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{ WILLIAM WELD,
Editor and Proprietor }

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CONTENTS OF SEPTEMBER NUMBER.

EDITORIAL:—

The Ontario Agricultural Exhibition, 129; Seed Wheat, 129; The Railways Again, 129; Notes from My Garden, No. 2, 130; Pasturing Too Much, 130; The Phylloxera, 130.

POULTRY YARD:—

Healthy Hen Roosts, 139; Helping Chickens from the Shell, 130; Coops for Fowls, 130; Cheap Poultry Yard, 131; Manure from One Fowl, 131; Profits of Poultry, 131; To Prevent Gapes, 131; Dysentery in Chickens, 131; Lime for Fowls, 131.

STOCK AND DAIRY:—

Value of Sheep, 131; Scab in Sheep, 131; How to Manage a Breeding Bull, 131; Food for Hogs, 131; English System of Feeding, 131; In-and-Out Feeding, 131; Hog Disease, 131; Get the Best, 131; The Strippings, 131; Price of Butter, 131; Treatment of Milch Cows, 132.

The Harvest of 1873, 132; Science and Agriculture, 132; The Canadian Agricultural Emporium, 132; Tom Thumb Melon (illustrated), 132; Epizootic, 132.

MISCELLANEOUS:—

Steam Ploughs in Europe, 132; Excellent Whitewash, 132; Location of Buildings, 132.

AGRICULTURAL:—

Wheat Culture, 133; Shaving the Meadows, 133; Value of Orchard Grass, 133; Sowing Grass Seed Alone, 133; High and Low Farming, 133; What is Good Farming, 133; Seed Farms, 133; Ploughing Deep and Shallow, 134; Agriculture in the Island of Jersey, 134; Islands, 134; Cause of Rust on Wheat, 134; Handly Hay Rack, 134; White Clover as a Honey Plant, 134; Alsike Clover, 134; American Corn for Export, 134; The Potato Blight in England, 135; Farming in the Western States, 135; Agricultural Exhibitions, 135; The Potato as Food, 135; Draining, 135; Swamp Muck, 136; Silver-Spangled Hamburgs (illustrated), 136; Top-dressing Wheat, 136; The Kohl Rabi, 136; Experiments in Curing Hay with Lime, 136; Creditable Farming, 136; Experience the Best Instruction in Agriculture, 137; The Toronto Nurseries (illustrated), 137.

GARDEN, ORCHARD & FOREST:—

Value of Planting Ornamental Trees and Shrubs in Home Grounds, 138; Orchards in Grass, 138; How to Water Plants, 138; Cultivating Fruit Trees, 138; The Protection and Planting of Forest Trees, 138; To Protect Young Trees from Mice in Winter, 138; Thin Out the Fruit, 138; Damaged Timber, 138; Honey Locust for Hedges, 139; Remedies for the Canker Worm, 139; Training Grape Vines, 139; Summer Pruning the Grape, 139; The Cucklebur, 139; Curculio on Fruit Trees, 139; Transplanting Forest Trees, 139; Propagating Shrubs by Seeds, 140; Fruit Crops, 140; Preparing Slips for Plants, 140.

THE HORSE:—

Spavin and Curb, 140; Loss of Horses in New York, 140; Horses may be too Large, 140. GARDEN & FARM:—Hints for the Month, 140. THE APIARY:—Bees on a Small Scale, 140; Bee-Keeping, 140.

UNCLE TOM'S COLUMN, MINNIE MAY'S DEPARTMENT, Markets and Advertisements, 141, 142, 143, 144.

The Ontario Agricultural Exhibition.

The work of renovation and addition to the buildings is progressing favorably in this city, and a good Exhibition may be safely expected.

We have visited some of our breeders since our last issue, and glanced over some of their stock. The greatest competition will be in Durham cattle. The most important and attractive feature will be the competition for the Prince of Wales' Prize for the best bull and five of his calves.

It is our impression that the crowd will be so great around the Durham ring at that time that it will be difficult for people to obtain a good view of the animals. Perhaps it might be well to increase the size of the space allotted to showing the Durhams, when the prize is to be awarded. We would say to the officers, crowd and to the most fastidious ladies: Make a point to see the cattle ring when the judges are awarding the Prince of Wales' Prize.

To the committee of management we would say: It is your duty to make such arrangements as will afford opportunity to visitors to examine things that are of interest; take care that the public can see this part of the Exhibition. To the committee of management we would also suggest that the doors of the Exhibition building be kept open from 8 a. m. till 6 p. m., and not be closed for two or three hours in the middle of the day to accommodate a Prince or a Governor. The public have paid their money, the gates are advertised to be open, and the palace should be kept open. We well know the Governor, Prince or any other gentleman would not desire the palace to be closed against the public for two or three hours on their account, just at the time thousands are expecting to enter it.

