, we feel the need of manures with which to increase our productions, in order to make the same land which formerly grew enough to support one family, produce enough for two. For this reason our barnyard manure has had more of our attention, and we have been careful in preparing and saving it. But there are some portions of our soil which are so naturally deficient in strength, or which have been run down by an improper system of farming, that they require some aid outside of the return to their surface in the shape of manure, what grows there in the shape of crops.

To find out some manure which will combine cheapness with value, and along with that, ease of transport, has been the study of farmers and chemists for centuries. The guano from Peru and adjacent islands, and the bones from Buenos Ayres, the weeds and fish from the sea and lime from the rocks have all done their share in the improvement of our soils and still continue articles of commerce and valuable aids to the farm. But as our creeks and our rivers continually sweep down to the sea, they bear along with them the richness of our land, and every drop that reaches the ocean does its share in stealing our resources.

So long as we continue to waste the sewerage of our towns by forcing it into the adjacent rivers, and so long as water has a tendency to carry off our fertility, so long will we be forced to replace our loss by some outside substance.

We are led to make these remarks from having had our attention again directed to the fact that although we farmers of Canada are liable to the same loss as other lands and from the same causes, we are placed in an exceptionally good position by the fact that within the bounds of our own land we possess a substance which will help us to replace the natural waste. We refer to our immense deposits of apatite, a rock rich with phosphate of lime.

It is not many years since the idea was suggested that phosphate of lime was not limited to the bones of the contemporary animal kingdom, but might be had from a variety of minerals. According to the *American Farmer*, from which we quote, the story of this discovery runs as follows:—"When the late Dr. Henslow was Professor of Botany at Cambridge, there was brought to him by a farmer a few fossils; he saw that they were not as fossils usually are—carbonate of lime—but phosphate of lime. He said at once as by an inspiration: 'You have found a treasure; not a gold mine indeed, but a food mine. This is bone earth, which we are at our wits' end to get for our grain. Only get enough of it and you will increase immensely the food supply of England.'"

"Dr. Moffat, an able writer upon the subject of mineral manures, says: 'In nature the instances of a pure phosphate of lime are very rare, and on such a small scale that they only suffice as cabinet specimens. The highest grades known are the phosphorite of Spain and certain apatites of Canada. These contain, in many instances, as much as 90 per cent. of phosphate of lime.'"

Those who have examined these beds of apatite, which lie in the eastern part of this province, pronounce the supply immense, and all that is required is that they should be cheaply worked and manufactured into superphosphate, to give our Canadian farmers an advantage over the rest of the world. This is one of the works which should be undertaken by the proposed Agricultural Emporium.

Sowing Mixed Grains.

This subject has been of late attracting more than usual attention from agriculturists, though the idea is by no means a novel one. One who has had considerable experience in this matter writes to the "Journal of the Farm," telling the result of his experience in sowing mixed grains. As they are the observations of a practical farmer, we make some extracts from them for the readers of the ADVOCATE, with notes from our own experience:—

"Having had some experience in sowing mixed grains, I will say in regard of experiments tried by me, that the sowing of spring grains to be used on the farm for stock-feeding purposes, has proved fully equal, if not superior, to those crops that were kept separate; but for market, such mixed grains would not, as a rule, be as valuable as if each variety were sown by itself. I have known some good farmers who make it their usual practice to sow oats and peas quite extensively for a field crop for home feeding to stock, also, rye and oats, and barley with oats. On our dairy farms there is not usually as much grain used as is fed to the stock."

In a former number of the ADVOCATE, in an article on soiling and the rotation of crops, the value of a mixed crop of oats and peas was spoken of; it was one of the crops especially recommended for soiling. We have found them, when sown mixed, a more luxuriant crop than if separate. Peas are not an exhausting crop—on the contrary, they serve to enrich the soil on which they are grown. A careful analysis has shown that the soil on which a crop of peas had grown was richer in plant food than before the crop was sown. They absorb from the atmosphere much of their own nutriment, and convey to the soil elements of fertilization that serve to mature the oats growing with them, while the oats serve as a support for the peas, and thus both grow together more luxuriantly than if separate. And they are, if cut green for soiling, or even in a more mature state, a better food for stock and for milch cows especially, than either would be by itself.

The writer in the Journal adds:—
"In raising corn many of our best farmers say they prefer to mix eight, ten and twelve-rowed varieties of the same color together, thereby increasing the average per acre by from five to ten bushels. That has been and still is my practice, and I think with good results, and in the case of corn when all of one color no objection is made by the purchaser."

The accuracy of this statement can only be proved by experiments carefully conducted. Some of the seed corn planted in the experiments given may not have been good, other varieties good, and in such an instance the result would be that if the imperfectly ripened or otherwise inferior seed were sown alone, the crop would not be equal to that when it was mixed with seed of superior quality.

We must all agree with the writer in his dissent to sowing "mixed seed of wheat, rye, oats, barley, chess and cockle for the food of the human family." We do not know that wheat so mixed is sown in any part of Canada, though some of our farmers may not be as particular in the choice of seed as they undoubtedly would if they studied what would tend so very much to their own profit. If this slovenly farming be unknown here, it is not so in the United States. The writer in the Journal bears testimony that go where you will you will see but few fields of wheat of the winter variety that are not badly mixed with rye and chess, and the spring varieties with rye, oats and barley.

We do not agree in the writer's objection to every mixture of grain for the food of man. Many of our readers must remember the good brown bread so extensively used in the houses of farmers in the old country.—We do not now refer to the bread made from unbolted wheat flour, but to the dark (but healthy) nutritious bread made from meslin-mixed wheat and rye—those large meslin loaves that gave strength and vigor to the robust farmer and stalwart arm of the men before whose sickle and scythe fell the heavy crops of grain and grass when machines for reaping and mowing were unknown.

MESLIN.

Farmers in the best agricultural districts of the old country have found this crop of mixed grain very profitable, not as setting aside the crops of unmixed wheat, but on soil deemed unlikely to produce heavy wheat crops. A light crop is never a profitable one;

and good farmers then make it a rule, not to sow wheat where they would not expect a return of from twelve to sixteen barrels to the plantation acre of wheat. A much higher produce is sometimes obtained. Many fields that from the quality or condition of the soil are not considered likely to produce such a return of wheat, would yield heavy crops of meslin. Rye would do well, and meslin give a good return where pure wheat would not be a remunerative crop. The wheat sown with the rye would do better than if sown by itself. The plant food required by each species being somewhat different, each one would have a greater supply of food, and the naturally luxuriant growth of the rye would stimulate the wheat plants in their growth; so that where wheat, if sown unmixed, would be a light crop, it would, when sown with rye, give a good return. In the good grain markets there was always a ready sale and a good demand for meslin; so that the producer was at any time sure to obtain remunerative prices for any surplus over what he required for his own family use and his laborers.

Meslin bread is said by those who can speak authoritatively on the subject, to be possessed of peculiar qualities that make it preferable to pure wheat bread. There can be no doubt in its richness in the stamina of vigorous health and robust strength; and when baked in large quantities, as is necessary where there are many men to be fed, it retains its moisture and freshness longer than bread of other varieties.

Trip Through Scarborough, Markham, Pickering and Whitby.

Crops generally light in Whitby; peas look the best. The spring wheat looks better than in the west. Turnips late; potatoes did not come up well in many places. The bugs are beginning to be lively down here; the farmers neglected using Paris Green too long.

The Markham crops are looking better.—We called on G. Miller, Esq.; the old gent. is fairly raging against Christie. We saw his cows and calves which he intends bringing to the Provincial Exhibition. He has a fine lot, and he says he is determined to lead one of them into the ring himself, even if he should have to be wheeled in in a wheelbarrow to do it. We called at Mr. Bell's farm; he has the celebrated bull "Doctor," imported by Cochran. He was offered \$3100 for him; we do not think he will get it offered again. He is a beautiful bull, but has not grown as well as he might have done; perhaps he was over-forced when young.

Went into Mr. John Miller's, Pickering.—His crops looked better than any we had seen. He has been using salt and plaster on his farm for some years, and with most beneficial results. His two-year old bull "Lord Strathallan" will attract attention at the Exhibition; he will be hard to beat. Mr. Miller has now about eighty head of Durhams, and a fine lot they are. He looks on R. L. Denison as one of the best and most useful men that ever had anything to do with the Provincial Exhibition, and that he is made the scape-goat for the sins of others.—We have long been of a similar opinion, and despite the result of the investigation that we caused, we always held Mr. Denison in the highest respect; but arbitrations and laws sometimes bring unexpected conclusions.

We scarcely see any fall wheat growing in this part of the country. The spring wheat through Pickering and Whitby will yield about as much per acre as the fall wheat in Middlesex. It is not damaged in this part of the country by the weevil, as in the west. The Fife Wheat is the principal variety sown.

We paid a visit to the farm at Whitby that was examined by the Committee to select a site for the Government Farm. If economy, the farmers' interests, or educational interests were the first points to be considered, we think worse places might be found.

The Yorkshire Cattle Feeder.

Having conversed with farmers that have used this feed, we would again call the attention of our readers who may have animals that are not in a thriving condition, or who may desire to fatten animals either for sale or for show, that this is found to be a very valuable, useful, safe and sure stimulant.—See the advertisement in the paper.

Markham Farmer's Club Meeting.

The members of this Farmers' Club have had a very interesting and agreeable meeting at the hospitable residence of the President of the Club, John Gibson, Esq. We much regret that though they met early in June, the report did not reach us in time for our July number. Even now we gladly give a condensed report of it. There was a goodly number of members present, and to add to the pleasure and interest of the meeting, the ladies gave added charm, many of the members being accompanied by their wives, availing themselves of the invitation of Mr. Gibson, the worthy host of the day.

The President farms on a regular system, and he now took the opportunity to point out to the members of the Club the several growing crops of the seven-year rotation, the course he advocates and successfully practices, reasoning by actual demonstration of its advantages.

At 2.50 o'clock p. m., they met in the beautiful shaded hall of the President, on such a day a delightful place of meeting.—The meeting was called to order, as usual, by the reading of the minutes.

Agricultural topics discussed: Objections to the seven-year rotation, and the difficulties of carrying it out. The President, referring to the objections frequently made to the system, said it was one that could be advantageously carried out by every farmer, though farms differed very much from each other, and would, as being flat or rolling and as of different soil, require different cropping. This difference did not at all interfere with the working of the system, which under any kind of cropping proves advantageous. Under any treatment there will be a failure of some crops, but if this system be fully carried out, failure will be less frequent. The rotation system was obligatory on tenants in Scotland. Since commencing the rotation have had only one failure, a partial one, and that owing to couch grass, which choked out the seed.

THE MODEL FARM QUESTION.

This subject the President thought quite sufficient for the day's discussion. He thought the Government Farm was disgracefully managed, and that thirty thousand dollars were taken out of our pockets. It was, he considered, a subject for the Club to discuss, simply as an agricultural question, irrespective of party feeling.

THE TURNIP CROP.

Mr. Armstrong said he found the turnip crop essential for the feeding of stock. He sowed eight or nine acres annually. His method was to manure and plough in the fall, in the spring work the ground well, and about the 20th of June sow two pounds of seed per acre. He found the application of salt, 200 pounds to the acre, a great improvement to the crop, especially in a dry season. He sowed the Skirving and the Bangholm Swedes. This year he intended to sow two acres of Stone turnips. Had always been successful in raising root crops.

Mr. Tran approved of Mr. Armstrong's mode of cultivation. Had used plaster and salt, equal quantities of each. Last year he sowed his turnips the 27th of June, and the land was not properly prepared. Sowed 50 pounds of plaster and salt to the acre, and had a good crop. His neighbor had used plaster only and the results were good.

Col. Button.—If the ground be in good order and plenty of seed sown, with showers occasionally, the root crop is pretty sure.—Without rain there is no use in sowing turnips.

Hon. D. Reesor.—The theory of many agriculturists is that one bushel of plaster per acre is as good as five bushels; as only a moderate quantity can act as food for the plant, the remainder lying dormant.

The President.—Does not believe that plaster can take the place of manure. How long could turnips on any soil, with only plaster for manure, yield average crops?—Such reasoning is like expecting a man to be able to do his work day after day on only a dram of whiskey night and morning. To get substance from the soil there must be substance in it.

Is the root crop profitable?—This was the subject of discussion among the members; Messrs. Reesor, Crosby, Armstrong, Tran, Pike, Whiteside, and Milne for the affirmative, and by the President, Col. Button, and Mr. Jennings. Mr. Gibson's summons to tea brought to a termination this very interesting discussion.

And for us, we must thank our esteemed correspondent for his courteous kindness in sending us the report of the meeting. We hope to hear from him often. The reports of the meetings of Farmers' Clubs are at all times interesting to us whose occupation and delight are in the cultivation of the soil.—We would wish to have similar reports from many Clubs.

Ontario Agricultural Convention.

In these days of flourishing agricultural societies, we all admit the benefit to be derived from exchange of ideas among farmers. From our experience in travelling all over the Dominion, and careful examination of the methods of farming in the different places, we feel satisfied that every section has something to learn from others, and almost all have some profitable knowledge to impart.

Our aim has constantly been to act as a medium for just such interchange of sentiments and facts as these. We have constantly endeavored to point out good systems where we have seen them in operation, and distributed the knowledge through the length and breadth of the land. What we have always desired was that the FARMERS' ADVOCATE should be, not a reflex of our own system, but a journal of the best systems of every farm in Canada combined in one.

What we now propose is a union of the leading spirits of the agricultural societies of Ontario into one body, for the discussion of interesting and valuable points in agriculture. Supposing that each agricultural society shall select one member, whose duty it shall be to represent that society at the Convention, and then have a meeting in some central town in Ontario, for say a week's discussion of such subjects as they may deem necessary. Hold the meeting in winter when we farmers have time on our hands for such matters, and let each representative go to it determined to gain information which he can disseminate when he returns home; and let him go there with facts concerning the raising of crops, &c., in his own township.

Canada's only dependence is upon her farming, and anything which tends to improve this ought to be well supported by the country. Parliament ought to make a grant to aid in carrying out this idea.

The present Board of Agriculture and Arts does not embrace as wide a field of action as we contemplate might and should be embraced in the Agricultural Convention. The principal business now devolving on the Board is the management of the Provincial Exhibition, and attention to a few minor affairs, such as arranging the Herd Book.

We believe a general Convention for the discussion of the interests of agriculturists would be of much benefit. Each County Council might appoint one farmer—who should be one of the most enterprising practical farmers in the county—to attend the Convention, to make suggestions and bring back reports to the county sending him.

Our markets for all agricultural produce might form a subject for discussion; the treatment of stock, handling the crops, the management of the Provincial Exhibition, the management of the Government Farm, the agricultural press, and such subjects as might be discussed with great profit to the country.

P. T. Barnum to the Public.

A rumor,—originating with, and industriously circulated by unscrupulous showmen—having gained some credence, that I would divide my Great Traveling Exhibition on leaving Boston, I beg to state that such an idea has never been entertained for a moment. The vast enterprise,—involving a cost of one million five hundred thousand dollars,—is the crowning event of my managerial life, and, although acting against the advice of many experienced showmen, I shall adhere to my determination to keep the monster combination intact during the entire season.

The public's obedient servant,
P. T. BARNUM.

THE Agricultural Show of the Ameliasburg Agricultural Society will be held on Saturday, October 11th, at Roblin's Mills, Ameliasburg. Edw. ROBLIN, Sec'y.

A gentleman addicted to scientific inquiry has discovered that thirty-three days complete the cycle of the potato bug generation; that 709 of the critters are the average product of one female, from which the family grows in the second generation to 245,000, and in the third to 82,700,000.

Meeting of the N. Norwich Farmers' Club—The Agricultural College.

Thanks to the Secretary of the N. N.F.C., for his courtesy in sending us a report from this Club of its last meeting. As the speeches reported are in contradiction to our opinions given in previous numbers of the *Advocate*, and, we have reason to believe, of that class for whose benefit the Agricultural College is professedly established; and as we are lovers of British fair play that deals out even-handed justice even to opponents, we give insertion to the report received as little abridged as our limited space allows. Speaking of British fair play leads to the suggestion that it might be better if the arguments of the opponents as well as of the supporters of the Government project had been reported by the Secretary.

I send you the President's and Secretary's speeches at the last meeting of N. Norwich Farmers' Club, in the discussion on the Agricultural College and Model Farm, with a few notes from those who were opposed to the College.

Mr. E. Palmer, President, said:—My views with regard to the Agricultural College and Model Farm are that it will be the only place where a proper education can be obtained for farmers. In bygone days it did not make so much difference whether the farmers were educated or not. After the timber was off, the soil was rich and yielded abundantly with very little care; but the soil is less productive now, and requires better treatment. Farmers are worse educated than any other class of people, and what little education they have is not very useful as far as farming goes. It is argued that too much education spoils the boy for the farm. What is the reason? I think it is quite plain that the education they have received has not been such as they would require in practice on the farm. They have spent four or five years at college, where their associates have been studying for some profession, and the tendency has been to draw their minds away from the farm, instead of attracting them to it. At the end of the course at college, the boy comes home with fine ideas of himself especially. Finally, he comes to the conclusion that it is all very fine that the farmer is the most independent of all men. If such is the case, he thinks he would rather be somebody else, and not quite so independent. But, unfortunately, his education has not fitted him for any profession, and consequently is of little use. Now, if he had such an education given him as he would be able to obtain at an Agricultural College and Model Farm, I believe he would have come out a first rate farmer, with good muscles and a good will, which goes a good way to make a good farmer.

The Secretary (B. J. Palmer) said the establishment of an Agricultural College and Model Farm, and its advisability is a momentous question. Such an institution would have for its object the teaching of the theory and practice of farming. The question therefore narrows down to the one point, viz.: Should the farmer be educated so as to take a stand in the world among the learned and skilled of other professions; should he understand the principles upon which his business is based; should he be able to withstand the gross frauds perpetrated upon him by dealers; should he understand the laws of breeding; in short, should he understand any of the laws which govern nature; or, on the other hand, had he better be still the bottom of the pile; is it better for him to be cheated and imposed on by patent righters and linen coated sappers, alias agents; and had he better be totally ignorant of nature's laws? Every man can answer for himself. For my part give me education. It is argued that a man by constant practice and close observation can become a good farmer. So he can, but it takes him the best part of his life to learn what is already known, whereas a few months at the college and farm would place him on a level, at least, with the ordinary old farmers of the country. Thus education, when to the point, lengthens a man's usefulness in life. It also elevates a man into a better circle of society, while it at the same time makes him more genial in lower society. He can talk with the most learned in the land on almost any subject, and who will deny the fact that the better informed a man's company is the better the ideas he will glean from the company. It is stated that a Model Farm under the Government will check private enterprise.—What is meant by this assertion? Why, it

will curtail the opportunities many enjoy of getting up new varieties of seeds, &c., and getting big prices for nothing. Take, for instance, the potato. How much money has been gulled out of the farmers who invested in new varieties as fast as they were advertised? Out of all the varieties lately introduced, only one has stood the test and met with the general approval of the public, and that is the Early Rose. Where is the money farmers invested in such varieties as the Gleason, Harrison, Gooderich, Peerless, Prolific, Climax, &c., &c.? Patent washing fluids, patent insect exterminators, patent potato bug poison, and the greatest gull of all, the patent process of preserving fruit and meat with sulphur.

It is argued that the Agricultural College will be used as a mere political engine. I would ask if the University of Toronto is a political engine? It is established by the Government, and, notwithstanding all the efforts put forth by denominational colleges to pull it down, it still stands and is the standard of education on this continent.

It is argued that the present Government is not justifiable in changing the site of the Model Farm. Changing the site is good proof of the usefulness of education to the farmer, because the change was made on the strength of scientific evidence, and who can say and prove the change to be a bad one.

The great expense of the College is brought up against it. I acknowledge its vast expense. Professional men cannot work for nothing, and yet how few men who spend their lives in the interests of science die wealthy! Perhaps, however, the College will save to us as much of our money by defending us against frauds, &c., as it will spend, and then we shall have the education to boot. In conclusion, I would ask what institution of learning is not expensive to its supporters? Why do we not raise a cry against common schools? They are expensive and parents never see their money back. Yet he who would say down with them would be looked upon as one who wished for the old times, when the wild Indian was on the war path and justice was administered with the rifle and bowie knife.