Mr. S. White set the best example to future and past Presidents; when the demand was made to him to clear the palace and close the doors against the public at Hamilton, he withheld his consent and allowed the public their right, and he also made arrangements that were quite satisfactory to our illustrious visitors, namely, to enter the building early on the following morning. We heard great and just complaints from the public in this city when the doors were closed for a length of time in the middle of the day. The public that have paid their entrance fee have a right to enter the Exhibition building at any reasonable hours, unless the building is advertised to be closed on any particular day.

To mechanics desirous of showing their machinery in motion a better opportunity will be furnished this year than previously,

as motive power will be on the grounds, with rods for such a purpose. Manufacturers must furnish their own pullies and belting. This will make the machinery far more attractive.

Seed Wheat.

We have traveled nearly a thousand miles in Canada for the purpose of examining the wheat in the ground, and since threshing commenced we expected from some reports to have been able to speak of Arnold's new hybridized wheat, that gained the \$50 prize, but after examining the crops of it we are unable to recommend it to our readers.

It was killed badly by the frosts of the past winter and spring. The yield will not average one-half as much as that of the Scott wheat; notwithstanding this, some hundreds of bushels will be sold at high prices. Mr. Arnold is still trying to bring out fresh varieties; perhaps he may yet succeed in procuring a variety as good as he says he can. If he should succeed we would all be benefitted, but success in new enterprises and undertakings is precarious.

There is a wheat grown in Yarmouth which is called there the Dominion Wheat; it is a white chaffed wheat, thickly set in the head, like the old China wheat; it is bearded, is a winter wheat, and is spoken well of where it is raised, but from all accounts we do not think it as safe as the Scott wheat.

In some sections the Treadwell is doing almost as well as the Scott, and some prefer it.

There are some good pieces of Diehl wheat, but if the acreage of wheat sown and the yield per bushel is estimated, the Diehl wheat will show a most deplorably low average, lower than any other except the Soules; yet, in some sections really good crops are obtained.

The Mediterranean has yielded a fair average, but in the sections where the Scott wheat has been introduced, it appears to be gaining favor.

We can speak from experience. My boys sowed a field part with Treadwell and part with Scott wheat; the Treadwell yielded 20 bushels per acre, and the Scott yielded 32 1-2 bushels. The Treadwell had yielded well in our section until the Scott wheat was introduced.

We did not raise the tenth part of enough to supply the demand this year; we therefore are obliged to fill orders from the best lots we can find. Some may not be quite as clean as they ought to be, but until we command more land and capital we cannot send out things quite as good as we would like. Our price will not allow us to handpick it this year.

The Railways Again.

One of our subscribers, an able and enterprising farmer, made the following complaint to us a few days since:—He has been in the habit for many years of coming into this city by the London & Port Stanley Railway from White's Station. The price charged for his ticket has always been 62½ cents. This road has now been leased by the Great Western Railway, and is managed by that monopolizing institution. When coming into town this time he was required by the Station Master to pay 68 cents for his ticket. He remonstrated, stating what had been the regular price, and as the G. W. R. on leasing the road agreed to retain the old prices, he was entitled to pay only the same amount. He was roughly told by the official that he was an Ass.

Now, we know that this farmer is not only a straightforward, upright man, but belongs to that class of men, the Quakers, who are so invariably quiet and unassuming in their manner, and are not given to abuse or annoy any one.

Now this is only one instance out of the millions in which our farmers are abused by the officials of our railway monopolies, and we feel compelled, in the interest of the most valuable and yet most imposed upon part of the community, to protest against such actions.

Because we may not be dressed in broadcloth or have overcoats cut according to the latest fashion, we are to be very thankful that we are allowed to look at our finely dressed, well-fed servants. Who is it that supports these railways? Who is it that pays the bonuses with which these roads are built? Who provides the grain and the cattle which compose their freight? Or who feeds the pretentious middlemen who look down upon us?

If railway officials and other public servants do not very shortly show us more respect of their own accord, we will be compelled, as farmers, to arise in our might, as our brethren in the west are now doing, and then we will find these officials, from their highest to the lowest, trembling for their positions, and begging us to be lenient with them.

We have the thing in our own hands. Who are the majority of voters in this country? Why the farmers? And who ought to rule the country? Who ought to be making the laws? Let railway officials and politicians, sleek-faced middlemen and well-fed public servants beware, or they may some day wake up and find, as they now have across the borders, that the farmers can and will have their rights, and all these blood-suckers be brought down to their proper position.

Extortion and insult on the part of railway or any other officers will not be allowed to have its swing much longer.

There were imported into Colorado in the last year eighty-seven pedigree Short Horn, Jersey, Hereford, Devon and Galloway bulls; twenty-one stallions, and four hundred and fifty-six Merino, Southdown and Leicester bucks.



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Notes from my Garden—No. 2.

In my last letter in speaking of potatoes, I made the remark that we were all agreed that small potatoes were not good for seed. Now I wish to qualify that assertion. On account of shortness of seed, I was compelled this Spring to use about half a bushel of very small Early Rose potatoes for planting.

I was rather in doubts as to what my crop would be, fearing that although I might have quantity, the quality would be poor. I was, however, agreeably surprised to find that the potatoes were both numerous and large; in fact, as fine a crop as I ever had. It may be that the deterioration would not be apparent in one year; my seed was probably from good stock of the previous year. It is quite possible that if I planted the present potatoes next year, I would be more able to see the diminution in size. It has certainly been always my experience, that "Like produces like."

POTATO BUGS.

We were in a great fright in the beginning of the year about our striped friends. Just as soon as the potato leaf appeared above ground it was attacked, and in many cases eaten off, and away down in the ground by the side of the stalk we could find our friends at work. You could even see them straddling the fences, in order to have a good outlook and get the first chance at any unfortunate potato which arrived above ground. Many of my neighbors gave up the potato crop as a bad job and let the bugs take possession. I, however, am an Irishman, and cannot get along without my national diet, and also being of a pugnacious disposition determined to have a fair fight for it. I used both Vermatosa and Paris Green, and am thankful to say, came off victorious.

BUTTER BEANS.

Do you know the broad white bean which bears this name? It is delicious eating and very productive. I planted a row of them along the back of my house and trained them up all over it. They will make, I should say, a vine of about 20 feet long, covered with broad green leaves and great clusters of very large pods. The beans are eaten shelled like peas, and are beautiful. The vine would be nice to cover an arbor, or to shade a house.

TURNIPS.

When my peas and lettuce and early potatoes came off the ground I was determined not to allow it to lie idle, and therefore sowed it with turnips, White Stone and White Globe. They are doing well, and I will have a capital second crop off my land. I often wonder why farmers don't often seed turnips after they take off the fall wheat. What fine food they would make for the cattle during the fall; for the sheep especially.

SOWING SEED IN THE FALL.

As an experiment, I will this year sow Carrots, Parsnips, Lettuce and Onions late in the fall, and let the seed lie in the ground over winter. I have heard good reports from some gardeners about the fall sowing of Parsnips. I have myself had some of my best Lettuce from self-sown patches, so I don't know but the other seeds may likewise do well. Of course I will work up the ground very thoroughly in the fall, and have channels for the surface water of the spring to escape readily. In the Southern States onions cannot be grown from seed in one year. Early in the fall the seed is sown, and small bulbs or sets are formed which are taken up and planted out the following year. This is the right way to manage the Italian varieties of onions in this country.

PEAS.

I tried the Early Rennie Pea this year and like it. It is both early and productive. The seed is small but one of the wrinkled kind, and is a good size when green. It is sweet and well tasted. Some of my friends sowed peas late last fall and had a very early crop this year. I may possibly try the same experiment. In a garden you must stake your peas. It is a slovenly practice to do otherwise, and also a wasteful one. Use the trimmings from your trees and bushes, or go to the woods and get proper stakes. They will last a long time if care is taken of them.

CORN FOR FODDER.

I notice an article in your last number, advising the use of sweet corn fodder in preference to Western corn fodder, and I agree with you most decidedly. Let any person taste the two and he will not hesitate to choose the sweet corn. Of course it will not produce the bulk, but it is the right article to make milk and butter with. I notice in some of my American papers that the leading dairymen there are in accord with you on this subject. Undoubtedly the bulk in the Western corn will be the poor farmer to worry through the winter, but the profits from the sweet corn will answer better.

NEW SEEDS.

It astonishes me that our farmers do not go more extensively into new seeds. It is so evident that all who do so make money out of it that there is no excuse for neglecting. It takes but a few more bushels to the acre of any grain to more than repay the extra expense of the seed, that it ought not to require such extra inducements to introduce a good article. Just see, for instance, this SCOTT WHEAT, which you have been instrumental in introducing. I know farmers who sowed it alongside of Treadwell, which is its-If a good wheat, and actually obtained ten bushels to the acre more from the Scott than the Treadwell. These may be exceptional cases, but I know that they occur very frequently.