Mr. Gilbert Moore took sides against the College, and said it was time enough for fifty or a hundred years to establish an Agricultural College. He thought that the will and ability for manual labor was all that was necessary for successful farming. However, when it came to voting on the resolution passed at the close of the meeting, Mr. Moore would not vote against it. Mr. Butterfield thought the difficulty with farmers was not from want of knowledge but because of the high price of labor and low price of products, together with poor crops. Mr. Losie also spoke against the College, but produced no argument, and finally voted for the resolution. The following is a copy of the resolution passed by the club:—Moved by W. S. Moore, seconded by Elias Mott and resolved, That this club decidedly approves of the establishment of an Agricultural College and Model Farm, and believe it will prove highly beneficial to the rising generation.—B. J. D.

THE AGRICULTURAL COLLEGE AND MODEL FARM.

We are pleased to find that the supporters of the Government Agricultural College and Model Farm have revived the discussion on this subject, as it gives an opportunity to bring again before the country the wrongs done to the farmers by the Government, who under the pretence of fostering agriculture, are imposing on the heavily burdened contributors to the national revenue, an additional tax to be bestowed upon political parasites. We must give credit to the Messrs. Palmer for their courage in standing by the Government in their indefensible measures, and for their ability in the management of a bad cause. As they have again come forward and opened the pleadings *de novo* we must in courtesy reply. We propose to do so very briefly.

The question at issue is not covered by the resolution carried at the meeting of the North Norwich club. Their approval of the establishment of an Agricultural College cannot be construed into the approval of the Government Agricultural College to which we objected; and they who support our views, may, with the greatest consistency, not vote against that resolution. Our objection to the project was, that its purpose was not to promote the interests of Agriculture, but to provide for hungry political followers. That it was unnecessary, uncalled for, imposing heavy taxes on the country, for which no

adequate remuneration would ever be received; and that very class, for whose interest its promoters pretended to be designed, were not favorable to it.

Let us take in order the arguments in favor of the measure. The College will be the only place where a proper education can be obtained for farmers. Farmers are poorer educated than any other class of people, and what little education they have is not very useful to them as far as farming goes.—E. B. Now, if this be true, how does E. B. or the Government propose to remedy it? To support and encourage a superior class of school accessible to the families of the farmers? To raise the status and improve the condition of farmers so that their sons, not being compelled to give so much time to work on the farm, might give more time to study? No, nothing of the kind. The remedy is to found an Agricultural College at some one place in the Province (say on a farm purchased at an exorbitant price from an orthodox politician)—to expend thousands upon thousands on professors, that a few—a dozen or a score or a hundred—may study chemistry, botany, mineralogy, geology, meteorology, &c., &c. And then—the great desideratum will have been obtained. None can say then that "farmers are more poorly educated." Is there not at Guelph an Agricultural College; are there not learned professors instructing half a score of the embryo farmers in all the ologies! Some "of the old times" may then be bold enough to say with E. B., "The education they have received has not been such as they would require on a farm." Our estimation of the number of agricultural students for the A. C. is not merely from supposition or guess. We judge from what has been and is now in such Colleges in the United States. We have had a report from an A. College in a Western State, and of about one hundred students seven were studying agriculture.

"Such an institution would have for its object the teaching of the theory and practice of farming."—B. J. P. The theory and practice are needed to constitute a really good farmer, but in such an institution as that proposed, the instruction is apt to be more theoretical than practical; and we must bear in mind that a practical farmer may be very successful, though not well versed in the theory, while a mere theoretical farmer can have very little prospects of success. P. J. P. confesses that scientific men seldom die rich. "The teaching of the theory and practice of farming." Now, one important branch we suppose would be improvement of the soil, if necessary. Every farm in Ontario is not a model farm. Where, we ask, are the opportunities on this Guelph farm for such an institution. It has been selected, they say, for a directly opposite reason. It needed no improvement. It was a carefully nurtured farm in a very high state of cultivation.—How unlike many of the farms the students will have to enter on when they cease being fancy agriculturists.

But another argument in favor of the Government project is that "it will save the farmers from being cheated and imposed on by patent rights and linen-coated sappers, alias agents." From such arguments we judge of the weakness of the cause in whose support they are advanced. "It will curtail the opportunities many enjoy of getting up new varieties of seeds, &c., and getting big prices for nothing. The potatoe—how much money has been gulled out of many farmers who invested in new varieties as fast as they were advertised? Only one variety has stood the test—the Early Rose." We would ask in reply how many of these varieties have not succeeded? If the Agricultural College is to put a stop to the introduction of new varieties of seed, it will add another injury to the interests of the farmers and the country. Is B. J. P. desirous to return to the old varieties, Coppercoats, &c.?

"Changing the site of the Model Farm is good proof of the usefulness of education to the farmer."—B. J. P. On the contrary it has proved the uncertainty of chemistry when applied by mere theorists. The report of the Michigan professor was unfavorable to the Mimico Farm; while the report of Professor Buckland differed from that of the Michigan professor, and the farmers—practical not theoretical men—whose lands adjoin the Mimico farm, and some of whom farmed part of it, say the condemnation was unjust.

There is yet another argument. "It will elevate a man into a better circle of society, while it at the same time makes him more genial in lower society." And is this all? For this is the country to be taxed so heavily

that the few who can or will be educated in the College may move in higher society and may condescend to be genial with those who learned and practise farming on their fathers' farms; thus directing the attention from the farm of those for whose education in farming the country has paid; and that the daughters of farmers may be fit companions for those moving in this higher circle, it will be necessary that they too have their education at similar colleges, or those young agricultural collegiates will seek for congenial mates from the towns and cities.

But "a few months at the College and Farm would place him on a level at least with the old farmers of the country."—B. J. P. In a few months to be practically instructed in farming, for its professed object is the teaching of the practice as well as the art of farming. As practical and not unsuccessful farmers, we beg to say to B. J. P. that a few months will barely suffice to learn the outline of the theory; while in the practice he would be a perfect novice. How little the practice is understood by mere theorists—book-farmers—is shown by the opinion advanced that if a farm be impoverished by twenty years of exhaustive cropping, its fertility cannot be restored in a less period; whereas any practical farmer could in one-tenth or one-twentieth of the time make it fit to yield abundantly.—Ass't Ed.

State of the Crops.

Since writing our last notice we have had a continuation of the most favorable weather. The crop that appeared almost past reviving improved as if touched by the magic wand. The hay crop is generally a light crop, we think not much more than half a crop, although there have been some good pieces in some parts of the country.

The fall wheat, although patchy in places, and in some parts almost ruined, still there are so many really good pieces and the cool, damp and growing weather we have experienced through the middle of July, has given us a much plumper and brighter sample than usual. We think the fall wheat on the whole will be near an average crop; in some sections quite an average, in others not half an average.

The spring wheat in the east and northern parts of Ontario is good. In this and the western section the weevil has injured it so much that it will not be over half a crop.

The peas in all sections we have seen look exceedingly well, and will be over an average.

Oats and barley have so much improved that about an average crop will be harvested. The weather has been so unusually favorable for our grain filling this season that the quality will make up in a great measure for the quantity, one grain this season being as plump and nutritious as two would often be when the ripening process has been hastened by the great heat and drouth that we generally have at the season of the filling in of our grain.

The root crops will be good on the whole, although the dry seeding caused many to sow a second and a third time in some sections; in others the first sowing took, and a great crop must be the result. Mangolds and carrots will be very good; potatoes will be plentiful; they all look well except some few spots where people have abandoned them to the bugs. Most people have destroyed the bugs to a great extent; we hardly think they are as bad in this section as they were last year. The parasite that preys on them must be increasing, and doing its work in destroying them for our benefit.

The Agricultural Emporium.

The stock books are not to be issued until after harvest, or not until September. If you have not read the charter we would recommend you to do so, and inform us if you desire or would be willing to take one or more shares in it. The charter was published in the June No.; read it and let us hear from you regarding it.

Shall we as farmers be united or shall we be dissevered against our interests? Are the railroads and party politics to rule, tax, bleed us, and be our masters, or are they to be our servants? Let us have one independent plank to stand on; let that be agriculture.—Let us have one paper untrammelled by political parties; let that be as it has been, namely, the *FARMER'S ADVOCATE*.

Remember the site will be selected by the stockholders, and will be where one or two enterprising persons take an interest in it and are willing to participate in its profits, management and establishment.



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AGRICULTURAL.

THE GRAIN MARKET.

The advices from England give hopes of an improved state for the grain crops, in consequence of the change in the weather. The great amount of the cereals which we have been able to ship from our surplus products to Great Britain and Ireland, has had the effect of keeping their market there well supplied, and alleviated the distress which at one time so seriously threatened the people of England and Ireland, the former from the shortness of their wheat crop, and the latter from the deficiency in that of their potatoes from disease.

The demand still continues undiminished for all the grain we can get into their markets, for the last estimates we have seen from a reliable source, places the figures at upwards of 50,000,000 bushels as the quantity required before a new crop comes in, and the bulk of this amount is looked for from the United States, as the supply from the usual European sources is now admitted to be far below former calculations. We have still a large amount of grain on hand, and although the quantity at the principal shipping points is decidedly less than at this time last year, the prices now ranging will bring it into market, notwithstanding the heavy freights, to which is attributed the cause operating to prevent farmers and small dealers at the West from sending their stocks to the seaboard. Wheat about this time is quoted on our Exchange at \$2, rye, \$1 and corn 65 cts. per bushel. The present appearance of the wheat fields does not indicate a very heavy crop this year—and the backwardness of the season (being at least twelve days later than usual) gives no certainty of an extraordinary corn crop like that which we had last year.

The frost, too, which was experienced at the South in April, not only affected the cotton and the fruit, but also the tender corn which had been planted—and in many cases where the corn was gotten in, the cold weather has prevented its germination, and re-planting to a very great extent has been the consequence.—*American Farmer.*

HINTS ABOUT WORK.

We have said there is no lack of profitable work for any man capable of doing it. But there are different degrees of capacity. We have to compete with each other, and the man that can accomplish a given amount of work at the least cost makes the most money. **Farmers must study economy.**—We do not mean by this that they must live cheaply.—Farmers are not often extravagant in their style of dress and manner of living. It is the best of economy to dress warm, and comfortably, and appropriately to do the work. It is good economy to make the house as pleasant as possible. It is good economy to eat well, sleep well, and work hard.

Working hard is not always working to the best advantage. A man may work very hard chopping wood with a dull axe, or pumping water with a pump that "sucks air," but he is not working with economy.—A man gets pay, or ought to get it, not for "working," but for what he accomplishes. This is as true of the farmer as of his hired man, though we do not feel its force so fully in the one case as in the other. We do not like to pay a man for carrying one pail of water when he might just as well carry two, or for plowing or harrowing with one horse when he might just as well drive three. But farmers themselves often do things equally wasteful of time and labor. Do we never take a load to the city and come back empty, and then go empty to the city to bring back a load, and thus lose half our own time and that of the team, and pay double toll into the bargain?

Turning animals to a straw stack and letting them help themselves seems an economical way of wintering stock, but it is fearfully extravagant. We do not mean merely that they waste the straw, but it is compelling them to eat their own bodies—it is feeding them on beef, mutton, butter and fat! Can you afford to do so?

True scientific farming consists largely of the exercise of common sense. No amount of mere knowledge will enable us to dispense with system, order, judicious planning, and economical work.

Live Stock.—Much of the success of a farmer depends on the proper and economical management of his live-stock. We should never forget that it is live-stock. We can paint an implement and stow it away until it is required, but our animals must have food to eat every day. They must have food enough to keep them warm and sustain the vital functions. If you do not give them food enough they must live on their own fat and flesh.

Horses.—With us, timothy hay sells for as much per ton as we can buy corn meal for. In such circumstances, where a farmer has plenty of good bright oat or wheat straw, it is poor economy to feed timothy hay to farm horses. Cut up the straw into chaff. A bushel of it will weigh about eight pounds. If the horses are not working mix two quarts of corn-meal with a bushel of the chaff, and let them have all they will eat. If they leave any, remove it from the mangers and give it to the cows. If the horses are at moderate work, two or three days a week, mix three quarts of meal with the bushel of chaff, or four quarts if the horses are at moderate work nearly every day. If you have conveniences, it is a great advantage to wet the chaff with boiling water; cover it with a blanket and let it stand for a few hours. Try this plan.—*Am. Agriculturist.*

PETROLEUM FOR MAY BEETLES.

Mr. C. R. Dodge, the statistician of the Department of Agriculture, gives the following in relation to the white grub so common in meadow lands:—

"This destructive insect, producing in this country the May beetle, and in Europe the beetle known by the common name of 'Cockchafer,' is well known to many of our readers through the damage it does to pastures and grass lands. Their mode of warfare is to devour the roots of the grass, causing the sod to die out in spots, and it is said that simply applying to the affected places water in which petroleum has been stirred, will exterminate them. It is also recommended to keep down insects on plants. The small quantity of petroleum seems to impart its disagreeable properties to a large amount of water, and applied in this manner the plants are uninjured."

The May beetle of the United States and the Cockchafer of England, are one and the same thing. The larvae require three years from the egg to attain the moth state, during which time it feeds on various vegetable substances, and is particularly destructive to meadows. We have seen meadows so seriously injured that the sod might be rolled up like a carpet. We have not so much faith however, in the saturation of water with the effluvium of petroleum, for killing this pest, unless applied in such quantities as would be detrimental to vegetation, and much less should we advise its application to the foliage of living plants. The fact that the larvae sometimes disappear suddenly after these isolated applications, may fairly be attributed to the fact that they may be at this time just ready to undergo their transformation.—*Western Rural.*

[Will some of our readers try the above remedy and report to us?—Ed. F. A.]

KEEP YOUR IMPLEMENTS BRIGHT.

When you have done with your plows and other implements having bright surfaces, always clean them thoroughly. Wipe them dry, and before putting them away rub them lightly with lamp black and fatty oil, or even lamp black and kerosene. It will preserve the bright surface intact, if they are kept under cover as they should be, and save much brick dust and water or oil when they are to be used again. Many good farmers have a cloth moistened with oil in the field to rub the bright surfaces of implements with at night, to prevent the rust that often attacks them after a day's work, particularly on soils that do not scour. It will be found to be a paying investment.

A NEW WAY OF BURNING STUMPS.

A writer in the *American Agriculturist* gets rid of stumps by boring a hole with a two-inch auger from the top of the stump to the bottom. Another hole is bored near the bottom at right angles to the first and connecting with it. Fire is kindled over the horizontal hole, and the natural draft draws the fire through the two holes, consuming the centre of the stump first and ultimately burning the whole.

ACCLIMATING THE CEREAL AND VEGETABLE CROPS.

With the exception of old experienced seed growers and venders of seed, the knowledge and importance of acclimation is scarcely known in this country. A want of practical experience by American garden seed dealers is patent; the inexperienced greatly predominating.

Indian corn grown north or east of the city of New York, will scarcely produce an average crop in the Southern States short of the third year's successive seeding. English wheat requires no acclimation, but the size of the grain when seeded in the United States gradually becomes smaller, the same as our common bearded or bald wheat, and according to the authority of London bakers, an equal quantity of American wheat will produce more and better bread than English. The same remarks apply to imported Mediterranean wheat.

Winter wheat, rye and barley will produce average crops the third year after successive spring seeding, and *vice versa*.

Vegetable Crops.—The large late cabbage and Savoy seed, imported from England or the Continent, will produce nothing but leaves, or rather unsatisfactory results, till the third year's successive seeding. On the contrary, seeds of Early Yorke and other early crops, head as perfectly as American grown seed. Imported beet, carrot and parsnip for culinary purposes, mangel wurtzel, sugar beet, field carrot, ruta бага and the various yellow and white turnips are coarse, and deficient in saccharine matter—all these require acclimating, or the seed grown from strictly American stocks.

With the exception of the following vegetable seeds, all others not named can be imported with safety, viz:—

Beans—Lima, Snap or String; Cymbin or Summer Squash, Winter Squash, Pumpkin, Tomato, Cucumber, Egg-plant, Melons, Onions and Lettuce.

The Vetch again.—Since sending you an article for your May No., relative to the Vetch, and having noticed your comments on the same, I will add, if you please, that I recently read an advertisement by a Canadian merchant that he had for sale Vetch seed grown last summer in Canada. If the Vetch will mature seed in Canada, I cannot see why they will not mature in this country. The plant, vines and pods are similar to the garden pea, which requires no acclimation, neither (I opine) does the Vetch. I have sown half an acre with a small quantity of oats and flaxseed. If I am spared I will send you samples cut in the flower and in the matured stalk.

Your cautionary comments are doubtless proper, and if generally followed by other proprietors of agricultural journals, would save the unwary from loss and disappointment. I presume you are aware that I have no pecuniary interest in recommending the Vetch or any other plant.

Vetch seed is black and roundish, averaging the width of American wheat. No fan screen or sieve would separate it from wheat; but by cutting it in the flower for forage, for which its chief value consists, there can be no risk of mixture. The Roman Catholic Bible alludes to Cockle and Mustard, but makes no allusion to tares.—*Plowman in American Farmer.*

THOROUGHLY CULTIVATED FARMS MOST PROFITABLE.

Much has been written and said which are the most profitable, large farms or small ones. One of the peculiar traits of the American character is that insatiable thirst or hankering for more land, with little regard to its profit as an investment, and often without any hope for its decent cultivation.

What results from this too common course? Just what we might expect. The farmers and their families live in discomfort, have poor farms, and wear out their lives to little purpose. Here is a man with 100 acres of land, all he can well manage with his means. Adjoining him is another tract of 100 acres which he is desirous of adding to his domain. He adds it and by that means runs in debt for one-half or three-fourths its cost, thus using up all and more than all his working capital. This capital has enabled him to cultivate his 100 acres at a profit, giving him an income above all expenses, aside from value of land, of six or eight per cent. on that value.

Adding the 100 acres just doubles the investment in land, and should also double the profits. But is this the case? In all our ex-

perience and observation it is not. The per cent. of profit is very much decreased, only a small sum being added to the income from the original farm. Say the farm is what may be termed a wheat farm. On the original farm there were grown 800 bushels, and on the 200-acre farm there are grown only 1000 or its equivalent, instead of being 1,600 as there ought to be.

A poor system and corresponding culture not only bears heavily upon those who practice it, but its influence is wide-spread, penetrating to every branch of industry. Cripple the agriculture of the country, and manufactures, trade, commerce and all business is affected or stagnates. High or thorough culture and management of the soil and special branches of agriculture tend directly and strongly to advance the value of land in any special locality, benefiting not only the farmers, but all classes of society. Labor creates wealth, and nearly all labor is connected with the soil and its products. The too often failure of the cultivator of the soil observed in travelling through our country, arises from trying to farm too much land. More profit would be realized by judiciously employing the capital on a smaller number of acres.—Large farms of themselves are not objectionable, especially if they are thoroughly cultivated. But when only one-half or two-thirds of a full crop, the capital is poorly invested and much of it lying idle.

A farmer, on commencing operations, should sit down and count the cost, whether his capital is sufficient for his undertaking. He should consider the requirements to success, such as drainage, culture of varied crops, proper selection of farm stock, providing suitable shelter and accommodation for the stock, husbanding and judicious application of manure, selection of best qualities and varieties for seed, and the most suitable time and season for planting, etc., and also the adoption of the most suitable tools, etc., for securing the culture and harvesting of his crops.

If there be a deficiency in capital or agricultural knowledge, it would be far better to only attempt to cultivate so much as will best serve to educate, and conduce to skill in the cultivator. The old saying, "a little farm well tilled, a little till well filled," was never truer than at the present day. Thorough culture is the only culture that pays.—*W. H. W. in Western Rural.*

DRIVING FENCE POSTS.

On one occasion the writer desired to erect a board fence around a field which was free from stones, and proceeded on the following plan:—

The line of the fence was laid out perfectly straight, and small stakes were driven into the ground sixteen feet apart. A sharp wedge-shaped pointed crow-bar was procured, with which holes were punched in the ground where each stake was placed. By working the bar back and forth in the ground, the hole was made large enough to fit the post closely, and two feet and a half deep. The post was pointed very evenly on each side, so that it would drive straight. The top was beveled, so that it would not split in driving. A triangular stool with three legs three feet long, and a heavy beetle completed the outfit. The beetle was made out of a piece of soft maple, fifteen inches long, cut from a small tree about a foot in diameter. The bark was trimmed off and the edges were beveled off about two inches; a handle of ash two inches thick was put through the beetle, and was trimmed down so as to be an inch and a half thick one way, and two inches in another. This prevented it turning in the hands when striking with it. When the posts were all ready to be driven, a man held one of them with the point in the hole, while another mounted the stool and drove it down with the beetle. With a little care the man who held the post kept it upright and in a line with the rest. As the posts were driven, two men followed nailing on the boards. These four men completed a five-board fence around a square ten-acre field in one day and a half, making the labor equal to six days' work. Had the holes been dug the job would have taken at least four times as long. The cost of the labor was less than ten cents a rod; the men were good mechanics, or it would have cost much more, their labor at two dollars and a half a day being probably twice as cheap as common labor at half that rate. In addition to the superior rapidity and cheapness of the work, the fence was much firmer than it could possibly have been had the holes been dug for the posts.—*Am. Agriculturist.*

CLOVER.