Next month I will be better able to get reports from my experiments, as I will then be getting my crops stored away for the winter.

PASTURING TOO MUCH.

A correspondent of the Country Gentleman writes to the Country Gentleman on pasturing too much as follows:—

"Good, permanent grass lands, sure for a fair yield of hay or pasture, cannot be pastured to the best advantage. A portion of the growth that may be secured for hay is lost in a pasture. Land covered by droppings of stock cannot produce grass, and the rank growth surrounding it will be left. The hoofs of cattle, especially of horses and colts, tread out and prevent the growth of not a little grass. And then, unless the field is fed very close, more or less will get old and dry and not be eaten at all, and strange as it may appear, land improves faster when in meadow than when in pasture. The growth in a meadow makes a thicker and better sod and a much larger growth of grass and clover roots, and both are left to gradually improve the soil. True, this depends in some measure on the treatment the meadow receives. If fed closely from the time the hay is removed until winter and, perhaps, to some extent in the spring there may be very little improvement, while the grass will be more likely to run out. If not fed close and something is left to protect the soil and grass plants in hot weather as well as through the winter, the crops will be better, the grass hold out longer and the improvement of the land be more sure and decided.

"It may not be well to leave too large a growth on the land through the winter, at least not enough to smother the plants or induce mice to live and work under the dead grass; but this is seldom the case—most farmers err the other way. Perhaps two cuttings for hay—one early and the other not far from the first of September (the fall growth being left on the land)—will do well.

An acquaintance of many years with some of the best grass lands of the Old Country has led us to form opinions very different from those of the correspondent. We have known grass lands to pay in fattening cattle a clear profit of from three to six pounds sterling in five months. It is true those parts covered by the droppings of the cattle and the rank grass surrounding these spots were left untouched by the cattle for the season, but the areas occupied by them was comparatively trifling, and the next season these places produced the most luxuriant grass, highly relished by the cattle. They were so productive that it was estimated that they paid well for the few weeks or months that they were not grazed on. Some stock feeders had these little mounds of dropping scattered over the fields when the cattle were changed for a time to another pasture, and then, when they were in the course of rotation, taken back to the field so treated. The fertility arising from the droppings was equally distributed, and no little spots were so rank as to remain ungrazed. Some of this grass land I knew that had been so pastured for fourteen years, some over twenty and some still longer, and the pasture, so far from deteriorating, was, if there was any change, improving, though the improvement in it was scarcely perceptible. It was never eaten very close, and what remained old and dry served as an excellent mulching during the winter, and the result was that the land so treated gives the earliest good, rich pasture the following May and during the summer.

So far from hay enriching the land, as pasturing it did, meadows required periodical top-dressing to keep up their productivity. Whenever it could be done, as was not infrequently the case with low bottom meadows, they were irrigated; but, in most cases, they were top-dressed with composts, ashes or farmyard manure. There seems to be an impression among not a few in this hemisphere that pasturing instead of enriching the land tends rather to its impoverishment; but that it is improving by pasture is the conviction of those who have the most experience in agriculture. So well known is this to farmers and farm laborers that they speak of improving land by pasturing it—the familiar expression—"Letting the land rest." It is true land can be kept in a high state of fertility while tilling it successively, as in a system of rotation, as we have here now recommended, but this can only be accomplished by manure being applied liberally and frequently; and it is said that, notwithstanding the high farming necessary in such a system, the land will, after the lapse of some years, be the better to be let rest. May not nature during this period of rest be exerting necessary recuperative powers. Why is it that pasturing land enriches it and mowing the grass for hay impoverishes it? Every crop of grass or anything else takes from the land at least a portion of plant food. This is carried away off the land in hay; it is returned to the land in the droppings left by the cattle pastured on it, and by a fertilizing, though unseen, substance communicated to the soil through the pores of the animals. Their very lying on it serves to enrich it; how much more their droppings!

The Phylloxera.

The Garden gives the following practical direction respecting that destructive pest of the grape vine, the Phylloxera, or grape root louse.

Sulphuret of calcium dug in around the roots of vines is considered to have a powerful effect in destroying Phylloxera. This gives rise to a true sulphuric acid, in consequence of the moisture of the soil, and the gentle disengagement of carbonic acid. It serves also equally well to destroy caterpillars and other injurious insects, which are frequently so difficult to remove from vegetation.

This insect is said to have given more trouble to the growers of vines in America than by any other disease or enemy to which it is subject.

Effects of the severe winter in Iowa. A correspondent of the Gardener's Monthly says fully one half the young apple trees in North Western nurseries were killed by the winter.

Arborvitae is transplanted in this part of the world all through the summer season. The earth has to be tightly packed round the roots, and this tight packing is not merely a light performance by heel and toe, but a ramming as if one was setting a post. If the weather be dry, or likely to be dry, water is given with the plant at planting. Unless the season is a very extraordinary one, or the situation very dry, they will grow at any season. There is some risk in all.

Metallic soap for canvas.—The following is recommended as a cheap and simple process for coating canvas for wagon tops, tents, awnings, &c. It renders it impervious to moisture, without making it stiff and liable to break. Soft soap is to be dissolved in hot water, and a solution of sulphate of iron added. The sulphuric acid combines with the potash of the soap, and the insoluble iron soap. This is washed and dried, and mixed with linseed oil. The addition of dissolved India rubber to the oil greatly improves the paint.—Journal of Applied Chemistry.

Milk Poison.—For a long time it has been observed that the milk of cows, drinking from stagnant pools and mud holes, soon becomes bad and is the fruitful source of floating curds during hot weather. In St. Lawrence county a noted dairyman stated to us that during a certain dry season, he was unable to make good butter from the milk of his cows, yet his neighbors had no difficulty. His cows were not well provided with water, and the cows were forced to drink from sloughs and frog-ponds. He tried for a long time to discover the cause of the trouble in his butter, and at last suspected that it came from the water the cows were drinking. Then he sunk a well and obtained an abundant supply of good clear water for his herd, and he had no difficulty in making sweet butter and as good as could be procured by his neighbors.—Moore's Rural New Yorker.

Mr. G. Martin, whose sale of Ayrshires is advertised in this paper, desires us to state that his intention is to sell annually a number of Ayrshire cattle at each Provincial Exhibition in Ontario. The stock will be sold without any reservation whatever, and no one will be employed to buy in. Mr. Martin considers Ayrshire cattle decidedly the most profitable for Canadians, and the only cattle that can be wintered sufficiently well on straw and turnips, and give a profitable flow of milk the same season.



POULTRY YARD

HEALTHY HEN ROOSTS.

If we would keep poultry in a healthy state during the winter, the henery must have its house-cleaning as well as the dwelling house. Clean out the nest boxes, and whitewash them inside and out, ready for another spring; and when fresh hay or straw is put in, sprinkle a handful of flour of sulphur into each; paint the roosts well with petroleum (oil) or kerosene.

Clean out all the earth underneath the hen roosts, and sprinkle fresh sand or oam over the whole floor of the room. If this is well attended to every autumn, there will be no danger of diseased, vermin-covered poultry, but the whole stock will be in a healthy condition. Next see that there is a good supply of pure water every morning for their use.

There is a receipt for keeping fowls healthy, which has been sold under the titles of "Universal Poultry Drops," and "Poultry Keeper's Friend," and its use has been found very beneficial for all kinds of poultry. To half a lb. of sulphate of iron add one ounce of diluted sulphuric acid, and pour it into two gallons of water; let it stand fourteen days after bottling of water, every other day, and let the fowls drink it freely. Chickens should have the same amount about twice a week.

The effect of this stimulant is soon apparent; the feathers of the birds will assume a rich, glossy appearance, and the whole flock will be in the best possible health and spirits. If poultry are affected with the dry roup, this remedy will prove a cure, and will ward it off from flocks that are not tainted. With a little attention to cleanliness, large flocks of poultry can be kept free from disease, and either fattened for market or so fed that they will give a bountiful supply of eggs.

At this season of the year it is well to let the fowls have the run of the orchard and the garden, and they will destroy quantities of worms, bugs and other insects. A hundred fowls in a quarter of an acre will do good service to the horticulturist and the gardener, and lay a large number of eggs, which are always a cash article and desirable in the kitchen and on the table.—Country Gentleman.

HELPING CHICKENS FROM THE SHELL.

Many of our best books on poultry discourage any attempt to assist a weak chicken when its own efforts to burst its prison walls are ineffectual. It is urged that any excitement; about the nest worries the hen exceedingly; that the operation is an exceedingly delicate one, not to be readily or hastily performed; and that even when the poor little creature survives at the time, it will not live to maturity.

With regard to that objection, we say, when it appears that part of the brood have been hatched some time—twelve hours, perhaps—let the mother with the chickens already out be furnished with a fresh nest where they may have a little food within reach. If an egg has been "chipped" and no further progress made, take a pair of sharp pointed scissors and cut up to the blunt end of the egg, and in that vicinity remove one-third of the whole shell, but do not draw blood; then place what remains in the nest under the hen. Our experiments have shown that with this treatment death was an impossibility; the probability, life and strength.