By George Geddes.

There are two well defined and distinct varieties of red clover. The differences between these varieties are well understood where both kinds are cultivated, and the farmers who raised them usually described them by using a term that indicates the most marked difference between them—the 'large' and the 'small' red clovers. By the large they mean what the books call *trifolium pratense*, and by the small they mean what my old book calls *trifolium medium*.

There is still another variety of red clover, still smaller than the medium, but it is never cultivated so far as I have been able to learn, and only occasional plants are found in our fields. They are quite like the medium in appearance, but they are smaller and earlier in blossom. This variety I mention here as explaining the origin of the term medium.—For all practical purposes it is of no account, and we may as well accept the words 'large' and 'small', usually employed by farmers to express the important characteristics of the only red clovers that are cultivated for pasture, for hay, and for manure. The other points of difference between these varieties may be stated as follows:

The large red clover is slower in starting its growth in the spring, or after being fed or cut off, than is the small variety. The large produces a coarse long stalk, with fewer leaves than the small, and but one full crop can be produced in a season, that is to say, there cannot be a full crop of hay cut and after that a second crop that will ripen its seed be raised in one season, in such a climate as that of Central New York. While the small clover will produce a full crop of hay by the middle or 20th day of June, and give the farmer time to make his hay and take it off the ground, and after that new stalks will start from the roots and produce a second full crop, and mature the seeds in time to secure the whole before cold weather sets in. This is true of the climate found at the forty-third degree of latitude to about 1200 feet above the level of the sea. Above that level, or thereabouts, in the latitude of Central New York, the small red clover does not mature the two crops in sufficient perfection to lead the farmers to cultivate it to the exclusion of the large kind, and they generally think that one full crop, with the spring pasture furnished by the large variety, to be worth more to them than the two imperfect crops that they might secure from the small kind.

Their manner of treatment, in general, is this: Pasture their clover fields till about the 10th day of June, and put on stock enough to feed the whole down close. In case any part of the field is not fed down close, the scythe is used to cut off the top. Then remove the cattle, and apply gypsum (plaster) freely, and if a good shower soon comes, the clover plants will each throw up a number of stalks that will grow rapidly, and mature seed in time to secure it before cold weather sets in.

Another method sometimes adopted is to sow the large kind of clover seed with timothy to make hay, in which case there is no pasturing allowed in the spring. The clover and timothy will mature at about the same time; that is, the large clover will be in full blossom at the time the timothy is in its best condition to make good hay. When the books say that this large clover blossoms from May to September, they can only refer to some very rare blossoms in May—perhaps the production of some stray seeds of the small kinds that have become mixed with the large.

Mr. Torrey is right in his conjecture that the plants that remain after the crop has been sown for two years, are mostly due to seeds that have produced plants since the first year after sowing. But this statement must be qualified by saying that in our mode of raising clover some part of three different years are really used. We sow in March or April clover seed on our winter wheat, and the young plants being shaded by the wheat, are prevented from growing much until after the wheat is harvested. This first year is really counted for nothing in the yield of crops. The second year the small clover gives two crops—one for hay and one for seed; and the third year two like crops, but usually much smaller, especially the last one, than those produced the second year.

When the large or small red clover is either cut off or fed off so often as to prevent

seed forming, it is the opinion of some very observing practical men that the plant will keep alive and increase its roots for more than two or three years. When clover has many times been sown, and many seed crops taken off, there will be so much seed in the ground that a succession of plants will sometimes come forward, and thus clover will continue to grow for a long time in timothy meadows and pastures, and for many years after any seed has been sown. Very often our barley crops at harvest have been accompanied with so much volunteer red clover as to give an appearance equal to full allowance of sown clover seed, when it was really due to the fact that a crop of clover seed was, the year before, cut on the same fields, and a good deal of it shelled, or otherwise, was left on the ground to grow and show itself in the following barley crops.

Farmers that raise the large variety of red clover generally insist that the roots are larger and longer than those of the small kind, and they say of more value as a fertilizer of the soil. Roots of red clover go very far down for food and moisture, and some facts that have come to my knowledge lead me to believe that where the soil is not rich the clover roots go deeper down than they do in more fertile ground. In case there is an abundance of plant food in a mellow surface the tap roots throw out more laterals and fill the surface soil with fine fibrous roots and thus receive the food required. In harder, less broken and less fibrous sub-soils, the clover roots push their way down through the fine crevices and seams to an unknown depth.

I have seen a root that was dug up with some care traced fully four feet deep into these shales, and there broken off while yet of considerable size. Roots three feet long, and broken off where they were a quarter of an inch in diameter, are frequently found in fields that have been plowed when the earth was saturated with water, and a dull plowshare was used. In such cases these broken and pulled-up clover roots will stand far up over the plowed ground, giving the appearance of the stalks of dead weeds.

Where clover is sown, and the only object is to provide the most pasture possible from the crop, it is best to mix the seeds of the two varieties, half and half, and sow twenty pounds (a bushel has sixty pounds) on an acre. The early or small kind will start first in the spring, or whenever eaten off, and the large variety will come after, and perhaps grow somewhat stronger. If the object is to make hay of the crop, the smaller variety is almost universally preferred where both kinds can be raised in their best perfection.

The choice of variety has been decided by climate. On the high lands of the south part of the country, where the season is too short to mature two full crops of the small, there the large is generally cultivated. The north half of the country has but a very little land that rises more than four hundred feet above the sea, while in the south part of the country there is land that reaches nearly 2000 feet above tide level. 300 to 350 feet of altitude has been determined as equal to a degree of latitude, measured on a level surface, in influencing the climate.

I add one thing as perhaps of more importance than anything I have said. Red clover, large or small, should have frequent dressings of finely ground gypsum, commonly called plaster, applied on the young plants soon after they commence their growth, and immediately after mowing a crop of hay, to start a vigorous growth, either for a seed crop or for pasture.—*New York Tribune*.

BONE DUST.

An intelligent English farmer, writing to the *Mark Lane Express*, states his experience with bone dust and superphosphate made from bones. He believes bone to be the "cream of cream" as manure. On pasture land in Cheshire, where he lived seven years, he found it indispensable. In Wiltshire he found it developed the best grasses and produced a superior herbage; it produced the best roots, and on the wheat crop, in the shape of superphosphate, it secured a good stand. He used \$2,500 worth of it, and believes it to be the best worth a farmer's attention of any outside manure. He found on clay lands, impregnated with oxide of iron, that until the land had been limed the bone had no effect, but as soon as lime was applied bone was used with success. Finally, on experimenting with it on sandy soil, he found it perfectly useless, and even in quantities of 700 pounds per acre, applied to old pastures or young grass lands, it had no perceptible effect during many years.

ROOTS AS MANURE.

It has been found that the roots of a good crop of red clover left in an acre of land after the removal of the crop, weigh six thousand five hundred and eighty pounds, or from three to three and a half tons. The same examination gave the weight of an acre of rye roots at thirty-five hundred pounds, and of wheat roots at thirty-four hundred lbs.—All of this matter is of course valuable for the use of those crops that may be grown during or after its decomposition.

The well-known superiority of clover as a manuring crop, however, is not due alone to the greater amount of organic matter, taken mainly from the atmosphere, which its roots supply, but also to the position in which the matter is deposited. The roots reach deeply into the soil, and on their decomposition they serve to draw moisture from the lower soil, and by the decomposition of fertilizing matter to a considerable depth they induce the descent of the roots of other crops to a point where they are much more sure of a supply of moisture during dry seasons than they could be if nearer the surface. Then again, these deeply penetrating roots traverse parts of the subsoil not heretofore open to vegetation, and in their decomposition they produce a chemical effect on the inorganic substances that lie along their courses, and help to render them, too, serviceable for future crops.

CAUSE OF RUST ON WHEAT.

The close, long-continued analytical researches of Dr. Sprengel led to the conclusion that an excess of iron salts, and especially of the phosphate of iron, greatly favors the growth of red rust on the leaves and culms of wheat and other cereals. A soil in the vicinity of Brunswick that did not lack draining, but lime, was remarkable for growing wheat and barley always attacked and generally blighted by rust. A quantity of this soil was taken into a field generally free from this often ruinous parasite, to form an artificial soil fifteen inches in depth. Wheat planted in this was badly rusted, while that grown all around it in the same field was free from the same malady. There was something in the soil peculiarly favorable to the fungus which stains one's clothing as red as bog iron ore itself. Low ground, in which salts of iron collect in excess, is generally recognized as being very subject to rust. Drainage is a partial remedy and no more. Dr. Sprengel found on analysis a fraction over a half per cent. of the phosphate of iron in the soil under consideration, with only a trace of lime uncombined with silicic acid. As free lime will take phosphoric acid away from iron, and indirectly convert iron into the harmless peroxide, and at the same time produce the valuable fertilizer, phosphate of lime, liming was prescribed and the cure was perfect. Here is a plain case where the analysis of a soil by a competent expert detected the source of a great and permanent evil, and transformed, as by magic, a mineral poison into plant food of inestimable value. To de-roy soil analysis by skillful chemists is shallow quackery—a weed that finds too much favor with American farmers.

SAVING SEED CORN.

A correspondent of the *Prairie Farmer* states that there had never been such a failure of seed corn in coming up as in the present season. His observations and those of his neighbors had shown that corn that had been selected and hung away from all heat had its vitality destroyed by freezing. Corn husked and thrown on the floor, and covered with snow had (seven-eighths of it) grown. Corn left in the shock in the field had produced. Corn put in the crib had failed. He concluded from these observations and his experience that all seed corn, if husked, should be kept from freezing during the winter; that, if husked, it should never be allowed to lie on the ground over night; and that corn that is to be hung up in a cold room for seed should never be husked until the planting time arrives.

In this vicinity also there have been many complaints from the failure of seed corn.—Several persons had to procure another supply of seed to sow the ground a second time. The conclusion arrived at was that the vitality had been destroyed by the freezing during the unusually cold winter. We planted corn, an apparently good sample, that had been shelled, and it turned out a complete failure. We again sowed the ground with corn, saved in the ear, of the previous year, and have a good crop.

LIVE FENCE POSTS.

Seeing several letters in your paper on the subject of live fence posts, I will write a few lines and you may print them or not, as you choose.

Live trees can be used for fence posts, if they are set the right distance apart (12, 14 or 16 feet), then take boards and make your fence in panels, which you can make rainy days or in the winter when you have the leisure. You can make the panels by sawing fence boards the length you wish the fence high, then lay the boards apart the distance you wish them in the fence, then nail the strips (you have sawed the right length) to the boards, one strip to each end of the board, and one in the middle, and if sixteen feet boards are used two strips would be better, for the boards would not be so liable to break as they would if the strips were eight feet apart; the top end of the strips to come even with the top of the upper board. If cut nails are used to make the panels they should be heated red hot before they are used, so they will clinch without breaking.—After one panel is made it can be used as a pattern by laying the next board over the boards in the first panel. The panels can be set up and wire put around the trees and around the strips at the end of the panels; the wire will hold the panels up in their places, and the wind waving the trees or the trees growing will have no nails to break, and as the trees grow the wires can be loosened.—*Com. Michigan Farmer*.

CUTTING RYE FOR HAY.

Rye is almost as important a crop in New Jersey as wheat is in Minnesota, and, as a matter of course, I have to sow a few acres every year or be ruled out of fellowship among New Jersey farmers. Hay appears to be always scarce in my neighborhood, and, whenever I have to buy the price goes up to about twenty-five cents per hundred above New York City market rates. I concluded to see what kind of hay green rye would make. This morning, when I proposed to cut the rye, which was just merely showing its flowers, John was ready to strike; for such a piece of folly had never before been heard of in this neighborhood. The rye, however, is cut, and if the weather continues fine it will be hauled into the barn to-morrow. I do not think that rye hay will equal good timothy in quality, but it is certainly superior to more than half of the stuff called hay sold in city and country village markets. Another advantage which I expect to gain by cutting before ripe is a better growth of grass from the seed sown among the rye last fall. If the weather should continue dry for the next two weeks, or until rye is ripe, the young grass growing among it must suffer much less.

CAUTION TO FARMERS.

We have been informed that parties are travelling through the townships, trying to impose upon the credulity of the farmers.—Their mode of operation is this:—

They say that there has been a great failure in Manchester, England, and creditors having taken possession of the stock of goods desire to dispose of them with the least possible delay, so that the estate may be wound up. Having thus given a plausible excuse for the urgent desire to sell, and the pretended low price of the goods, they produce a grain bag with the Lewiston mark upon it, with a few samples of Brussels carpets, beautiful flannels and cottons, putting prices upon them far below their real value, and make bargains for certain quantities to be delivered at a future time; they then produce their finely finished shoddy, and having previously worked upon the cupidity of their customer, soon make a bargain for a quantity of their trash, at a price that would be high even for good material. Having accomplished their end they pass on to their next dupe, no more to be seen in that neighborhood.

If farmers will deal with unknown and irresponsible parties they must expect to be taken in; they are to blame for encouraging these parties. If they will look through our columns they will find the advertisements of respectable merchants, whose interest it is to offer good articles for sale at prices that will just pay them for the handling and no more, as they are all anxious to establish a permanent business. So long as there is competition no one need fear of paying much more for an article than it is really worth, if they deal with a respectable house.

Let the farmer and his family refuse to deal with any unknown person, no matter how cheaply he offers his goods, for if they are below their value, he must have come by them dishonestly, and if they are of poor quality they are dear at any price.

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Entomology.

The Hessian Fly.

We were not quite sure that our spring wheat had been injured by the Hessian Fly until we took some of it to our respected friends the Entomologists, Messrs. Reed and Saunders, of this city. After careful examination they pronounced the injury to be caused by this fly. We are much astonished at its reappearance amongst us so extensively, without having noticed it last season. As far as we have travelled or heard from in Canada, the spring wheat is much damaged this year by this pest. It is also injuring the fall wheat, but what effect it will have on next year's crop we are as yet unable to say. We wish to draw forth information regarding it, and therefore offer a prize.—The following is taken from "Harris' Insects Injurious to Vegetation."

The scientific name of the Hessian fly is *Cecidomyia destructor*. It received its common name from a supposition that it was brought to this country in some straw by the Hessian troops under the command of Sir William Howe, in the war of the Revolution. It was first observed in the year 1776, in the neighborhood of Sir William Howe's debarkation on Staten Island, and at Flatbush, on the west end of Long Island.

Description of the Fly.

The head, antennae and thorax are black. The hind body is tawny, more or less widely marked with black on each ring, and clothed with fine grayish hairs. The egg-tube of the female is rose-colored. The wings are blackish, except at the base, where they are tawny, and very narrow; they are fringed with short hairs, and are rounded at the tip. The legs are pale red or brownish, and the feet are black. The body measures about one-tenth of an inch in length, and the wings expand about one-quarter of an inch or more. After death the hind body contracts and becomes almost entirely black.

Laying their Eggs.

Soon after the wheat comes up in autumn, the female fly lays her eggs in the small creases of the young leaves. Twenty or thirty very minute eggs, of a pale red color, are laid upon a single leaf. Again in the spring, the latter part of April, or early in May, the eggs laid in autumn, having passed through their regular transformations, produce a second brood of flies, prepared to lay a second lot of eggs upon the more advanced wheat.

The Work of the Maggots.

If the weather be warm, in four or five days after the eggs are laid in autumn, they are hatched into small maggots of a pale red color, which crawl down the leaf, working their way between it and the main stock, passing downward till they come to a joint just below the surface of the ground, with the head towards the root of the plant.—Here they remain, neither eating nor penetrating the stalk, till transformed into flies in the spring. They suck the sap from the stalk which they surround, causing it to wither and die. The second crop of maggots, in June, do not entirely destroy the plant, but cause it to crinkle down before the grain is full grown.

In the Pupa State.

They usually come to their full size in five or six weeks, and then measure about three-twentieths of an inch in length. The skin now gradually hardens, becomes brownish, and soon changes to a bright chestnut color, resembling a flax seed. This hard skin or shell serves as a protection to the grub within, during the rigors of winter. After a while the insect cleaves from its shell, and remains within entirely detached. The pupa thus detached, surrounds itself with a pupa skin which adheres to it until it emerges from the outer shell or puparium in the spring, soon after which it disengages itself from the skin, and appears a perfect fly, prepared to lay another brood of eggs. A large proportion of the maggots of the second brood remain in the stubble of the field, in the flax seed state after the grain has been removed, and passing through their transformations more rapidly than in winter, are ready early in October to attack the new crop. Some Entomologists are confident that the fly also lays eggs in the grains of

wheat, and that they hatch soon after the germination of the seed, crawl upwards, and then fix themselves around the stalk. If so, they have more than one way of propagating themselves, and become consequently still more difficult to overcome.

Preventives.

Probably the best preventive now known is the one already mentioned, viz: sowing so late in autumn that the weather will be too cold for the fly to deposit her eggs after the wheat shall have become far enough advanced to admit of it. It has been pretty well established by experience that this will greatly reduce their numbers, and limit their ravages. Another preventive is to suspend the sowing of wheat for a number of years.—*Rural Home.*

We copy the following notes on this pest from "H. Y. Hind's Prize Essay on Insects and Diseases Injurious to Wheat Crops," a copy of which has been kindly sent us by Mr. A. Julyan.

Methods for Arresting the Progress of the Hessian Fly.

1. *A Fertile Soil.*—We regard this as a primary and indispensable measure and one which must accompany others in order to their full success.

2. *Late Sowing.*—We regard it as one of the most efficient, as it certainly is the most facile of any that can be resorted to. It is universally admitted that it is the earliest sowed fields which are always the most infested. Objections—winter killing, rust and wheat midge. Remedies to these—draining, protecting with litter or cow dung. Time of sowing—about the last week in September, seed being properly prepared for reasons given elsewhere. Depth of sowing—2-2½ inches. Depth of plowing—6 to 8 inches or more. In parts of Ohio late sowing is found to be a very excellent artifice, the varieties sown being the "Soule and white-blue stem;" these have nearly driven the Illinois, Mediterranean, Redchaff, Bald, &c., out of cultivation.

3. *Grazing.*—This measure is alluded to as worthy of attention; we cannot, therefore, but regard this as a most judicious and important measure if seasonably resorted to.

4. *The Roller.*—No doubt this measure is a judicious one. It shakes off the eggs and crushes the young worms; the condition of the ground must be particularly attended to before this remedial measure is employed.

5. *Mowing.*—A valuable proposal for exterminating the second or spring brood from a wheat field.

6. *Fly-Proof Wheats*—or such as have a strong, stiff stem.

7. *Steps for the Seed.*—Much lies within the compass of human instrumentality to accelerate the growth of vegetation by means of this kind. It is probable that a great advantage in many respects will be found to flow from a judicious adoption of this artifice. Not only is growth accelerated, but the steep may be made to possess great fertilizing qualities; and steeps are constantly employed as a preventive to smut.

Mr. Pell, of Penam, N. Y., prepared his seed wheat by soaking in brine, scalding with hot water containing common salt, mixing with pearl ashes, and when distributed nicely over a barn floor by sifting a composition containing charcoal dust, guano, sulphate of ammonia, and various other mineral ingredients over it. It was sown at the rate of two and a half bushels to the acre; at the expiration of fifteen days the wheat was so far above ground as to be pronounced by a neighbor far in advance of his which had been sown in the usual way on the first of September, nearly four days earlier. The crop weighed 65 lbs. per bushel, and was eminently rich in gluten, containing 18 per cent. The yield per acre was about 70 bushels.

In steeping or pickling wheat in strong chamber ley, a practice both common and beneficial, the use of lime for drying should by all means be avoided. Gypsum should be employed instead; but of all substances, finely powdered charcoal, as a most efficacious absorbent of the ammonia of the urine, is to be recommended.

8. *Oats as a Decoy.*—The oats being ploughed in after the deposition of the egg—if the fly will deposit its eggs upon oats.—This remedy is equivalent to late sowing.

9. *Wheat as a Decoy.*—If two or three acres across the middle of a large field be

sowed with wheat about the middle of August, all the flies in the vicinity will be attracted to this point, and there retained, so that it will be safe in ordinary seasons to sow the remainder about the middle of September. Plough the early sowed wheat under, and bury the unhatched eggs and maggots. In years when clouds of Hessian flies migrate, it is evident that this remedy would be of little avail, if the season were at all late. The measure should receive a fair trial from some intelligent wheat grower, in a district suffering under this pest.