The writer once employed this method upon an egg after it had been "chipped" and laid wholly unovered for fifteen hours. In six hours the chicken was on its legs, and afterwards grew to be a heavy, healthy bird. A chicken which is too feeble to hatch naturally must surely die if assistance be withheld; and the other hand, there is every reason to expect that nature will rally when encouraged and stimulated by the co-operation of man, and that we shall be rewarded for our trouble with that satisfaction which results from the saving of life.—Journal of the Farm.

COOPS FOR FOWLS.

A Vermont correspondent of the Country Gentleman says he has kept his fowls during the summer, for the last five or six years, in portable coops on the grass moving them each morning. He finds the plan both convenient and profitable. His coops are cheaply and easily made. They are twelve feet long by four feet wide on the ground, the sides running to a point at top. About four feet at one end is enclosed for a roosting place, and less space at the other end for nests. To strengthen the sides he nails a strip half way up on each side, the ends of which extend so as to form handles for moving the coop. In such a coop he keeps from 10

to 12 hens a run at large during most of the coop.

Set posts eight feet apart from post to post; three wires ground; and from the ground take common inches space the fence; pick like a chicken down beside under wire.

This material is tight. WI interweave World.

Lewis W. try writer, plings of weighed estimate, 13 bird, but oz. On amount per flock of 50 the manure respects; ton, the m \$25 per acre worth a re or who pr It should mate is n takes no a in the day is lost by of poultry; everything devising

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TREATMENT OF MILCH COWS.

Brindle loves to be handled, but by a gentle hand. This touches her domesticity, of which she has a large share. If this is abused or neglected she will suffer. She will especially not give so much milk, the lactreai or maternal seeming intimately related to the domestic. Hence, where cows are herded, or neglected, or abused, they are less profitable than those that receive the opposite treatment, as is usually the case where but a single store is kept. Such a cow is petted and made, as it were, one of the family. She is seldom fat, though in fair flesh, giving milk largely in proportion to the food she consumes; that is, she is disposed to give milk rather than to take on flesh; and this is precisely what the dairyman wants—he wants all the milk he can get for the amount of food he feeds. If his food is expensive, there is less gain, sometimes none at all, sometimes loss. But this need not be. To feed largely of grain will never realize large profits. Grass is the cheapest, not as pasture, but cut and fed, in the way of soiling. When we say grass we include clover. This plant is the cheapest growth on the farm; it realizes most, getting so largely from the atmosphere, and ammonia at that. And clover it is found is the best plant for soiling; it may be cut the season through, the small or medium kind quite early. Rye may be used a little earlier. Clover in all its earlier stages of cutting—and it should never be done later than full blossom—is better for being a little dried or withered; it should never be fed with the dew or rain on; whether for pasture or for soiling, as bloat is threatened in such case. We know this by experience, having lost several cows, and the best are apt to be taken, being the most greedy feeders. The best way is to mix clover with one or more of the grasses for pasture; clover alone, or mostly, for soiling; and clover, or clover and well cured corn stalks, for winter. This is the practice of some of our best dairymen, and is a success. Soon as the corn is glazed it is cut and put up so as to cure well and yet be protected from the rain. This is the cheapest feed, and affords a full amount of milk, dispensing with the dear grains, oil meal, &c. It also enriches the land at the same time.

To treat Brindle kindly, and give her this food, which she will relish if properly secured, will realize the most profit. A large herd should be divided, and the unruly members kept or disposed of. Clean stables, with soft (finely-littered) floors, ventilation, yet sufficient warmth to prevent suffering, and ready access to good water, are elements that cannot be dispensed without sacrifice. Dairying is much as we make it.—*Utica Herald.*

As to wintering dairy cows the first thing needful is a good, warm, comfortable stable, well ventilated, and supplied with plenty of straw for bedding. The cows should be fed regularly; let it be either twice or thrice a day, with good nutritious food, salted every other day; and, finally, good, pure water at their pleasure. Treat them kindly, keep them clean, milk fast and at a regular hour, and allow no talking while milking. Never wet the teats, as it is considered, above all things, the most filthy, causing them to crack. Give a few bran mashes before and after calving. Always take the chill off the water given to the cow for a day or so after calving.

The Harvest of 1873.