10. *Sprinkling Salt, Ashes or Caustic Lime over the Plants.*—This top dressing serves as a manure and nothing more. It will strengthen the plant and accelerate the period of its maturity.

11. *Burning and Ploughing up the Wheat Stubble.*—Dr. Fitch says:—

"We commenced our account of this remedy, impressed with the belief that it was the best that had ever been proposed; we close it, persuaded that it is the very worst."

By burning the stubble you burn the parasites of the fly, which, as has been shown, destroy nine-tenths of each generation.

We cannot give assent to the very sweeping denunciation of this remedial measure contained in the foregoing sentence. It is quite clear that before the parasites accumulate so as to overcome the Hessian fly, the artifice is worthy of adoption. With the exception of certain seasons, the ravages of the fly are local, and may therefore be arrested by this artifice. It has received so many favorable notices from different quarters that it is certainly worthy of trial.

In 1851, Mr. John Delafield, in a general view and agricultural survey of the County of Seneca, N. Y., taken under the direction of the New York State Agricultural Society, tells us that the Hessian fly has ceased to be a formidable enemy there, probably for two reasons:—

"First, the period of sowing the seed grain has been retarded until a period too late to offer a nidus to the fly; and second, the soil is better prepared by due fertility, to give the plant vigour to resist the influence of the larva."

The remedial measures which have been enumerated either imply the presence of the Hessian fly in destructive abundance, or contemplate invasions from neighboring districts. They may be thus briefly summed up for winter wheat:—

1st. Have your soil in good heart and order.

2nd. Drain as much as is consistent with true economy in Canada, and plough deep.

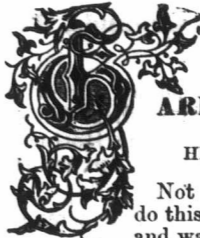
3rd. Sow late an approved flinty stemmed variety, and an early ripener.

4th. Prepare the seed for rapid germination and growth by steeping, and afterwards drying in some special manure.

The recommendation "Sow Late," to avoid the Hessian fly, appears to be diametrically opposed to the advice given to avoid the ravages of the wheat midge, and that dreadful scourge rust. It is to meet the case of a simultaneous presence or appearance of both Hessian fly and wheat midge, that late sowing, with a forcing preparation of the seed, is recommended and practised. If acting with special reference to an individual insect, one would sow late to avoid the Hessian fly, or early to avoid the wheat midge; but it is very manifest that under ordinary methods of culture, if both insects prevail (and they may now always be expected) during the same year, or if they succeed one another, the crops must suffer from the attacks of one of them. Therefore it is better to be ready for both contingencies, sowing late on well prepared land to avoid the Hessian fly, and anticipating the arrival of the midge by stimulating your crops to attain, before winter sets in, the same development of parts which they would have acquired by being a fortnight longer in the soil, taking care at the same time to select a good variety of seed, flinty stemmed, and an early ripener, and one which is not acclimated.

With respect to spring wheat, it has been urged that the election of varieties which can be sown so late as to escape the May attack of the Hessian fly, the June and July attack of the midge and rust will cover all contingencies. Can this be accomplished? Have we such a variety of wheat as will satisfy these conditions?

A meadow irrigated by running water is said to be double the value of one irrigated by flooding; a flooded one double the value of a rich loam not irrigated.



ARDEN AND FARM.

HINTS FOR AUGUST.

Not much of importance to do this month, but busy hands and watchful eyes in the garden will always find plenty. Those having flowering annuals and biennials will find some ripening their seeds this month, and any particular fine flower you'd wish to save can easily be done by picking off the head or pod, as the case may be, into paper bags and stowing away in a dry place. Thus it is how a great many of the novelties are discovered and sold at such fancy prices, and how the varieties are always improved. Petunias, asters, zinnias and lots of others are now ripening their seeds.

Dahlia growers will be particular to thin out the growth of the plants and pinch off old flower buds. An occasional watering of liquid manure and good mulching will greatly improve the size of the blooms and color. Biennials, such as Sweet Williams, Chinese Pinks, &c., should have the old flower stalks cut off, seed saved, and an inch or two of soil put in the centre of the plants, so that the side shoots may grow and flower next year. Keep stirring the soil and kill the weeds—flowers and weeds don't harmonize.

In the vegetable line the onions will want pulling and drying. Save the seed, if any, and pick out some of the largest bulbs to plant next year for seed. Assort your onions for market—use the small ones in the family. Earth up your celery, clean out old lettuce and radish beds, and sow crops for fall use.

Now is the time to propagate any choice fruit by small working on small stocks. If you don't know how to breed get P. Barry's Fruit Gardener or Purdy's Fruit Instructor. Save your raspberries by simply bending this year's growth and bury the tip an inch or two in the ground; fine plants may be lifted in October or later.

Sucker fruit trees—examine orchard for insects laying eggs. Now is a good time to prune anything less than an inch. Trees being full of foliage, inexperienced horticulturists can easily see where they require thinning. An hour spent now is worth a day in the spring. J. McP. R.

CO-OPERATION AMONG FARMERS.

In a late number of the report from the Agricultural Bureau, the following truisms are presented:—

The word "combination" seems to have acquired a wicked significance in view of some farmers. Let them use instead "co-operation" if they prefer it; but they must remember that there is no human being entirely independent of all others. Without association there would be neither churches nor schools, government nor social institutions. In other industries a large portion of the work done and profits made are through associated effort. There may be association for duty as well as for deviltry. There is no reason why comparative isolation should lead to positive hermitage. A great enlargement of American dairying has come from association; the monthly gatherings for sales of farm animals have saved immense sums from the clutches of middle men; the inauguration of market fairs should be general; association for importing or buying animals of the best blood should be more numerous; there should be a farmer's library in every township in the land.

ELEMENTS OF A HOME.

I never saw a garment too fine for man or maid; there was never a chair too good for a cobbler, or cooper, or king to sit in; never a house too fine to shelter the human head.—These elements about us, the gorgeous sky, the imperial sun, are not too good for the human race. Elegance fits man. But do we not value these tools of housekeeping a little more than they are worth, and sometimes mortgage a home for the mahogany we would bring into it?—*Theo. Parker.*

It needs no argument to show that the man who desires to cultivate the land intelligently needs all the aid which science can give, and indeed science stops far short of his needs; he cannot succeed unless his plans harmonize with the laws of light, heat, growth and moisture, although he may be ignorant that such laws exist.

The Horticultural Grounds, Toronto.

The illustration below shows a view of the nursery and the rustic pavilion. These grounds are the property of the Horticultural Society. The city gives an annual grant to the Society.

The grounds consist of five acres of land, which is principally in sod, kept well cut. Numerous and various kinds of trees are growing on the grounds, and many neat beds of flowers intersperse the scenery. Walks are laid out and the public is admitted free from 7 a. m. to 6 p. m., except when the grounds are used for exhibitions or promenade concerts; then a charge is made according to the entertainment.

We paid a visit to these grounds on the 13th of July. The Toronto Electoral Division Society Exhibition of fruit, flowers and vegetables was held on that day.—We were so much pleased with the grounds and exhibition in the afternoon that we returned in the evening. The grounds were then illuminated with numerous lamps, the band was playing, the citizens, old and young, lads and lasses, all appeared to enjoy the treat.

The exhibition was pronounced the best ever held in Toronto. The flowers and hot house plants were very fine. There were contributions from the green-houses of the Hon. D. L. McPherson, C. S. Czowski, Esq., Lt.-Governor Howland, Ex-Alderman Hallam, Messrs. Fleming, Leslie, Grey, Hon. W. H. Bolton, and others. Prizes were awarded in the various classes.

One thing struck us as most remarkable—the dry weather had caused the grass to turn quite brown in many places, but the flowers in every bed were all in full bloom.

We were much pleased with the flowers on the grounds; we consider them the best kept lot we have seen or desired to see. The gardener was introduced to us; his name is Lightfoot. We enquired of him about his position and his flowers; we found that he had great difficulty in procuring the necessary manure, and even a load of sand he had engaged to pay for himself because Fleming had refused to pay it when the bill was sent at first, but finally it was paid for. We thought it hard that a poor emigrant with a family of seven children to support, and with only a small salary, should strive so hard to please the public or even to offer part of his salary for sand that Fleming objected to pay for.

We have seen and heard so much of Fleming's smallness that we think the quicker his services are dispensed with from the public agricultural affairs, the better. Why he should be favored with advantages at the agricultural building at Toronto is more than we can conceive.

The gardener we think deserving of advancement, and he will have it in time. We selected the spot and took an artist to sketch the grounds, as shown above.

THE BEST TIME TO HOE.—In Secretary Flint's Massachusetts Report it is stated by a cultivator that the portion of the garden which is hoed or cultivated with the dew upon the ground produces better crops than the part that is hoed in the heat of the day. Will some of our own cultivators make the experiment with different parts of their garden and send us the results for publication?

In reply to an enquiry about saving fruit trees after having been gnawed by mice, &c., I will give my experience:—My father had a young orchard of 100 trees, nearly all of which were girdled by mice and rabbits one winter. As soon as the ground was thawed sufficiently, we banked them up with earth and nearly all lived and did well, a nice healthy bark forming over the wound.—W. H., in *Iowa Homestead*.

Garden, Orchard & Forest.

THE SCARLET RUNNER.

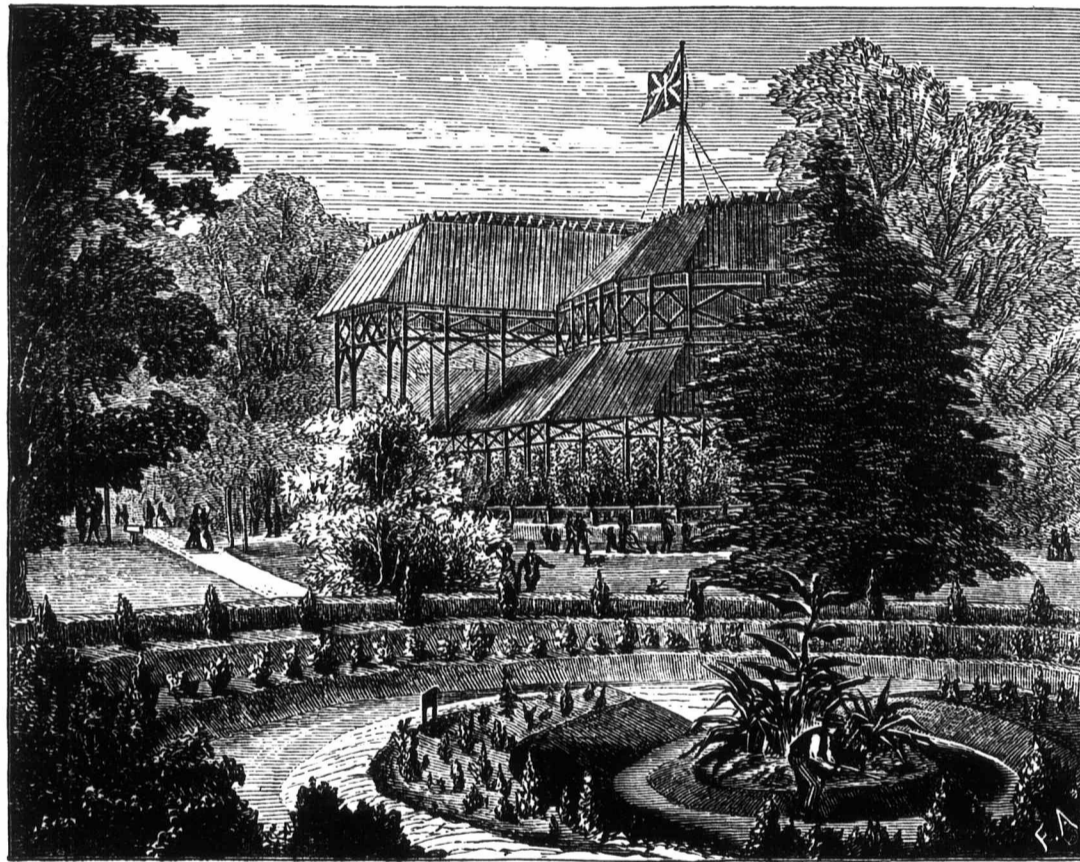
It has always been a matter of surprise that the Scarlet Runner has never obtained a foothold among the cultivators of garden vegetables. In almost all portions of Europe it is one of the most esteemed, and we think there is scarcely a garden where any fair collection is grown, that this one is not found among them. They are used as much as our dwarf beans—broken or cut to pieces, and eaten in the green podded state. On rich ground they have very thick succulent pods, much more so than any dwarf bean, and the flavor is very different from them. The plant, in fact, belongs to another species, although until the last century it was generally believed to be a form of the East Indian or dwarf bean. This is from the warmer parts of South America.

The flowers are of great beauty, rivaling the color of the brightest scarlet Zonale Geranium, and give more variety to a vegetable garden than any plant known. It is a great fashion in some parts of England to make them border the garden walks. Very light poles are employed—not thicker than broom handles, and two are attached together somewhat like the letter X, only that the point of crossing is near the apex. Another pair is made and one set at the upper line of the walk and one at the lower. Then a horizontal series is fixed from the points where the pieces cross, and the whole when finished, very much like a common "saw back" or "wood horse." The frame is then

who make the English spring-time so rich in melody. But the great bulk of the tree growths of England is found amid the hedge rows which separate the fields. The hedge of hawthorn or buckthorn seems to be the almost universal fence of the English farmer. By the side of a hedge is nearly always a ditch, the hedge standing on the ridge made by the earth thrown out of the ditch. This adds to both the absolute and the relative height of the hedge; and the ditch, moreover, serves the purpose of drainage, some-times at least. Scattered irregularly along the hedges, and sometimes on both sides of the ditch stand the forest trees. And as the fields are generally small and the hedges frequent, the trees are numerous, and, as one looks carelessly across the country, the trees seem to amount often to a forest.

The older trees seem to be chiefly oak; but among the newer growths, and especially in the forests, I noticed a large ponderance of the European larch and the Norway spruce, with a fair sprinkling of the Scotch pine. I saw several forests of considerable extent, made up of the larch and spruce mixed in nearly equal proportions.—*Cor. Prairie Farmer*.

The sulphate of ammonia is an excellent manurial liquid to apply to verbenas or any other flower, giving to the foliage a dark green, luxuriant and healthy appearance. It is economical, clean and easily applied. Prepare it in the evening before using, by dissolving one ounce of ammonia in two gallons of water. It may be applied once a week with safety.—*Southern Farmer*.



THE HORTICULTURAL GROUNDS, TORONTO.

filled by numerous poles, set about one foot apart, and all in the X manner. This is immensely strong, takes little time, allows of the use of lighter material than our lima bean does, and when in bloom gives a solid sheet of scarlet flowers, which any one who once sees will never forget.

We cannot tell why it has been so much neglected with us. It does not come into use quite so early as the dwarf bean, but we think would be in before the lima. It is likely many would prefer the lima in an absolute choice between one and the other, but we all like variety and do not want to live on one thing, no matter how good it may be.—*Gardener's Monthly*.

PLANTING AND PRESERVING TREES.

In England, the traveller, as he is rushed along the railroads, is at first inclined to believe that the country is well wooded. Trees in abundance meet his eyes in all directions. But a little attention shows him that there are but few forests or even groves. Here and there, on the great estates, a hunting park of forest has been preserved or raised, and sometimes the mountain sides, as I noticed among the Cheviot hills, are being covered with quite extensive forest growths.

Besides these, one notices frequently small groves, or thickets rather, as they are purposely left full of underbrush, planted as game preserves, or coverts. These coverts occupying some corner inconvenient or useless for ordinary tillage, are the haunts of thousands of birds

WHAT SHALL BE DONE WITH OLD STRAWBERRY BEDS?

The strawberry season will soon be over, and the question, "What shall be done with the old beds?" will be in order. We are aware that conflicting answers will be given to the question by men of good judgment and long experience.

In the first place, we had better state what we mean by old strawberry beds. We mean those that have borne one or more full crops.—A bed set out the past spring we would call a new bed, and one set out last autumn we would place in the same class, but those planted a year ago last spring, or earlier, we would call old beds.

Many intelligent and successful growers of strawberries for market, raise but one crop from a plantation, and then plow it under.—There is no doubt that where strawberries are transplanted in April or May the crop that they will yield in between thirteen and fourteen months will be their best one, whether we regard size or quantity. If the bed is allowed to remain longer, the labor of cleaning it will be considerable, and then it will bear a lighter crop of smaller berries the next year, and continue to diminish every succeeding year.

On the other hand, if we set out a new plantation every year, and plow under the one that has borne one crop, we are obliged to cultivate the land about fifteen months before realizing any return for the capital invested in plants,

soil and labor. Some, we are aware, raise a crop the first year between the rows of strawberries, but that necessitates cultivating by hand entirely, and can only be defended where land is very dear, and then the soil should be made very rich so that the strawberry plants shall not be deprived of the necessary nutrition.

After the crop of berries has been gathered, another crop of several kinds of vegetables, as cabbage, cucumbers for pickles, celery, turnips or sowed corn can be grown upon the ground, or plants for the next spring's plantation, or for market can be grown. It is not necessary that the ground for two years should be entirely devoted to one crop of fruit.

But then it is sometimes impossible to find new ground every year for strawberries, and, in consequence, necessity may compel us to make the most possible out of the old plantation. In that case, a very good way is to go over the bed with a scythe, mowing down grass, weeds, and vines. Then rake it off and you have a good starting point to begin cultivation. With a small corn plow turn a furrow from the rows each way, making a ridge between them. It will do no harm to run the plow pretty close to the row of plants, even cutting off many of the side roots. The old roots are of but little service after the berries are ripe. With the new growth of leaves new roots will start out near the crown, and then, if they find a fresh mellow soil to work in, they will show their appreciation of it by their luxuriant growth.

This process will leave but a narrow strip to hoe and weed, and then the bed will be pretty thoroughly renovated. Of course it is not absolutely essential that the vines should be mowed, and should the weather be very dry, perhaps it would be advisable to let them remain to shade the roots, but should the weather be tolerably moist, we are confident from our own observations, that mowing will increase the new growth.

After the rows of vines have been cleaned out, the ridge left between the rows should be leveled down with a cultivator, and should the weeds be pretty thick, they should be raked out upon the surface with the pruned hoe, and left exposed to the sun.

A top-dressing of fine barn-yard manure would undoubtedly be beneficial, and a dusting of plaster on many kinds of soil would be good. If any of the commercial fertilizers could be obtained tolerably pure, at reasonable rates, it would probably be a good investment to apply a light dressing. By means of these fertilizers a good growth of vine could be obtained for the protection of the roots in winter.

UTILIZING WASTE MATERIAL.

In the address delivered before the new Germantown Horticultural Society, and which you have honored by republishing, I took occasion to remark that there were still unappreciated wants of the human family, and I pointed to the absence in America of purchasable mushrooms, so much employed abroad. It interests me to know that an intelligent gardener has already adopted the idea, and has a mushroomery in successful commencement.

Are there not other things that are also neglected, and which ingenious minds and hands could turn to a very profitable account?—This idea is enforced by a paragraph from a late St. Louis paper, describing a new industry now in operation there.

Some time since a party of citizens conceived the plan of turning to profit the gas water running to waste from the gas works. It contains a large percentage of ammonia. They separated the ammonia held in solution and resaped a great profit. The sulphate of ammonia produced was of a superior quality, and the demand exceeded the capacity of the works, while there grew up at once a demand from distant points, including places east of the Alleghenies, New Orleans, and Charleston, S. C., &c.

This was utilizing waste. Let us see if we can give a profitable outlook for some other person, be he gardener or housewarmer. As I pass a certain large woolen factory, I am often surprised that somebody does not take possession of the waste steam which is continually discharged on the level of the ground, and which creates a cloud sufficiently large to frighten unaccustomed horses as they pass it.—Now, why should not this warmth be conducted to and through the neighboring tenant houses; or could not you tell some one how to convert it into grapes by erecting over it a grape house. Again, could not unlimited amounts of saleable flowers and fruits be produced in the unused garrets of great factories by utilizing the waste steam always discharging?—*J. J. S., in Gardener's Monthly*.

EVERY

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EVERGREENS AMONG PEAR TREES.

Hon. E. H. Hyde, Vice-President of the Connecticut State Board of Agriculture, planted a number of small evergreens in a circular form around some pear trees, simply for ornament, intending to keep them down in the front of a hedge, and to allow the pear trees "for effect," to appear above them. The plan was neglected after a while—as many such plants are—and the evergreens soon outstripped the dwarfs, and towered up above and nearly encircled them. It came to be noticed after a while that while the pear trees away from the evergreens were irregular bearers of rather inferior fruit, those within the circle were almost invariably prolific, and the fruit was of superior quality. There was no other apparent cause for this result than the influence of the evergreens, hence the inference in favor of protection would seem to be a just one.