We are unable as yet to give a complete report of the produce of the year; but from all we can learn the crops, though they cannot be called abundant, are much heavier than was at one time anticipated. From the G. W. R. returns we glean the following summary:—Of 67 places reported from, the fall wheat, in more than one-half of them, gives a yield of 25 bushels or over. Spring wheat generally a very light crop. Hay generally light. Potatoes, where the ravages of the bug have been prevented, give a good return, especially the early potatoes. Apples not so plentiful as last year. Plums a failure. Cherries and strawberries have been abundant. From Nova Scotia and New Brunswick the reports are favorable. The hay farmers are promising themselves a highly remunerative season, as, from the light hay crops in the New England States, it is expected to be high. The latest reports from Europe are rather favorable, though England will need large additional supplies.

The apple crop in Wisconsin is not likely to be an average one, but the other kinds of fruit grown there generally promise well.

Science and Agriculture.

FROM AN ADDRESS AT A MEETING OF THE ONTARIO TEACHERS' ASSOCIATION BY PROF. WILSON, OF TORONTO.

Lastly, as regards Agriculture, it is chiefly of importance to note that this subject is not a science at all, in the strict and proper application of the term. Agriculture is what is sometimes, though improperly, termed an "applied science." It is an "art." In other words, scientific agriculture consists in the application to husbandry of the sciences of chemistry, natural history, botany and geology. These sciences can, as regards their elements, be taught with profit in schools, but agriculture can only be learnt on the farm, and should find no place in ordinary school education, nor, indeed, in any course of study which cannot be carried out and enforced practically.

We are pleased to find the opinion we have always entertained on Collegiate Agricultural Education borne testimony to by so high an authority as Prof. Wilson. Let the young man preparing to pursue the profession of agriculture get as good an education as possible. Let him, if he can attain to such studies, learn the subsidiary sciences, nor think any branch of learning unprofitable; and let him study agriculture on his father's farm, receiving the benefit of his experience. Or if from any circumstances it be deemed fit that he should have another instructor in the art of farming, let him serve an apprenticeship to the profession to one who understands it thoroughly, and is successful in its practice. Such a course would make a good farmer. We would say, in addition, let not the want of the thorough instruction (attained to by this system) prevent others from the pursuit of the art. Though they who are so trained have an advantage over others, all who have a willing, resolute mind may eventually succeed. They can profit by the experience of others. "Where there is a will there is a way." The writer of this advice, when a boy, imbibing his first love of agriculture from reading and translating Virgil's Georgics, had his first lessons in practical farming from an illiterate farm laborer—lessons not forgotten to this day. There is nothing more useful in agriculture than the habit of observation. Indeed, to this habit the world is indebted for many of the most important discoveries of science.—Ass. Ed.

The Canadian Agricultural Emporium.

As the farmers' busiest season is now passed, the evenings are lengthening and money begins to return from the results of the season of toil, more time can now be devoted to reading and laying plans for future operations.

The charter for the Emporium was granted by the Legislature of Ontario at its last session; it was published in the June number of the *ADVOCATE*. Turn again to that paper and read the charter carefully; you will see that you may be benefitted very materially by being a shareholder, and that you could not be injured beyond the amount you subscribe for, if you should invest in it.

Circulars have been sent to the County Clerks and to the Wardens of each county in Ontario, in regard to it, but very few of the County Councils have as yet taken any notice of them, or have reported to us in regard to them. The County Council of Wellington has left it over for further consideration, and Oxford County has also taken a similar step; in Kent there has been a desire expressed by some to endeavor to secure it in that County; from Brant we hear that it was thought the Government Farm would be sufficient, but glorious York Township Council has eclipsed all others in tendering the first requisite the law grants to the institution. We happened to be at Eglington just as the Council was sitting; we addressed them briefly regarding the Emporium. The Reeve at once said we could safely depend on having what land was required for the institution free from taxation, if that township should be selected as the place for the site, and further stated that should the Directors of the Agricultural Emporium desire to select land in that township, further aid might be relied on. The

Council gave their united consent to this favorable offer.

It is rather remarkable that the whole of the councilmen of the Township of York are either Reeves or Deputy Reeves, and all sit in the County Council. We heard from the Reeve of York that no circular had been before their County Council regarding the Emporium. Our clerk addressed one to each Warden and County Clerk, and they were duly mailed. This is to be regretted, as perhaps other County Councils have not had them, or perhaps some may have omitted to notice them in the hurry of business.

Subscribers to this paper in sections that might be suitable for the Emporium to be established in, might enquire of their Warden or County Clerk regarding the circular.