A California paper says:—Some of the cherry trees of Mr. Bidwell's orchard, in Butte Co., yielded \$200 to the tree this season, the fruit selling as high as sixty cents per pound in San Francisco.

COLD AND THE CURCULIO.

In relation to this subject we find the following in the *Galaxy* for June:—

A writer in the *Gardener's Monthly* states that after severe winters, during which the ground was unprotected by snow and therefore frozen deeply, he has observed that the plum crop of the succeeding season was unusually good, the fruit being fair and abundant. He accounts for this by the theory that the pupae of the curculio are frozen in the ground below the possibility of re-suscitation, and that the trees, which usually blossom full and set well, are thus freed from the attack of this most destructive insect. In accordance with this explanation he recommends that on the approach of cold weather the ground under and about the fruit trees be cleared from snow, so that the frost will penetrate deeply into the soil. As the trees do not appear to suffer when the ground about their roots is naturally exposed, it is believed that no harm will follow this practice.

The editor of the *Gardener's Monthly* appends a few remarks to the effect that before this view can be accepted, two questions remain to be settled:—First, does the curculio hibernates in the ground, and in what state or condition? And second, will cold destroy hibernating insects in any of their forms?

Let any one who has a piece of land overrun by Canada thistles treat in the following manner and he will be surprised at the result: Plow as late in June as possible, and give time for the maturity of a crop of barley. The thistle will have attained quite a growth, and by plowing and harrowing thoroughly, the roots will be pretty well torn out. Sow the barley and harrow in well. The warm sun will bring up the barley at once, and before the thistles recover from their rude treatment, the grain will quite shade the ground, and nothing will be seen of the thistles but a few sickly looking specimens. A good crop can be grown on such ground, where little would grow if early sown.

Billington's Improved Grain Drills.

We now take pleasure in introducing to the notice of our readers Mr. J. P. Billington, of Dundas, and his hobby, the grain drill. We believe in specialities. When a person devotes his time and attention to one business, or one implement, or one idea, he is apt to surpass in that particular line others that are divided in their pursuits.

We presume we have to place Mr. Billington at the head of the list as regards seed drills. He was the first introducer and first manufacturer of seed drills in Canada. He has watched and adopted every improvement, and furnishes drills unsurpassed by any maker. Some may have advertised more extensively in places, or put out more talking agents, but the following fact should show to the people of Canada the high estimation his drills are held in. We look on the farmers of Oxford as being unsurpassed by any class of farmers in any county in Canada. They read, practice, have the best agricultural meetings in their county, and are as wealthy as the farmers in any other county, and vastly superior in practice to the farmers in a large majority of the counties, if not at the very top in this respect; they stand second to none.

In this favored county alone Mr. Billington has, during the past three years, sold three hundred of his seed drills. We presume this number is more than is owned in four or five other counties where they have had ten or fifteen years to introduce them.—Other drills besides Billington's have been tried in Oxford, but his stands A 1 there.

His prices are as low as those of any other manufacturer. You can send your orders to him, or those wishing to be supplied by us may do so, as we do not intend selling any other grain drill until we are convinced that a manufacturer has a superior article.

We have always found Mr. Billington a strictly honorable and reliable person as far as our transactions have been with him. We cannot say as much for all manufacturers with whom we have transacted business.

We quote below his own remarks concerning his drills:—

"From the unprecedented sale of grain drills last fall and spring, the subscriber has been induced to manufacture a very large number for the coming seeding. Some alterations have been made in his drills, such as past experience has suggested to be necessary and useful, and he is thoroughly convinced that the drills which he now offers to the farmers are sure to give every satisfaction, nothing having been left undone to make them the most perfect machines yet offered for sale; and having had an experience of twenty years in the construction of many different kinds of grain drills, he feels competent to discriminate between them and judge of the merits and demerits of the very many different kinds now for sale.

ject of constructing practically any particular part of the machine, and to overcome objections that might be made on that score in selling.

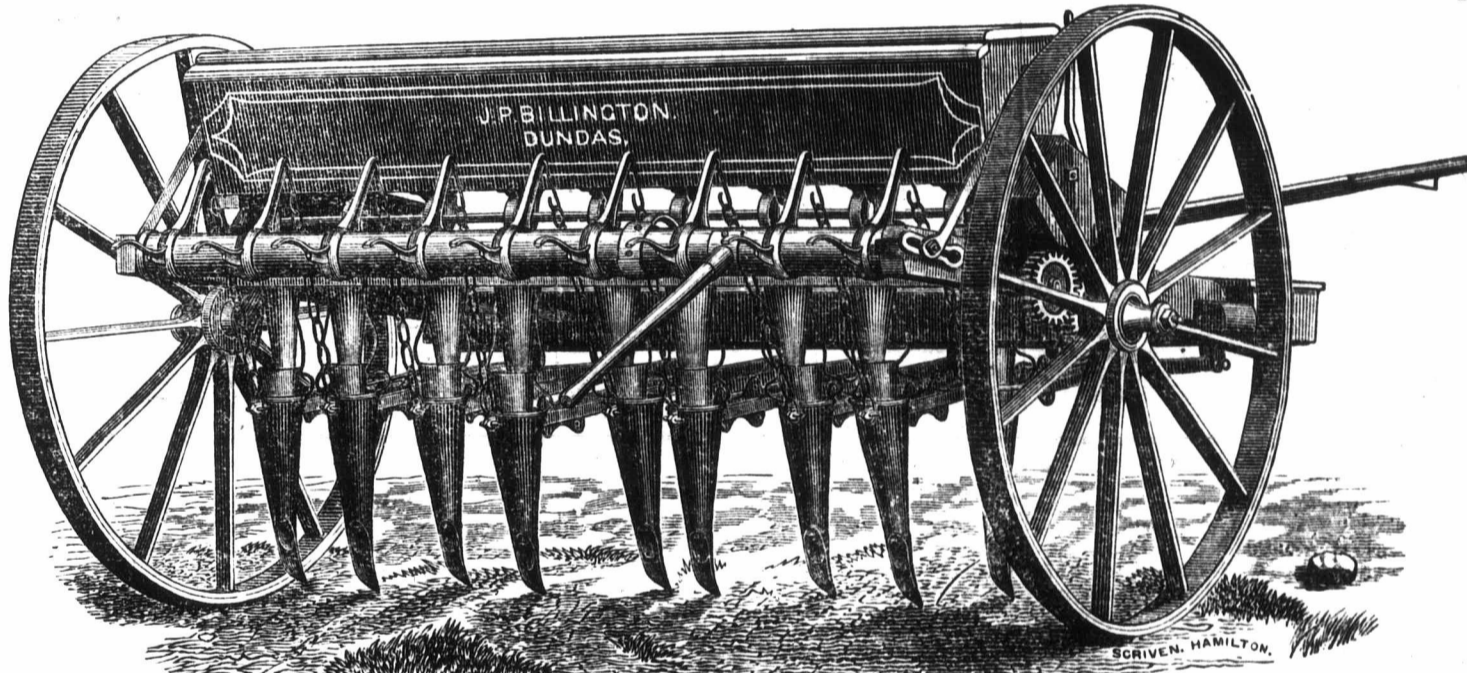
"In this age of progress in farming, it seems of little use to speak of the advantages of sowing seed with a drill over broadcast sowing, but I will say that on an ordinary sized farm, the saving of seed alone fully covers the investment. We will suppose a farmer sows twenty acres of fall wheat, and uses two bushels of seed per acre. In using the drill he would save three pecks per acre, making 15 bushels of wheat, worth \$1 per bushel—\$15. Say he puts in 20 acres of spring grain, he saves one-half bushel seed per acre, making 10 bushels, worth 50 cents per bushel—\$5; which added makes \$20 in the season. This certainly covers the investment. Most farmers say who use drills that the increase of crop over broadcast sowing is on an average from three to five bushels to the acre.

"The subscriber believes that he is fully warranted in every statement made in the foregoing, and is so perfectly satisfied of the perfectness of the drills which he is now offering, that he has no hesitation in warranting them in every particular in sowing grain, and to be made of the best material and workmanship, and hopes to secure your patronage.

"All of which is most respectfully submitted."
J. P. BILLINGTON.

Dundas, 1873.

The list of testimonials are most satisfactory, and of such a length and so flattering from all parts of Canada, that we cannot spare space in this paper to publish them, but quote the following as samples of them:



BILLINGTON'S IMPROVED GRAIN DRILL.

North Oxford, Jan. 23rd, 1872.

This is to certify that I bought one of Billington's Empire drills in the year 1871. It works to my entire satisfaction, and from past experience I am satisfied that it is the most useful and profitable implement that a farmer can be in possession of.
JONATHAN JARVIS, Reeve.

Blandford, Jan. 24th, 1872.

This is to certify that I bought an Empire drill in the year 1870, and am satisfied that there is at least a saving of one-half bushel per acre in seed, and decidedly a better yield. It is also one of the most useful and profitable implements that a farmer can use on his farm.
M. OVERHOLT, Reeve.

West Oxford, Jan. 16th, 1872.

This is to certify that I bought one of J. P. Billington's grain drills in the spring of 1871.—I feel satisfied that there is a saving of fully half a bushel of seed per acre taking all kinds of grain together. I am satisfied that my drill has paid me in seed and yield from \$75 to \$100 in one year.
RALPH FEATHERSON.

WASH FOR SHINGLES.

A wash composed of lime, salt, and fine sand, or wood ashes, put on in the ordinary way of whitewash, is said to render shingles fifty-fold more safe against taking fire from falling cinders or otherwise, in case of fire in the vicinity. It pays the expense of itself a hundred-fold in its preserving influence against the effect of the weather. The older and more weather beaten the shingles, the more benefit derived. Such shingles are generally more or less warped, rough and cracked.

Recipes.

EXCELLENT WHITWASH.

The following is said to be the very best of the numerous recipes for whitewashing:—White chalk is the best substitute for lime as a wash. A very fine and brilliant whitewash preparation of chalk is called the "Paris White." This we buy at the paint store for three cents a pound, retail. For each sixteen pounds of Paris White we procure half a pound of the white transparent glue, costing twenty-five cents (fifty cents a pound). The sixteen pounds of Paris White is about as much as a person will use in a day. It is prepared as follows:—The glue is covered with cold water at night, and in the morning is carefully heated, without scorching, until dissolved. The Paris White is stirred in with hot water to give it the proper milky consistency for applying to walls, and the dissolved glue is then added and thoroughly mixed. It is then applied with a brush like the common lime whitewash. Except on very dark and smoky walls, a single coat is sufficient. It is nearly equal in brilliancy to "zinc white," a far more expensive article.

TO CLEAN PAINT.

There is a most simple method of cleaning any kind of paint that has become dirty, and if our house-wives would adopt it, it would save them a great deal of trouble:

Provide a plate with some of the best whiting to be had, and have ready some clean, warm water and a piece of flannel; squeeze nearly dry; then take as much whiting as will adhere

to it, apply it to the painted surface, when a little rubbing will instantly remove any dirt or grease. After this, wash the part with clean water, rubbing it dry with soft cloths. Paint thus cleaned looks as well as when first laid on, without any injury to the most delicate color. It is far better than soap, and does not require more than half the time and labor.

Or save the tea leaves for a few days, then steep them in a tin pan for half an hour, strain through a sieve, and use the tea to wash all varnished paint. It requires very little rubbing or "elbow polish," as the tea acts as a strong detergent, clearing the paint from its impurities, and making the varnish shine equal to new. It cleanses window-sashes and oil-cloths; indeed any varnished surface is improved by its application. It washes window-panes and mirrors much better than soap and water, and is excellent for cleansing black walnut and picture frames. It will not do to wash unvarnished paint with it.

BONE FELON.

Of all painful things can there be any so excruciatingly painful as bone felon? We know of none that flesh is heir to. As this malady is quite frequent, and the subject of much earnest consideration, we give the last recipe for its cure, which is given by that high authority the *London Lancet*:—

"As soon as the disease is felt, put directly over the spot a fly blister about the size of your thumb nail, and let it remain for six hours, at the expiration of which time, directly under the surface of the blister, may be seen the felon which can instantly be taken out with the point of a needle or a lancet."



STOCK & DAIRY

MAKING THE DAIRY ATTRACTIVE.

We copy the following article, deeming it applicable to Canada, as it is to the State alluded to, especially to this portion of the Province:—

We hear that quite a number of cheese factories are to be erected the coming year throughout the different States. Within a year or two, a few factories have been started in Maine, and considerable attention is now being directed to the dairy in that State.—Much of the land in Maine is well adapted to grazing, and as farmers begin to learn something of the advantages of dairying and the associated system, we may expect to see this interest largely developed in the State.

In the erection of factories too little regard is paid to architecture and ornamental surrounding. The early factories were rough, barn-like buildings, with no claims to beauty of construction or taste in any department connected with the establishment. Pig pens were often in close proximity to the milk room; the manufacturing quarters were not unfrequently over small streams, with insufficient provision for carrying off waste whey and other filth incident to these establishments. They soon became foul, polluting the air during hot weather for a considerable distance around. There was some excuse, perhaps, for this state of things among the factories first built. The system then was considered an experiment, and the least money possible was expended in the venture.

Again, dairymen were not well informed in regard to the nature of milk and the injurious influence of taints and their development in the product manufactured.

But now that these things are better understood, while the success of the factory system has demonstrated it to be a permanent institution of the country, more attention should be given to the architecture of the buildings and the laying out of grounds attached thereto, making the whole more ornamental and as attractive as possible. As taste in this direction is developed, it exerts a larger influence for good among farmers and in neighborhoods than many at first thought are apt to imagine. Arguments for cleanliness in milking and the preparation of the milk for the factory cannot have the desired effect, when urged by a factoryman whose factory and its surroundings are in a filthy, unwholesome condition. Better and cleaner milk than is now obtained at many factories is imperatively demanded, and the first place to commence reformation is at the factory.—We have conversed with farmers on this topic, and while freely admitting that improvement in the character of milk delivered should be made, and greater pains taken to secure that end, they often fall back, in justification of their own filthy practices, by citing the condition of things at the factory and the general custom of patrons in the neighborhood. "What would be the use," they say, "for one individual or even a half-dozen inaugurating all these nice things in our own practice when our labors would be counteracted by the slovenly practices of others, or by the filthy odors about the factory premises?" Some factory buildings are so constructed that it is impossible for the manager to keep them sweet and clean, and however much he may wish to promote improvement among his patrons, the state of his own premises weakens the force of the truth he urges.

If factory buildings were erected with some pretensions to taste and nicely painted, if the grounds were thoroughly drained and made attractive, the roads and walks kept in good repair and nothing offensive allowed to harbor near the premises, the whole would be a powerful lever to help reformation among patrons. A somewhat popular style of building is to arrange the living rooms for the manufacturer and his family in a part of the factory. These should be healthful, comfortable, and in all respects as pleasant—not to say elegant—as most farmers' homes.—Many of our best factory managers are persons of education, of refinement and taste; they have children to bring up and educate. It is not good policy to require such a family to dine in pent-up, inconvenient and miserable quarters, where not a sweet breath of air or pleasant prospect can be had from March to December. Many such persons refuse to occupy these positions, and they cannot do it except by feeling in some sense the

humiliation and degradation to which they are subjected. Yet this is the kind of men that we need to make the necessary progress in this department of industry. The amount of property entrusted to the skill and intelligence of the manager in a large factory during the season is very considerable, and the best men, all things considered, are the cheapest in the long run. The loss of half a cent a pound may be but a trifle on a small product, but on four or five hundred thousand pounds the figures assume considerable importance.

If we are to promote progress and improvement in this speciality, neighborhoods should take an interest in, and feel a pride for their factories, making them attractive models of neatness and good order, and which stand out prominently as institutions to be patterned after, or from which some useful lesson may be learned. We have seen so much good resulting to certain neighborhoods from the improvement of factory buildings and the beautifying of factory grounds with shrubbery and other non-expensive ornamentation, that we must urge these suggestions upon the attention of those who are contemplating building dairy structures, even though they be of moderate capacity.

Many of the late factories have been erected after old models, and are cheap and flimsy affairs—a disgrace to any neighborhood that makes pretensions to intelligence and good taste. Generally in such structures a low grade of cheese is made, for the cheese maker like the factory, is second class, and thus more is lost annually, in the aggregate, than would have paid for good buildings and neat surroundings, while no improvement is made or can be expected from patrons of the factory.

In most instances, we think it would pay those contemplating building to employ a good architect. He should understand, of course, the general plan of the various rooms, and this could be obtained by visiting some first-class establishment; then let him make his draughts and assist with suggestions as to the grounds and their adornment. A comparatively small sum spent in this way is well laid out, and will often save from wretched mistakes and a useless waste of capital.

We shall never forget the impression received on visiting the royal dairy at the Queen's farm, near Windsor. The ornamentation is most elaborate, while every provision is made for neatness and a sweet healthful atmosphere. Such a structure has an elevating influence upon character, and makes one feel that dairy farming can be turned into a delightful occupation, second to no calling or profession. And although it may not be advisable to vie with the regal magnificence here displayed—of costly marble tables, gilded porcelain, painted tiles and such elegant ornamentation as that which affords pleasure to the Queen of Britain in her model dairy—still we hold that the associated dairy farmers of America can do much to elevate their calling, and that if we are to produce the best butter and cheese to be found in the world, our manufactories must rise to be higher models of beauty and purity than those which too often disfigure the country.—*Rural New Yorker.*

CARE OF STOCK.

It is no longer the boast of some farmers, as it was many years ago, that they wintered a cow on a ton of meadow hay! We once heard that boast made; and more than once we saw that farmer's stock emaciated and weak, and some of it dead, in the spring. Now, how wide the extremes are. The more the skillful farmer can make his cow eat, the more profit he finds he can get for her! Wintering well goes far towards summering. It will be hard work for a lean and weakly animal to become fit for the butchers by November, even if grazing in a good pasture.

SHROPSHIRE SHEEP.

A correspondent of the *Irish Farmer's Gazette* expresses a very high opinion of the Shropshire breed of sheep. He says they will raise two and sometimes three lambs, better than a New Leicester will one. Their lambs are much more hardy. When fat, the mutton is worth more than the Leicesters, as there is always plenty of lean of a superior quality with the fat. Shropshire is an inland county in England, bordering on Wales, and its southern half is mountainous. May not these sheep prove valuable in the mountainous districts of the United States?

TURNIPS FOR STOCK.

We make the following extract from the pamphlet of the Messrs. Landreth, on turnips:—

Until the culture of roots, as they are termed, was extended and enlarged in England, animal food was a luxury seldom within the reach of the operative classes, with whom vegetables and farinaceous compounds, not always the best, were the reliable sources for sustenance. Now, meats of some shape are within the reach of all—the poor factory operative, the industrious mechanic, and the wealthy landowner, alike partake; and this change has grown out of, not national prosperity or increased wages, though both are indirectly affected, but the greater breadth of land in root-culture, which has so largely—immensely, it may be said—augmented the productive capacity of the acreage under plow, thus practically bringing food to every working-man's door.

Indian corn—with us the great meat producer, which has played so important a part in the civilization of our country, enabling the hardy emigrant from the older settlements to wrest the wilderness from the savage, and overcome the forest—is not a product of Great Britain nor any portion of the North of Europe, there only being known as an import from our country. In this particular we have an advantage impossible to estimate; but, great as it is, it should not lessen our exertion to produce succulent food, which augments the value of the farinaceous.

For many years we have, in our various publications, especially "The Rural Register and Almanac," given expression to our conception of the value of roots as stock food. Our own working stock, at present numbering fifty-six head, and a small herd of Alderneys kept for the family dairy, we aim as regularly to supply with food of that character, whether it be turnips, mangolds, carrots or beets, as with hay; and we should consider it most unfortunate if untoward events should deprive us of the ability thus to contribute to the health and vigor of our working force, or the secretion of rich milk, and correspondingly rich butter, as high colored in winter as that from grass and almost as well-flavored. That turnips singly and alone will secure health and strength, and rich milk, we are far from maintaining; but we do contend that, in proper proportion, in suitable condition, at proper times, mixed with corn meal, shorts, oil-cake or other farinaceous food, they will produce invaluable results.

To feed roots of any kind in cold stables, or, what may sometimes be seen, in the open air in inclement weather—the roots, perhaps, partially frozen—and expect favorable results, argues, to say the least, want of reflection; and where we find people say, as we sometimes do, they "can see no good in roots," we are sure to find, on inquiry, that some of the obviously rational and necessary rules of procedure in feeding have been neglected or disregarded.

THE SHORT-HORN SALES IN ENGLAND.

These sales seem to be realizing very satisfactory prices, notwithstanding the apprehension in regard to the much dreaded "foot and mouth disease." At the recent sale of Lord Penrhyn, 41 made an average of £210, 15s., 4d. The highest-priced cow was Cherry Duchess 14th, knocked down to Lord Butine for 755 guineas—a roan, running through several "Dukes," ending in the "stocks of Messrs. Wright & Charge." The next highest was Waterloo 33d, a red and white "Bates," running to the Waterloo cow purchased by Mr. Bates without a pedigree, as late as 1831, sold to Lord Skelmersdale for 550 guineas. The bulls did not sell so well, the 10 averaging a little less than £171, while the 31 cows and heifers made an average of over £223.

VERMIN ON STOCK.

A correspondent of the *American Farm Journal* writes:—
To exterminate lice from calves, colts, and other stock afflicted with them, take a good handful of the flowering annual known as Larkspur, cut the stalks near the ground, and steep tops and all in vinegar. When cool, wash the animal thoroughly in the liquid so as to wet every hair, and you will find one application to destroy both lice and mites entirely, and it is not injurious to the animal, like the use of sulphur, mercurial ointments, etc. Should a few vermin escape the first application, a second one will thoroughly eradicate them.

THE MANUFACTURING AND MARKETING OF BUTTER.

The following is a condensed report of a paper read by Mr. A. P. Miller, before the No. 10 Norwich Farmers' Club:—

During the last ten years there has been a decided improvement in the agriculture of this section, and the greatest in any one branch is in the quality and quantity of cheese. Previous to that time there was no cheese manufactured in this vicinity suitable for shipment to the European market; now there is cheese to the value of \$100,000 made annually in this small township, and it is sold readily at fair remunerative prices for shipment to the European market.

And while our cheese has a good reputation in that market, our butter is in great disfavor. The manufacture of butter and cheese is so closely connected that such improvement in the one and not in the other appears remarkable to parties unacquainted with the locality. The cheese is made on the factory system, and is sold according to quality; a desire to excel has arisen among the manufacturers, and the result is a large proportion of the cheese produced has been of good quality and has established a good reputation. The circumstances affecting the manufacture and sale of butter are very different. Butter is made by private parties, and is principally sold to store-keepers. The store-keepers make no discrimination between a good article and an inferior article.

Such a mode of doing business does not offer inducements to stimulate the manufacture of good butter, and as a natural result a large proportion of the quantity produced is of ordinary quality. The store-keepers give less attention to the sorting of qualities, packing, &c., than they would naturally if bought according to quality; but when it is sold again, either at the store or shipped to market, it goes according to quality, and after being thoroughly tested the price paid for it is not likely to be an extra figure, and under ordinary circumstances the price realized by the store-keeper must govern the price he will pay, which will consequently not be very high.

The result of such a system is that an injustice is done to those who make a good article of butter; the consumers in the vicinity get the whole a low grade of butter; the store-keeper seldom realizes a profit on the butter he handles, the production returns a less amount of money than it should, so that all parties are at a loss by the said system, and thus our butter gets a bad name in the market.

I do not anticipate that so great an improvement in an increased production of butter can be made as has been made in cheese, except at a sacrifice of cheese; but a like improvement in the quality can be made. In the interest of all parties I suggest as a direct and feasible commencement of the improvement that the store-keepers abandon the old system of paying the same price for ordinary butter as for extra qualities, and establish an equitable system of buying; pay a good figure for a choice article, and lower prices for lower grades. Such a change in the trade will stimulate the manufacture of good butter; will induce parties who have not the proper facilities for making good butter, go to the expense of buildings and other requisites with the assurance that the extra price and the satisfaction of having good butter for their own use will remunerate them for the expenditure.

Respecting the marketing of butter, we have our Dominion markets, and the American and European markets. The markets are great, and there is only a short time in the year—mid-summer—unfavorable to shipping butter. The markets are, as a general thing, very well supplied with ordinary butter, and very often glutted with an inferior article; but real choice brands are seldom in excess of the demand, and very often scarce, very high and much sought after. The production of real choice butter is so small in proportion to the demand that it always rules high. There need be no anxiety respecting market. When the manufacture is improved to the proper standard, a reputation will be established, and instead of "holding" or going to seek a market, as is often the case now, the buyers for the best markets will come to us and buy our butter, and pay fancy prices.

The following resolution was passed by the Club:—
Moved by D. S. Butterfield, seconded by H. S. Looze, and resolved, "That this Club denounces the present system carried on by the merchants of Oxford in butter dealing, and recommends them to discriminate in the qualities and give prices accordingly." Mr. Edwin Palmer was elected President for next meeting; subject—"Is the establishment of a Model Farm and Agricultural College advisable?"

Uncle Broadacres, after trying a horse described as "thoroughly broken and afraid of nothing," came to the conclusion that there was no misrepresentation. He moved as though every bone in his body had been broken and as he was continually afraid while there was nothing to be afraid of, he seemed to answer the description.

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CHEESE.

Every dairyman has heard of the Plymouth factory and its high prices. Its success has well nigh excited the envy of the factories throughout the State.

The Secret of Success.

We reached the factory in the morning before the curds were ready to cut, and watched the process until some of them were ready to go to press.

Rules and Regulations.

1. Resolved, That each and every patron, after having delivered his milk at the company's factory, places it beyond his control, in care of the company, to manufacture into cheese;

2. Resolved, That all milk brought to the company's factory shall be accepted and taken by the company, when in a pure condition; if it is brought otherwise it shall not be by the company accepted;

3. Resolved, That the trustees shall keep a full set of instruments for testing milk to the nicest degree of accuracy; and that they shall appoint some competent person to attend to the testing of milk during the season;

4. Resolved, That all patrons bringing their milk to the company's factory shall keep their cans under cover, and properly sheltered from rain, during the milking time and during the night time;

5. Resolved, That all cans must be properly ventilated, by inserting a tube in the cover or otherwise, so ventilated that the animal odor of the milk can pass off, when the milk is being transported to the factory.

6. Resolved, That any and all patrons who commence to bring their milk to the Plymouth Cheesemaking Company's factory in the fore part of the cheesemaking season, shall so continue to bring or send the same until the season closes, and the factory stops operations in the fall of the year, unless permitted or ordered not to bring the same by a majority of the directors.

7. Resolved, That the Plymouth Cheesemaking Company will manufacture milk delivered at their factory into cheese through the season of 1873 and following, furnishing all staples, sell and deliver the same, make dividends and pay the same to the patrons, at a stated price per 100 pounds of solid cheese;

8. Resolved, That no milk shall be taken from the milk spout, milk cans or milk vats after having been delivered at the factory, by any person or persons that may feel disposed to do, either for the purpose of drinking, cooking or for any other use that may be made of the said milk, under the penalty of the law thus broken and violated.

9. Resolved, That the president and secretary of the milk patrons are duly required, and are hereby empowered to obtain suitable insurance on the cheese manufactured during the season, the cost of said insurance to be equally borne and shared by the patrons of the said Plymouth Cheesemaking Company's factory.

10. Resolved, That the said Plymouth Cheesemaking Company will not permit on the Sabbath their factory to become a public or private place of resort for persons lounging about the street, or for persons wishing to visit the same from idle curiosity; and the factory help are required to be quiet and peaceable on that day, and to keep out all intruders on that day, under the rule: Positively no Admittance on Sabbath.

11. Resolved, That no patron's milk will be taken or accepted at the factory unless the said

patron or patrons positively and legally agree to abide by the foregoing rules, in toto.

It will be seen by the foregoing that everything is strict and thorough, and done on

Business Principles.

Whatever is assigned anyone to do, he attends to, and there is no dictating or meddling; and whatever he does he is paid a fair price for. No one is expected to work or spend his time for nothing. Everything is kept in perfect repair, and all repairs are made at the earliest possible moment.

Conveniences, &c.

Many factories have conveniences which the Plymouth has not. Nearly all the operations are performed just as they were nine years ago, when the factory started. This year, however, for the first time, steam is introduced, self-heating has previously been used; but it makes no difference in the character of the cheese.

The temperature of the cold water run around the milk at night is 40°, and it is pumped from a well by the engine directly into the pipes that supply the vats without the use of a reservoir. The common screw press is used, and the cheeses are pressed as long as they can be and get the hoops empty for the next day's curd. There has never been a curd-mill in the factory. Milk is received through conductors, instead of by dumping, as is now almost universal. The cheeses are set on benches, made of boards as wide as required for a cheese to set on. The boards are placed wide apart—a foot or more—so that the cheeses have plenty of room. No extra provisions are made for ventilation, but the factory is airy, clean and sweet, and stands in a clean neighborhood.

The day we were present the factory received 16,000 pounds of milk, which was made into 24 cheeses, weighing about 70 pounds each.—This was the milk of 750 cows.

The Process of Manufacture

was the same as that practiced in many factories which do not grind the curds. The milk was heated to a temperature of 82°. Sufficient rennet was used to cause coagulation in 12 to 15 minutes, and make a curd ready to cut in 40 to 45 minutes. The cutting was done with a common perpendicular knife, the cross cutting being continued until the curd was quite fine. The heat was raised gradually to 100°. The stirring while heating was at first with the hands, and sufficient to prevent packing on the bottom. As soon as the curd began to have a little toughness, the curd-rake was introduced and the balance of the stirring done with this. After the required temperature was reached, very little stirring was done. The curd stood in the whey until nearly ready to dip, when the whey was drawn to the surface, where it was allowed to remain until the acid was sufficiently developed. It was then dipped into the curd-sink, and all hands turned in to stir and air it as the whey drained off.

When the curd was well broken up and loose, three pounds of Ashton salt—hey will use no other—was sprinkled on and stirred in for every 1,000 pounds of milk. When another vat is not crowding to be dipped, there is no hurry in getting the curd out of the sink. If the sink is wanted, the curd is considered ready for the hoops as soon as salted. The pressure is put on gradually, and finally the screws are put down as firmly as a man with a lever can do it. At intervals these screws are tightened. They are started the last thing on going to bed, and again in the morning as soon as the factory is opened. Then they stand until the presses are wanted again in the afternoon. All the hands are boarded in the factory, one end of which is fitted up for the purpose. We will now give what we consider

The Essential Points.

When the Plymouth factory was started in 1864, Miss Sternberg, who received her instructions at the Eagle factory in West Edmeston, was hired to run it. She has had charge of the factory ever since and runs it now. Her experience enables her to tell with exceeding closeness when a curd is fit to dip. Now and then she may vary a little, but her senses of taste and smell enable her to make a remarkably even lot of cheese. And she does not intend to make soft cheese, for the sake of getting it early to market, but works the curds down, spring, summer and fall, so as to make a good shipping article. Nothing less than 29 days old is allowed to go out of the factory.—Here is a hint to those who indulge in soft cheese, the effect of which is now, as we are credibly informed, seriously felt on the market, causing a depression.

Our factory must learn to make and sell only good shipping cheese, and stop sending off soft, green curd, if they want to make a good reputation and get uniformly good prices.

None but old rennets are used. They are most saved by the patrons, who have been taught how and are paid good prices for good rennets, none others being accepted. Some are dried on bows or sticks, and some are filled with salt; but all are clean and sweet, and are kept tied up in bags, in the factory. It is a

rule to use no rennet less than a year old; if two or three years old, the better. With such rennets a better, firmer and finer curd can be made than with green rennets, and we think more cheese can be made from the same milk with the old rennet. If a change be made from old to new rennets, the difference in the curd will be apparent to the merest novice. The green rennet makes a softer, weaker and more slippery curd than old rennet does. The rennets are prepared at the Plymouth factory by soaking in pure whey; and common basket annatto, prepared with potash, is used for coloring.

The great secret in making fine cheese, where the milk and everything else are right, is in knowing when to dip the curd—when, to use the expression of the maker at the Old Fairfield factory, "the curd is tempered right."—This is an apt term to use. Almost everyone knows that the difference between a poor and a good cutting tool is often in the temper.—Tempering is a very nice business and requires experience and a peculiar ability to determine by appearance the exact degree of heat. The same is true in regard to the amount of acid in making cheese. The cheese must be "tempered" right, or it will be too hard or too soft.—Utica Herald.

SALE OF MR. WALTER GILBEY'S ALDERNEYS.

We learn from the *Mark Lane Express*, that a draft from the Hengrave herd was sold by Mr. Sworler, at Bishop's Stortford, on Thursday, when 20 lots of cows and heifers made an average of about £26; the highest price being 35 guineas, given by Mr. Beadle for Zoemaid, by Bandboy. It was stated in the catalogue that this bull's stock "on fresh imported cows show far superior frame and constitution to those bred in the Islands"; but the question is if the English bred ever retain the fine thoroughbred character of the Island cows. A few Jerseys, the property of Lord Rosslyn, were put up after the Hengrave sale, and most of these were sold at fair prices.

CARE OF SHEEP.

A few winters ago I weighed the hay for ten fine-wooled sheep and for an ordinary sized cow that was giving milk, and the cow consumed rather more than the sheep.

A few roots fed daily in winter, fed with hay, will keep a sheep in good condition to care for her lambs in the spring. The lambs need looking to the first few hours after birth; most of them, however, will not need it, but occasionally one will be found that will not be strong enough, or from some other cause will fail to obtain its natural supply of milk, and will require assistance.

Here is what three did last season:—They lambed in March, one had three, the others two each, seven in all; sold five of them in June for £25; the two kept if sold at the same time with the others would have brought \$11, making \$36; sold 12 lbs. of wool for \$6; total, lambs and wool, \$42, which will be called a good return by most of your readers, I think. But perhaps some of them have sheep that have done better. These lambs were not sold for any fancy price, but at regular rates to the butcher.—Peterboro, N. H., Transcript.

FEEDING COWS AND YOUNG STOCK.

We are feeding our own cows chaffed corn-stalks and straw, with a quart of corn-meal to a bushel of chaff. Those that are giving milk get in addition a pint of corn meal and a quart of bran stirred into a pailful of water, twice a day. Keep the stable clean, warm and well ventilated. All cows are better for being corded, those that are stalled especially need it. If the cows leave any of the cut stalks and straw, remove them from the mangers and sprinkle a little salt water over them. They will then eat the most of them.

Young stock should be fed liberally. They are growing and cannot be kept healthy unless they have enough nutriment to provide for their natural growth. A bushel of chaffed straw or stalks, a bushel of clover hay, half a peck of fine bran, and a quart of chaffed corn meal mixed together form a cheap and excellent food. Let them have all they will eat of it.—If they have any, give it to the older cattle.

The stock growing interest of the West is every day becoming more and more important, and yet there is no department of our agricultural pursuits that is more susceptible of improvement. In fact, with very few exceptions, the whole business is done upon the very old fogy plan of "rough and tumble" that is, cattle allowed to run at large and wild in the summer, and out in the storm and cold in the winter. With such wild grass as they can find, either good or bad, and often scant at that—with sometimes water and sometimes not, and not unfrequently stagnant and unhealthy in the former case—with shock or ear corn in the latter.

Correspondence.

NOTES FROM MY GARDEN.

DEAR SIR,—

Being fond of trying experiments, and knowing that their value is lost if not recorded, I wish to make the FARMER'S ADVOCATE the medium through which I may relate my successes and failures, hoping that they may aid some of my brother subscribers.

Don't you think, Mr. Editor, that more of our friends ought to send in reports of what they have been doing, for the benefit of the rest of us. I know for one that I have spent time and money trying experiments which would have been unnecessary if others who had previously tried them had reported as to their utility.

Buckwheat to drive away the Potato Bugs.

The papers last year were full of advice as to how to defeat our enemy, the potato bug, and among other ideas, the sowing of buckwheat among the potatoes was suggested. I tried it this spring fully. I sowed buckwheat all around and through my potatoes, and find to my sorrow, that the bugs have not the slightest respect for my precautions. In fact, they appear to think that the buckwheat was put there for their especial benefit, and made use of it to lay their eggs on. This proceeding rather disgusted me, and I now pronounce the buckwheat cure a failure.

Hilling up Potatoes.

I have for some years been trying which was the best for potatoes, much or little hilling, and the result is that I believe we have been in the habit of hilling them up too much. It is all very well in a damp climate like that of Great Britain, or when we plant in a low wet place, but in our ordinary loam great hills raised around potatoes only serve to dry out the soil and greatly injure the crop.

Potato Sets.

There appears to be great difference of opinion as to what kind of sets we should use.—Some use the seed or rose end of the potato alone; others use the whole potato, and others again use only single eyes and will not use the rose end under any consideration. All seem to be agreed that very small potatoes are not good for seed. I am trying all the different ways this year and hope to be able to report satisfactorily. Can any one who has tried the experiments tell me what was their result? I am satisfied of one thing about potato sets, and that is that our potatoes for seed should not be allowed to become dead ripe. Did you never notice that the best seed was always that from potatoes which were sown too late to ripen thoroughly? It is from the use of over-ripe seed that our potatoes so soon degenerate.

Hanson Lettuce.

I am a great lover of good lettuce, so as soon as I knew you had some of this new seed, I determined to give it a good trial. I sowed it in a pot and then transplanted it into the ground when large enough. I have now some of the very finest lettuce I ever saw or heard of, beautifully crisp, white heads, slightly curled and large enough to completely fill a peck measure and leave some sticking out. I mean to make this my standard lettuce, and will raise none other.

Flowers.

My seeds which I obtained from you have all grown well excepting where my own mismanagement has spoiled them. I am satisfied from my experiments this year that watering is not the thing for delicate flower seeds. My way after this will be, after sowing the seed, to place boards over it and thereby retain whatever dampness there is in the ground, but in no instance will I water, for this only forms a hard crust on the surface through which the delicate plants cannot thrust themselves. Some of my flower seed I sowed too early, and the ground was so damp and cold that the seed rotted.

Some other time I will send you some more notes from my garden.

Yours respectfully,

PROGRESS.

Editor Farmers' Advocate.

The ADVOCATE for July to hand. Mr. Christie seemed inclined to carry matters with a high hand respecting the selection of judges for the Durham cattle. I think his conduct is insulting to the farmers of Ontario, as if a sufficient number of honest and capable judges of cattle could not be found amongst them.

The only sure remedy for the onion maggot is a liberal supply of dry salt as often as may be required; to be applied dry, but never pickle, as I have seen that cut the tops to pieces when they were well grown.

I fear the English farmers, by treating their laborers as they are doing, will only prove the truth of the old adage: "Those whom God wishes to destroy he first makes mad." The

great landlords ought to reduce their rents by one-half, and the tenants pay the men at the rate of three pence per hour.

The fine rains we have had lately are working a wonderful change for the better on our crops.

Yours, &c., C. J.

Editor of Farmers' Advocate.

Sir,—As a subscriber to your valuable paper, I have thought that a short communication from my locality might prove interesting to many of your numerous readers. Now, to be brief, the subject to be taken up is the

HYBRIDIZATION OR CROSS-IMPREGNATION OF FRUITS AND WHEAT.

I have just returned home from a visit to Elmwood, the residence of Wm. H. Read, Esq., near St. Catharines and Port Dalhousie, where I saw his famous new seedling strawberries, namely, Victoria Russel, Crown, Uncle John, and the Hero of Canada; these, Mr. Editor, are probably the largest four varieties of strawberries on the American Continent, really they look more like tomatoes than strawberries, and the flavor is excellent, partaking of that of the pine apple. They were produced as follows:—Russell's Prolific for female, Myatt's British Queen of England for male; this crop produced the Victoria Russel. Again, Shaker for female, Myatt's British Queen for male—result, Read's Crown and Hero of Canada. Marguarite female, Jucunda male—result, Uncle John, a long, large, showy fruit, like all the above, measuring from five to nine inches in circumference.

Then, in passing along, I was shown some very fine gooseberries, the result of a cross between the White Smith and a wild native sort of our own country. I noticed that two of the varieties were large and clean, robust and healthy; Mr. Read informed me that they had never shown the slightest inclination to mildew, and were now three years old and fruiting.

Here we came up to the raspberries in rows, about one hundred yards long, allow me the term—perfect banks or walls of fruit; indeed, something to see now in its present state of bearing and just beginning to ripen. This must prove of great value as a splendid and profitable market variety, being firm, bearing carriage well, and the canes large and well set with side branches, very prolific and altogether hardy; it was produced between the Pastolf, an English variety, and a native of our own forest woodland.

Now we are in front of a row of black currants, which were produced from a cross between the Black English and the Black Naples, and are called Read's Mammoth. This is unmistakably one of the greatest black currants; the wood, foliage and fruit are all of a size, far above that of others of the old sorts; size of fruit quite equal to the common cherry.

We now enter the vineyard, which looks very luxuriant and neat, having just been cultivated and hoed out, and the vines tied up; all is clear where the eye shoots far in the distance past thousands of clusters, which are every now and then to be seen as the wind turns up the dark green foliage, and here the idea comes in, is not this our land, "the land of promise." A little further on stands the new hybrid seedling grapes, twenty-five varieties in number; these have been selected annually from crosses between the best hardy American varieties, and the famous Muscat family. These vines prove hardy, having passed through the last trying winter unprotected without the loss of a bud. Some of the sorts ripen before the Hartford or Delaware, and retain from the Muscat parent its beautiful and surpassing flavor, and when piced before the Fruit Growers' Association last autumn, held at Toronto, received a great amount of laudation, &c. These varieties promise well, having so many good qualities; they are now bearing large crops, and will be worth seeing in the coming autumn, in their time of ripening.

We now find ourselves by the side of fifty-four varieties of hybrid fall wheat, swaying and bending under its proud load of well developed grain of both White, Flint and Amber varieties. These new wheats present to view many different characteristics. In straw tall, medium and dwarf are to be seen. In ears varying from four to eight inches in length. In some varieties the heads are long and loose, in others very close and compact; some taper to the top, while the ears of one variety are very much enlarged at the top; some, again, are equal both at bottom and top. In one variety the panicles are awned, while in another, grown from the same parents, they are awnless. In some the glumes appear much swollen, standing out horizontally, so much so as to expose the grain bare to view: this is an indication of good plump wheat, full of flour. Some varieties are now ripe and fit to harvest to-day, July 10th, and others nearly so, while another variety is quite green and sappy. Some kinds again are subject to be injured by the midge and the rust, when others alongside will escape both, coming out plump and clean.

Yours, very respectfully,
GREGORY.

Port Dalhousie, July 10th, 1873.

[We thank you and every other gentleman that kindly sends us useful information. We are pleased to hear of Mr. Read's varieties of grain and fruit. If we can make it convenient we will call and examine Mr. Read's grounds. We shall always be pleased to hear the results of these useful experiments.—Ed. F. A.]

Seed Wheat.

Having examined many fields and heard many reports of the different varieties of wheat, we have come to the conclusion to send out no other variety than the Scott wheat the coming fall. There will be other varieties that can be procured, of whiter color and quite as plump, perhaps plumper; they are of the Diehl, Treadwell, Soule, or other old varieties, and can be procured by those wishing for them in almost every section. But the wheat that has thriven with us the best is the Scott wheat, and from observations and reports we think it, on the whole, the safest and most profitable wheat to raise. It is much harder than the whiter varieties and is of good quality. Less loss will be sustained from winter killing, and an average increase of bushels per acre will be obtained. This grain stands up well.

It is our intention to send out no other variety, unless we find something better than we have found to suit our requirements. We shall be able to supply this wheat about the middle of this month.

The Government Agricultural Farm.

This cut is intended to represent the present position of affairs. The Hon. A. McKellar gave a certain gentleman of St. Catharines a letter to Mr. Stone, of Guelph, requesting or ordering Mr. Stone to give up possession of the house and farm to him.—We understand that the furniture and fixings were on board the cars, but on presenting the letter from Mr. McKellar, Mr. Stone sent the man flying back to Guelph bag and baggage, and would not admit him into the house.

We believe Stone acted right, as the Government had not paid for the farm as they had agreed to do, and various things appear to be working scum. The sooner the farmers unite their strength, and, as Stone did, kick the whole concern higher than a kite, the better it will be for them, the less taxes they will have to pay, and the more private enterprise will flourish. Still, it was conducted by farmers who have shown themselves of public service, and would be willing to invest their capital in it, then we might expect some good to come from it. The present plan appears to be to make a great show, expend a lot of money, give places and favors to political aids or private friends, but as for the interests of the farmers, that is not in the foundation of the plan, nor will it be except in words at political gatherings.

The Organ at Home.

NEW MUSIC BOOK FOR REED ORGANS AND MELODEONS.

Published by O. Ditson & Co., New York. A capital selection of dance music, voluntaries, sacred music and portions of the most celebrated operas. It is sold at \$2.50, and can be obtained from Mr. W. L. Carrie, of London, Ont.

We think the selection an excellent one, and would advise our readers to obtain a copy.

To persons desirous of having illustrations of stock, machinery, implements or scenery, we have now made such arrangements that we can have them executed by our special artist in a much better manner than has been done heretofore. See specimen in this issue of the Horticultural Grounds at Toronto.

Orange, Judd & Co. send us some very nice chromos—"Mischief Brewing," the prize which is given with the *American Agriculturist*, and the "Strawberry Girl," which is given with *Hearth and Home*.—The designs are both good and the work well executed.

The Prospect of the Markets.

WHEAT.

The *Michigan Farmer*, in a carefully written report of the crops, says:—"Even with a full crop, which we have not, is there any prospect in whatever direction, that indicates that wheat should be very high in price during the coming season, and especially in the fall." Of Detroit market it says:—"Receipts have not been at all heavy, and there is a grand stand-still awaiting the development of the crop, much of which has been out, but very little has yet been ready for market. Much of the wheat throughout the State is yet quite soft, and, with the rains which we have had, it ought to stand for a time before being threshed out. The berry is unquestionably large and full, but we have yet to see more than one or two fields in a hundred that will give a large yield. In all places where we had an opportunity of handling the grain in the field we found the grain as handsome as we ever saw."

The prices in America must be ruled by the European demand, hence the prospects are that our farmers will get remunerative prices. The dispatches from Liverpool have caused a general advance in the price of wheat in New York and Chicago, and the holders of grain are very firm in their demand for higher prices. From the reports from Europe there have been indications for some time that there will be a deficient supply of breadstuffs.

DAIRY PRODUCTS.

Markets are reported dull. Detroit prices range from 10½ to 12 cents, the latter only for a choice article. The New York market shows a tendency to decline. The Liverpool market has shown a marked change, the quotations for American cheese showing a decline of nearly \$1.50 per 112 lbs. Prices at the English cheese markets are said to have declined. At the Frome cheese fair the range of prices for the best dairies of Cheddar



cheese was from 66s. to 79s. per 112 lbs. In the London market American cheese was quoted at 56s. to 68s.

The liberal supply of butter at the United States markets indicates that the supply is likely to be large and keep down prices. In Detroit only choice fancy brings over 20c., while the general price is 16c. to 18c. In New York, Western butter, when of good color and fresh, brings 20c., but butter of an inferior quality is a drug in the market. The exporters to England look for solid, even-colored lots, but cannot expect a prime article at their price, 17 cents. The highest quotation for butter in New York is for fancy pails, which bring 28c. to 30c. Western reserve and Michigan, good to prime, are quoted at 20c. to 32c.

WOOL.

Lower grades of wool will not, it is thought, meet improved prices, as the clip this season is large, and the market is already pretty well supplied. The case is different as regards long, fine wool. There is little surplus on hand of the goods for which such wool is required, and for such goods there is a constantly increasing demand. The Michigan wool raisers have realized from 36c. to 40c. per lb., while some lots have sold at two and even three cents higher. All that seek an early market have, we are told, sold all their clip, while others still hold in hand a considerable quantity. At the late general sales of colonial wool in England prices advanced since the opening from three to four cents. Manufacturers and dealers are purchasing the staple with confidence in the maintenance of prices.

HOPS.

"Although prices of the in-coming crop bid fair to open high, there appears to be a

general disposition on the part of dealers and holders to close out their present stock and start business in September on a clean market. Our London advices concerning the coming crops are more discouraging, and present appearances indicate high prices there the coming season. Prices continue steady at 35c. to 40c. for Western hops in the New York market."



POULTRY YARD

FEEDING CHICKENS.

Corn, wheat screenings and occasionally coarse meal, scalded and mixed with hot water, make up their food. I never give them corn meal mixed with cold water; I don't believe in it, in fact I think that it is one source of their sickness and diseases. All their food is better for them cooked, but cooking of corn and wheat implies trouble. So it does, but it pays to do it, and does anything pay without trouble? However, let me say, whether you feed on raw corn or no, never feed on raw corn meal.

Now, when I feed, my plan is to walk all over the yard, about half an acre, and scatter the food right and left (two grains never fall in the same spot) and immediately you see the whole army scatter themselves as skirmishers, and the yard presents, for an hour or two, somewhat the appearance of an upturned ant hill. I never give them as much as they can eat, so they always leave off hungry. By my system of scattering the food, old and young, weak and strong, small and large, all get their chance and share, all are kept so actively and busily employed that the very process of feeding stirs them about, and keeps them from being too lazy to move about.

Clean water (you see I emphasize the clean part) they must have, free to all. Drinking foul water kills more chickens than a net's worth of us raise. Occasionally in summer I drop a lump of lime into the water; I also make them Cayenne pills whenever I notice them drooping, or their discharges show symptoms of diarrhoea. Gapes come from drinking foul water, living in dirty quarters and want of good food properly given.

The best cure for this and all other diseases chicken fle-h is heir to, is prevention—in this case, an ounce of prevention being worth a good many pounds of cure. Give them good, wholesome food, healthy, clean quarters, pay due regard to their comfort, and, my word for it, they will make you rejoice in the profitable gratitude they return you; you will be but little troubled with cholera and gapes, or any other pest, except the miserable chicken thief, and the best cure for him is a spring gun properly arranged to dose him when he makes his marauding attempt.—*Cor. Country Gent.*

EGGS BY THE POUND.

There seems to be no good reason why eggs should not be sold by the pound, the same as other animal products; we are therefore not surprised to learn that the matter has been brought to the attention of the Legislature of Massachusetts, and it has been enacted that eggs shall be sold in that State, hereafter, by the pound.

It is alleged by the parties interested that there has been within the last few years an increase in the proportion of small eggs produced and imported into the State; and considering that the present size did not fairly represent a dozen, they sought legislative protection in the matter.

At a time when eggs were worth but eight or ten cents a dozen, it made little difference whether a dozen eggs weighed a pound or a pound and a half, and as selling by count was the most convenient, it was most readily adopted; but at the present time, when, in the city markets, eggs range in price from thirty to sixty cents a dozen, even going to a dollar occasionally, it is of some importance to those of moderate means who are compelled to purchase at all times, that they do not lose twenty per cent. in weight by having small eggs doled out to them. It is a matter of surprise that eggs should still be sold by count, while potatoes, apples and, in fact, many articles less valuable and just as easily counted, are sold by their weight.

Aside from rendering justice to both producer and consumer, it will have the effect of increasing the production of this healthful and nutritious article of diet, encouraging the rearing of these breeds of fowls which really lay the greatest weight of eggs, both by their great number and large size.—*L. S. Journal.*

At a recent sale of Leicester sheep from the flocks of Lord Polwarth, an English breeder, one ram brought \$350, with one exception the highest price ever paid for a Leicester sheep. The average of the sale was \$185.



like good and Such are the Country Gen spoken of and are m wooden pail sible mixtur a pint of ne tablespoonf tract you m sweet, as a out; theref palatable be cooked.

ICE CRI

While but is not alway substitute c new milk, b fuls of corn- milk, is stirr utes; add t to a stiff fro or four min should be ac to boil. F vanilla.

At this tin test weather the value of lar may be nice and coc milk unless arising from barrels, box fact renovat coats of wh No disin sweeten a co overhead an the bottom the ventilat foul smells of If you desir the most co should be fo

That swee vor and swe following w Loosen th ear, and ren veniently g tying them water that i so many int tially reduc It is a good on the corn

Here is a because you let it cool fo take one pin three crack three-fourth and the wh froth for fro done, spreac back in the a very little, the table.

KEEL

A simple y mer where i common flo some water The orifice a not. The will keep th



MINNIE MAY'S DEPARTMENT

ICE CREAM.

The warm days of the present and coming months naturally suggest ice cream.—We think that there are many of our readers who would like good and simple directions for making it. Such are the following which we cut from the *Country Gentleman*. The patent freezers spoken of are comparatively unexpensive, and are much more convenient than the wooden pail. For the cream the best possible mixture is a quart of pure sweet cream, a pint of new milk, a half-pint of sugar, and table-spoonful of vanilla, or any flavoring extract you may prefer. It must be made very sweet, as a portion of its sweetness freezes out; therefore it should be sweeter than is palatable before it is frozen, and let it not be cooked.

ICE CREAM WITH EGGS AND MILK.

While butter is so high-priced sweet cream is not always come-at-able, and a very nice substitute can be made with two quarts of new milk, boiled into which two table-spoonfuls of corn-starch, well dissolved in cold milk, is stirred and allowed to boil ten minutes; add to it the whites of six eggs beaten to a stiff froth; stir them rapidly in for three or four minutes. A pint of white sugar should be added as soon as the milk is put on to boil. Flavor when cooling with lemon or vanilla.

MILK CELLARS.

At this time of the year we have our hottest weather. Every dairyman understands the value of good milk cellars; and the cellar may be ever so well constructed, ever so nice and cool, and will not be fit to receive milk unless entirely free from all effluvia arising from decaying vegetables, including barrels, boxes, &c. There should be a perfect renovation, and with this several good coats of whitewash. No disinfectant is better calculated to sweeten a cellar than lime. Use it freely overhead and on the sides, and sprinkle over the bottom of your cellar, and then see that the ventilation is good, and that there are no foul smells on the outside of the building.—If you desire to make good, sweet butter, and the most contained in your milk, these hints should be followed.

COOKING SWEET CORN.

That sweet corn may retain all its rich flavor and sweetness it should be cooked in the following way:—Loosen the husks at the small end of the ear, and remove all the silk that can be conveniently got at. Then replace the husks, tying them with a string; put the ears into water that is boiling, being careful not to put so many into the kettle at a time as to essentially reduce the temperature of the water. It is a good thing to place a little white sugar on the corn when the husks are loosened.

PUDGING.

Here is a pudding that I think is very nice, because you can make it in the morning and let it cool for dinner. For a small family, take one pint of milk, the yolks of two eggs, three crackers rolled fine, and bake. Use three-fourths of a cup of granulated sugar, and the whites of two eggs, beaten to a stiff froth for frosting. When the pudding is done, spread the frosting over it and set it back in the oven for a few minutes to brown a very little, and your pudding is ready for the table.

KEEPING BUTTER IN SUMMER.

A simple mode of keeping butter in summer where ice is not handy, is to invert a common flower-pot over the butter, with some water in the dish in which it is laid.—The orifice at the bottom may be corked or not. The porousness of the earthenware will keep the butter cool.

SIMPLE CURE FOR RHEUMATISM.

Boil a small potful of potatoes and bathe the part affected with the water in which the potatoes were boiled, as hot as can be applied immediately before going to bed. The pains will be removed, or at least alleviated by the next morning. Some of the most obstinate rheumatic pains have lately been cured by one application of this novel and simple remedy.

Can any of my friends tell me of some sure way of banishing the troublesome flies. I have a great many of them in my house; I have the rooms darkened, and spend ever so much time brushing about with a cloth, trying to drive them away, but instead of going away they come all the thicker. I read in some paper that carbolic acid in a room would drive them away. I tried that, but instead of driving the flies out, it nearly drove out the inhabitants. The smell was so very disagreeable we could not stand it. Now, if any of my numerous readers know of any way of killing them, or getting rid of them by not killing them, and will send word right away how to do so, they will greatly please and oblige

MINNIE MAY.



UNCLE TOM'S COLUMN.

MY DEAR CHILDREN:

I have a capital little nephew whose name is Willie, and who hails from Millbank. Almost every month I get a letter from him. He has a very curious question to ask:—

103.—What was to-morrow and will be yesterday?

And another—

104.—Why does a miller wear a white hat?

Annie Canning, Markham, gives this one:

105.—A riddle, a riddle, alive at both ends and dead in the middle. Name it.

I told you some time since about Frank and Levi, of Altona, having dissolved partnership. Now, I find that Frank has another partner, and this time it is a little girl. Good for you, Frank. Some day I will go up there and find out all about this affair. Let me know next time is Lydia a nice looking girl, and has Levi got another partner too?

Thomas J. Scott sends a very good answer to puzzle 87. Maggie McNulty, of Atherly, sends in answers and new puzzles. Let me hear from you again, Maggie.

My niece, Iola Miller, of Markham, writes me a very nice letter. She says she has now paid me off for neglecting her, but how she will neglect me no more if she can help it. That is right, Iola, and I shall always look out for your letters, so I will call you my No. 1 assistant. Now, girls and boys, who will be No. 2? Iola says she loves me, so No. 2 must do so too. Here are some of her puzzles:

106.—Beech, birch and maple, all begins with what?

107.—Why is a dog's tail a great novelty?

108. Spell mouse trap in three letters?

My niece, Mollie Good, sends answers to the puzzles, and she writes so nicely that I would like to have more from her. Write a funny letter for my little girls next time, Mollie, and your uncle will thank you.

109.—I went to the bush and got it, and brought it home in my hand, because I could not find it. THOS. FREETHY.

Clara Boake, Newmarket, sends the following hidden cities:

110.—O ma Hannah is washing to no use at all. (2 answers.)

111.—Is that a new bed for Dan or me?

112.—How pet he is for a boy of his age.

Emily Ann Allen, Ingersoll, is welcomed into Uncle Tom's Column, and gives us the following:

113.—My first in your face has a prominent place, My next in a smile you appear; A bundle of sweets my whole will complete When Flora bedizens the year.

Nellie V. McGannon is one of our old friends. She is one of my nieces who has helped well at

Uncle Tom's Column. Here is a puzzle from her:

114.—No book is without me, of that I am sure, A person I am, often seen at the door; It's certainly funny, but still it is true, There never was one but what there were two, And two are a portion of every tree; You'll find it correct when the answer you see.

Where is LALLIE these times? There has been no letter from her since Uncle Tom sent the prize pictures.

Do any of you know my niece, Maggie Stewart. I got the nicest little letter from her some months ago, but have not heard from her since. I will have to put up a notice:

LOST, STRAYED OR STOLEN!

One of Uncle Tom's large small family. These are some of her puzzles:

115.—In my first my second sat; my third and fourth I ate.

116.—There is something of which, though the whole be taken away, some will still be left.

117.



Annie P. gives the following recipe for having fun:

"Invite half a dozen boys and girls to your house when your pa and ma are away; put a shilling in a dish with molasses an inch deep in it, and offer it to the boy who gets it with his mouth." The boys would be apt to repeat the lines from Burns:

"The sweetest days that e'er I spent Were spent among the lasses O."

The following story is told of one of my 7-year-old nephews:—He went into a barber shop in this city and ordered the barber to cut his hair as short as shears could do it. When asked if his mother ordered it in that way, he said: "No, school commences next week, and we've got a school ma'am that pulls hair."

S. B. Williams sends the following

GEOGRAPHICAL PUZZLE:

118.—When I was a young (island in the Irish Sea) I proposed to my brother (a furt at the head of Lake Superior) that we should go (island in Lake Huron) hunting, so he said he was ready to go at once, but we would be very (country in the southern part of Europe) if we did not shoot anything (city in the north of Italy) to eat. So I told sister (an island in the North Pacific Ocean) to (city in the south of Russia) (a island in Detroit River) and (distinguished navigator) it, and to make some (a descendant of Noah) (plural of a Canadian town); also, to boil a sufficient quantity of (a lake in Ontario). My brother said this would be sufficient along with the (city in Michigan) which we would find on the way. We bid sister (a cape in south of Greenland). She said she had (cape in Africa) that we would have (mountains on the coast of British Columbia). The only game of any kind we saw the first two days was (a sea in the south of Europe) (island in the Arctic Ocean), which, with great trouble, we killed. The next day being (a lake in the route to Red River), we did nothing.—The day after was (a cape in the south of Ireland), and we proceeded on our way. The road was very (mountains in the United States).—After hunting a few days more, I thought we were staying away (town in France) from home, and as the weather was getting very (state in South America), we made a (point at the south of England) for home. A violent (bay north of Van Dieman's Land) arose, and a flash of lightning (a cape north of Vancouver's Island) a large (island in the North Pacific Ocean) into (Islands in the St. Lawrence River) pieces. Without any further adventures we returned home.

ANSWERS TO JULY PUZZLES.

92.—Alphabet. 93.—A sieve. 94.—They never do anything without cause. 95.—Toulon and Toulouse (too long and too loose). 96.—Berlin, because it is always on the Spree. 97.—Cassio and Desdemona (cash I owe and there's the money.) 98.—To keep the peace (piece.) 99.—That I would be making game of him. 100.—Yellow Sea. 101.—I X Q Q U. 102.—"Oh, on old towers, &c."—insert the letter O where needed.

Miscellaneous.

CEREBRO SPINAL MENINGITIS.

This disease prevails to a very considerable extent in Brantford and its vicinity. It is a very dangerous disease, usually terminating in death in from three to ten days. It is a new disease. It prevailed as an epidemic in Russia, Poland and North Germany some three or four years ago. It is simply an inflammation of the meninges or membranes that cover the brain and spinal chord, and no age seems to be exempt from it. Some of the ablest and most accurately observant medical men believe that meningitis arises from poison in the blood, but how the poison gets there they cannot explain. It will probably forever remain a mystery, just as the cause of cholera has for so long remained a subject of discussion amongst the most learned M. D's. The symptoms of meningitis are somewhat varied in different patients, but cannot be mistaken by any well educated physician, and from the very fact that the disease is of an inflammatory character, the proper treatment and the one most likely to result in recovery will at once suggest itself to every medical man.—Ex.

PERMANENT WHITEWASH.

With the annual recurrence of house-cleaning comes the annual crowd of inquiries for the best out-door whitewash. As nothing better has come up than the oft-before published recipe, we here repeat it:—

Take half a bushel of freshly burned lime, slake it with boiling water, and cover it during the process to keep in the steam. Strain the liquid through a fine sieve, and add to it 7 lbs. of salt, previously well dissolved in warm water; 3 lbs. of ground rice, boiled to a thin paste and stirred in boiling hot; 1/2 lb. of powdered Spanish whiting, and 1 lb. of clean glue, which has been previously dissolved by soaking well and then hanging over a slow fire in a small kettle within a large one filled with water. Add five gallons of water to the mixture, stir it well, and let it stand a few days covered from dirt. It must be put on quite hot. For this purpose it can be kept in a portable furnace. About a pint of this mixture will cover a square yard.

RHEUMATISM.

Those who are suffering from this distressing complaint should give the following remedy a fair trial. It is one used by an eminent physician for many years with marked success, and is now given to the public with the assurance of its effectiveness. We believe that poke-berries are now kept at the drug stores—if so, they can be had at any time. Take poke-berries two ounces, best gin one pint. Let stand long enough for the spirits to extract the virtues of the berry, then for an adult the dose is a table-spoonful three times a day. This simple remedy generally effects a complete cure in a few weeks.

Success in bee-keeping depends mainly on the quality and extent of the pasture for the bees. If the locality is poor in honey-producing plants, or overcrowded with stocks of bees, success need not be expected, and in such cases it is quite likely that the keeper having the strongest and most numerous colonies will succeed better than his neighbors who have fewer and weaker swarms.

100 ACRE FARM FOR SALE.—One of the best farms in London Township, on a gravel road, within 10 miles of this city. Good barn, stable and residence. 125 trees in Orchard, 16 acres wood. Creek runs through it. Price \$6200. A rare bargain; apply at once. Address WM. WELD, Agricultural Emporium, London, Ont.

52 ACRES IN GORE OF LONDON, two miles from city. Price \$90 per acre. Stone house, frame barn, well fenced, well watered, in a good state of cultivation. Terms—one-third down, the balance on time at 6 per cent. Apply at this Office.

50 ACRES FOR SALE IN DORCHESTER Township, 10 miles from London, 3 1/2 miles from Dorchester Station. Price, \$3000. Six acres wood. Frame House, 6 years old, painted and papered throughout. Good stone cellar. 4 acres orchard; grafted fruit, best kinds. Outbuildings good and large. Barn about 45 feet long, with good granary attached. A good creek runs through the farm. Corners on two gravel roads. Well fenced. Apply at Farmers' Advocate Office. If by mail, post paid, and enclose stamp for answer.

12 ACRES IN THREE LOTS, on upper Queen Street. Frame house, 1 1/2 stories, 9 rooms, cellar. Well watered, good young orchard and garden. Price, \$2500. REV. R. B. TUPPER. C-1

OCEAN PASSAGE.—Persons intending to take a trip to the Old Country, will find it to their advantage to go by the Steamers of the National Line—large, safe and comfortable vessels. Fare low. Apply to F. S. CLARKE, next door to the Advertiser Office, London.

The Horse.

DRAUGHT AND ROAD HORSES.

There is without doubt much money lost in the United States in breeding weedy, ill-formed horses, mere screws that are neither fit for the road or farm. We have stated the loss occasioned to the horse stock of the West by breeding indiscriminately to the undersized Morgans, and also to weedy thoroughbreds, and have stated that the best horses for all work we had ever bred were from staunch, able thoroughbreds, upon strong-boned, large, roomy mares.

Mr. A. G. Williams, before the Central New York Farmers' Club, in speaking upon this subject, called attention to Messenger and his descendants. After noticing the Percherons and Clydesdales as noted breeds of draught horses, and also that the farmers of Central New York want a lighter, nimbler horse of from 1000 to 1200 pounds, easy and graceful in their movements and having good trotting action and endurance, a horse that will plow and drudge on the farm, as well as travel on the road, he said:

It is now generally conceded that imported Messenger was the best horse ever in America. He possessed all the requisites of style, speed and endurance, and transmitted his qualities in a wonderful degree to his sons. As some have it, he reproduced himself in his colts. From this horse have sprung three justly celebrated families of horses—the Mambrino Chiefs, the Bashaws and the Hambletonians. "These are the three great trotting families in the world, and from them have sprung Lady Thorne, American Girl and Dexter." The Kentucky horse is large, fully sixteen hands high, "rather coarse in his head and neck, active and cat-like in his movements." The Bashaws are not quite so tall, and are rather coarse and stocky, and of splendid action. The Hambletonians are more beautiful in form and symmetry than either of the other families. The prevailing color is a bright bay, with one or two white feet, with a star or blaze in the forehead. The tail is black, set high up, and is carried like a plume. He has a mild, full eye, wide apart, and a beautiful, muscular, arched neck. The breast is full, and the chest round and well ribbed up. A strong, flat, bony leg, well set on a high hoof completes my description of the horse nearest perfect of any in the world.

With these facts before the breeder, the path of duty is plain. It should be remembered in breeding, to produce the best results the mare should be relatively larger than the horse. A Mambrino Chief mare coupled with a Hambletonian stallion, would produce colts of the highest perfection. The most difficult part of this enterprise is the selection of the right kind of mares, as we have some as good stallions lately introduced into this country as there are in the world. Even without going to Kentucky for brood mares, by a careful selection of one in our own State having the most points of perfection about her, no doubt but that favorable results would follow.

Without doubt the coming horse is the Hambletonian. Now that so much attention is being given to this subject, and good blooded horses readily bring such prices and are so much better to use on the farm or road, we should deem ourselves fortunate that such a noble family of horses has been introduced into Central New York. This stock of horses are far in advance, claiming more of the old Messenger blood, through Rysdyke's Hambletonian and his famous sons, crossed with different strains of blood and such dams as the Stars, Mambrinos, Abdallahs, and thorough-bred mares, have produced great results. It will be remembered it costs no more to raise a good blooded colt than it does a common one. The difference in the service of a first-class and an inferior stallion is nothing as compared with the value of the colts you raise.—Western Rural.

This class of horses is undeniably the most valuable for the race course, but we much doubt their real, practical value for farmers and for the country. What have our papers in the United States and Canada advocated the blooded stock so highly for?

The country requires a heavier horse than 1200. We require an active, well-proportioned, docile animal. The heavy Clydes and stocky Percherons should, in our estimation, if the interests of farmers

and the country is consulted, be brought more into notice. But in every section the blooded stock has its votaries; they are among the speculative class and even monied men who keep stock for gambling.

We think that agricultural papers should advocate the class of most value to farmers. We believe neither the Clyde or Percheron classes are the most valuable for farmers, but the Cleveland Boy stock; they stand from 16½ to 17 hands high, are clean in the leg, have good action, are docile and easily kept. They should be more encouraged.

No farmer that has tried either the blooded stock or the slow Clydesdales, but prefers a medium sized horse for work and for profit. We think our duty as editors of Agricultural papers should be to call attention to the most valuable class for farmers. Let the admirers of the turf advocate the blood, but we require more useful horses. The loss is enormous from breeding too light horses.—Ed. F. A.

Farmers are like fowls—neither will get full crops without industry.

BREAKFAST.—Epps's COCOA.—GRATEFUL AND COMFORTING.—By a thorough knowledge of the natural laws, which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavored beverage which may save us many heavy doctor's bills.—Civil Service Gazette. Made simply with Boiling Water or milk. Each packet is labelled—"James Epps & Co., Homoeopathic Chemists, London." Also, makers of Epps's Milky cocoa (Cocoa and Condensed Milk) 72-1-y.

Farmers' Markets.

LONDON.—White wheat, \$1.10 to \$1.20. Red winter wheat, \$1 to \$1.10. Spring, \$1.18. Barley, 50c. to 53c. Peas, 55c. to 60c. Oats, 42c. to 46c.

TORONTO.—Fall wheat, \$1.10 to \$1.20. Spring wheat, \$1.16. Barley, 60c. to 61c. Oats, 48c. Peas, 60c. to 61c.

Provincial, Agricultural and Industrial EXHIBITION FOR 1873.

THE PROVINCIAL, AGRICULTURAL AND INDUSTRIAL EXHIBITION for 1873, open to the world, will be held in the CITY OF MONTREAL, on TUESDAY, WEDNESDAY, THURSDAY and FRIDAY, the 16th, 17th, 18th and 19th September next, on the GROUNDS, MOUNT ROYAL AVENUE.

Prizes offered, \$12,000 to \$15,000.

For Prize Lists and Blank Forms of Entries in all the Departments, apply to GEORGES LECLERE, Esq., Secretary of the Council of Agriculture, 63 St. Gabriel Street, Montreal; or to the Secretaries of County Agricultural Societies.

Entries for Stock will not be received after the 20th August, and in the Industrial Department not after the 6th September.

The principal Lines of Railway and Steamboats will carry stock and articles for exhibition at reduced rates.

For further information apply to the undersigned GEORGES LECLERE, Sec. of the Council of Agriculture. July 11. Aug & Sept.

Address for Price List and description, P. K. DEDERICK & CO., ALBANY, N.Y. BALES HAY without Tramping or Stepping.

THE P. K. DEDERICK PERPETUAL HAY PRESS 7-11



IS A BALD, WHITE-CHAFFED RED WHEAT. IT STANDS THE WINTER WELL, IS STIFF IN THE STRAW, IS OF GOOD QUALITY, and yields a better average crop than any other variety. We find this the most profitable. It answers well in all parts of Canada, and on all soils; the best crops are from the strong clay soils. This is the only kind we purpose sending out this year. We have tried it against the Diehl, Treadwell, Weeks, Rapahano, Mediterranean, Midge Proof, &c., and pronounce it the best we know of. The other varieties may now be procured in any section by those preferring them. The present price of the Scott Wheat will be for 4 or sample packages, sent per mail, post-paid, 20 cts.; 50 cts. per peck; \$1.75 per bushel. In lots of 10 bushels and over, \$1.50 per bushel. Peck bags, 12 cts.; cotton bags, 45 cts. The above prices may vary if the general market value of wheat alters from the present prices. Address W. WELD, London.

CENTRAL EXHIBITION, 1873.

\$8,000 Offered in Premiums!

WILL BE HELD IN THE TOWN OF GUELPH ON THE 16TH, 17TH, 18TH & 19TH OF SEPTEMBER, OPEN TO ALL

PRIZE LISTS AND ENTRY PAPERS can be had at the Secretary's Office, Guelph, and also from Secretaries of other Societies throughout the Province. G. MURTON, Secretary. JOHN HOBSON, President. Guelph, Aug. 15, 1872. 7-11

PUBLIC SALE OF SHORTHORNS

INCLUDING "22nd DUKE OF AIRDRIE," Bred by MR. ALEXANDER of KENTUCKY, and 20 FEMALES, many of them of PURE BATES' BLOOD; also Young Bulls,

BEING THE ENTIRE HERD OF Lt.-Colonel J. E. TAYLOR. Will be sold without reserve on FRIDAY, 12th SEPT., AT 2 P. M. PUNCTUALLY.

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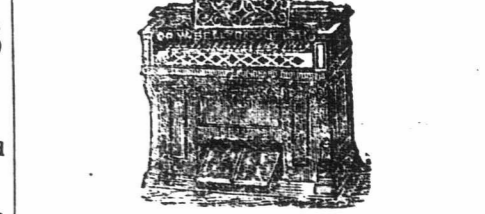
JOHN B. TAYLOR, LONDON, ONT.

Aug & Sept

The FARMER'S ADVOCATE, edited in London Ont., D. C. Terms, 1 per annum, if in advance; \$1.25, if in arrears; postage prepaid. Advertisements 10c. per line, agate space. Communications and advertisements should be in the office by the 15th of the month to ensure insertion in the following number. Postage and all other expenses charged on collect-on of accounts, if in arrears.

PROVINCIAL EXHIBITION of the AGRICULTURAL and ARTS ASSOCIATION OF ONTARIO, to be held at LONDON on the 22nd to 29th September, 1873. Persons intending to exhibit will please take notice that the Entries of articles in the respective classes must be made with the Secretary, at Toronto, on or before the under-mentioned dates, viz.:—Horses, Cattle, Sheep, Swine, Poultry, Agricultural Implements, on or before Saturday, August 23rd. Grain, Field Roots, and other Farm Products, Machinery and Manufactures generally, on or before Saturday, August 30th. Horticultural Products, Ladies' Work, the Fine Arts, &c., on or before Saturday, September 14th. Prize Lists and Blank Forms for making the entries upon, can be obtained of the Secretaries of all Agricultural Societies and Mechanics' Institutes throughout the Province, Hugh C. THOMSON, Sec'y Agricultural and Arts Ass'n. Toronto, July 23, 1873. Aug & Sept

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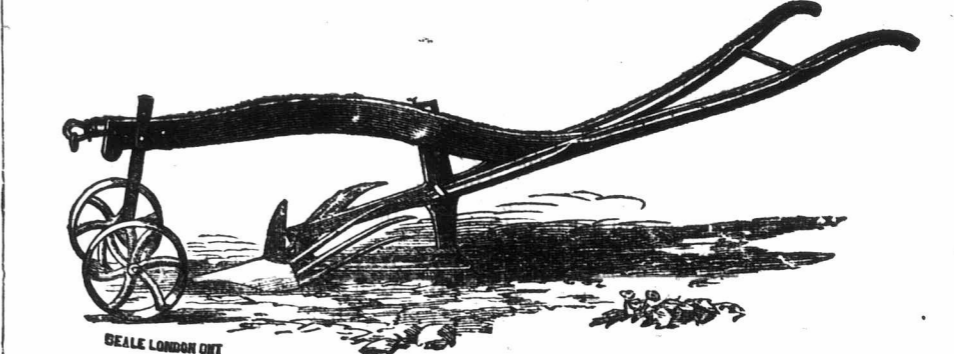
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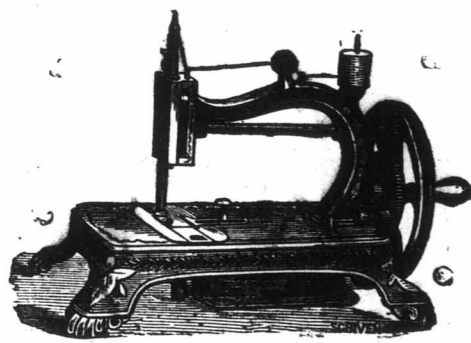
IS REALLY A GOOD, EFFICIENT IMPLEMENT, AND WILL DIG FOUR ACRES OF POTATOES IN ONE DAY, and do the work well. This implement has been vastly improved, and will pay for itself in one season, where many potatoes are raised. It will pay to purchase one if only one acre is raised, as it will far more than save the interest of money, wear and tear and carriage expenses to any part of Ontario. Any quantity of references can now be given from those who are perfectly satisfied with them. Price of Digger, \$18—placed on board the cars. Address R. DENNIS, the Manufacturer, London, or W. WELD, Canadian Emporium, London.



THE SCOTT WHEAT

IS A BALD, WHITE-CHAFFED RED WHEAT. IT STANDS THE WINTER WELL, IS STIFF IN THE STRAW, IS OF GOOD QUALITY, and yields a better average crop than any other variety. We find this the most profitable. It answers well in all parts of Canada, and on all soils; the best crops are from the strong clay soils. This is the only kind we purpose sending out this year. We have tried it against the Diehl, Treadwell, Weeks, Rapahano, Mediterranean, Midge Proof, &c., and pronounce it the best we know of. The other varieties may now be procured in any section by those preferring them. The present price of the Scott Wheat will be for 4 or sample packages, sent per mail, post-paid, 20 cts.; 50 cts. per peck; \$1.75 per bushel. In lots of 10 bushels and over, \$1.50 per bushel. Peck bags, 12 cts.; cotton bags, 45 cts. The above prices may vary if the general market value of wheat alters from the present prices. Address W. WELD, London.

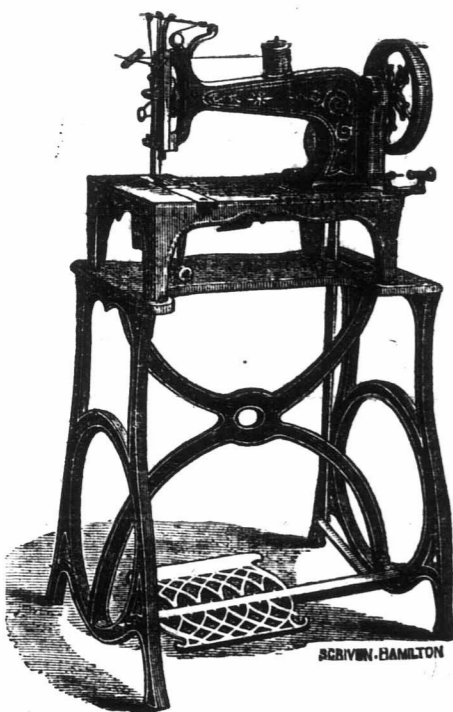
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Hand Machine. Price \$25.



No. 1. Plain Top. Price \$32.



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Manufactures all kinds of Agricultural Imple-
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CANADIAN SIFTER FANNING MILLS,
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ONE HORSE PLOUGHS, TURNIP CUTTERS,
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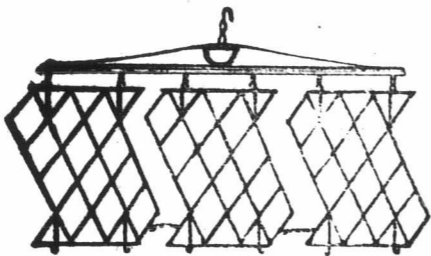
The attention of farmers and others is called to
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of iron, sows two rows, and runs the canister with
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MILLER'S GREAT TEA WAREHOUSE,
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Local Agents Wanted.
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IRON HARROW.

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It leaves the ground finer, works freer, and adapts
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side. It can be worked with a span or three horses,
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They are giving entire satisfaction.
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Price of two sections and one coupling tree, \$22.
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Taylor's Burglar Proof Safes, \$60, \$678.
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AGENTS CAN MAKE FROM FIVE TO TEN
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NEW IMPROVED CHURN DASHER.
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TIMOTHY and CLOVER SEED: all KINDS of
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modates itself to the heaviest article of bedding
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and when so, easily repaired, being constructed in
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In witness of the above read the following:
We, the undersigned, having used Mr. Hilton's Pa-
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| No. 1 Bell, 15 inches diameter—yoke & crank... | \$ 8 |
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warranted one year. Encourage home manufacture
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throw aside those dinner horns, which cause the
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WHOLE WINTER STOCK REDUCED.

Now for BARGAINS
AT THE
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the best in the World. CHEAP at
CRESSALL'S PENITENTIARY STORE,
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Paid-up Capital.....\$1,000,000
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And all the principal Cities and Towns in Ontario
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Offers unequal facilities to those engaged in the
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Securities on reasonable terms.

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Affords opportunity for safe and remunerative in-
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SILVER & SILVER-PLATED Ware in Great
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WRIGHT'S PRACTICAL POULTRY KEEPER
COLOURED PLATES,
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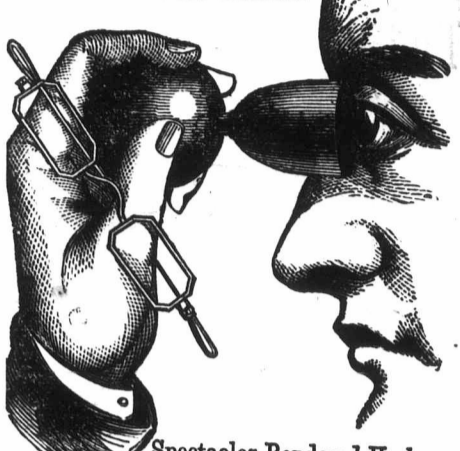
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