We believe that the Canadian Agricultural Emporium, carried on by farmers that have an interest in it, will be of far more advantage to the country than the Government Farm, and we feel quite sure that it may be made as profitable as any other investment in Canada. The farmers of Canada will soon be sick enough of the Government Farm, and will vote it down as a most gigantic sink for their money. That institution was intended to entirely quell this little enterprise, the Canadian Agricultural Emporium. The *Ontario Farmer* was to have superseded the *FARMER'S ADVOCATE*, but both are gaining strength; the *ADVOCATE* doubled its circulation when the Government paper existed, which paper could only live on public money extracted from us by taxation.

The Agricultural Emporium we feel sure, will, with the support of the farmers, gain the ascendancy of its rival, the Government Farm.

It is in contemplation to form two companies, one for carrying on the paper, the other for the Emporium. If you desire to join either of them, you will do well to let us know immediately, as stock books will soon be open.

Tom Thumb Melon.

We procured a few seeds of this melon from B. K. Bliss & Sons, of New York.—We now have two hills growing; they are remarkably small, but handsome. We



expect to exhibit a few among the fruits at the Exhibition. If no one else has any there we shall not enter for a prize, but show it merely to let you see this little novelty. We do not think they will be much sought after by consumers, as they are so very small. They may be delicious but we have not tasted them yet.

We would call the attention of stockmen to the sales advertised in this paper. Col. Taylor, near this city, has a herd that in regard to pedigree, stands unsurpassed in this western section of Ontario.

Mr. Stone's stock has such a wide reputation, and as he is about to give up his farm to the Government, the sale will be largely attended by Canadians and Americans.

EPIZOOTIC.—A correspondent of the *Live Stock Journal* cured this disease in three days by giving one tablespoonful per day to five fowls of the following epizootic mixture: 1 oz. spirits of nitric ether, 4 drs. laudanum, 3 drs. nitrate potass, 1 pint water; mix well.

Miscellaneous.

STEAM PLOUGHS IN EUROPE.

In a report to a Farmers' Club in England, the manufacturers of the Fowler plough say:—

We are making about 100 plows a year for the English market, and about 50 or 60 for foreign countries. They are principally of the double-engine class. About two-thirds of those sold in England are let out on hire, and one-third for private firms. Steam cultivation is very much retarded in this country, because little or nothing is done to assist it in the shape of roads, enlargement of fields, etc., so as to make the farms more suitable for the use of steam power. About 50 of our steam ploughs are working in the district of Madgeburg, Germany, in the cultivation of beet-root for sugar. The best grown on steam-ploughed land shows a gain of about 2 per cent. of sugar, and about 20 per cent gain in the weight per acre. This has induced all the sugar-cultivators to employ steam. They usually work to a depth of from 12 to 15 inches, but never less than 12 inches.

EXCELLENT WHITENASH.

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.

LOCATION OF BUILDINGS.

The point which determines a man's comfort or his misery may often centre in the position of his dwelling. Of almost equal importance to a farmer is the relative position of his barn and stables. Buildings generally last a life time, and therefore the selection of their sites should be a matter of mature deliberation and study. The healthiness of a site first, then its convenience, and then its picturesqueness and the beauty of its surroundings should be considered. An elevated site, with ground gradually sloping in all directions, is the most desirable. It should be sufficiently distant from the road to afford privacy and freedom from dust and noise, also that room for intervening shade and ornamental trees may be secured. Together with that most pleasing and grateful of all household accessories, a green, smooth-shaven lawn. The outbuildings should then be placed so that the milk pail can easily be carried to the dairy, that the horse stable may be within hearing distance, that the dairy may be convenient of access, that the lanes separating the buildings may not be cut up into mud in spring or fall, or drifted full of snow in winter. In short, a man should not blindly copy his neighbor's plan without considering its adaptability to his own surroundings, and the configuration of his own ground.—*N. Y. Tribune.*

We see by our American exchanges* that the remnant of the Modoc Indians, who are now prisoners in the hands of the United States authorities, are all to be hanged. These Indians were defending their rights after their own manner. They had been continually swindled by the Government agents, and at last rose in arms. They made a bold fight, but at last gave in to numbers, and now they will be hanged for it. Why cannot the United States authorities borrow a leaf from our book. We have no trouble with the Indians—just because we try to keep our bargains with them honorably. Assuredly the swindling agents deserve hanging more than the poor Modocs, who were only fighting for their rights. Cannot our exchanges use their power in defending the poor aborigines, and not allow such a blot of dishonor to tarnish the pages of American history.



AGRICULTURAL.

WHEAT CULTURE.

Wheat requires, more than other grains, a good preparation of the land. It requires a deep soil, and will permit of no water standing in it. This is from the nature of the grain, which is dainty, yet hardy, standing the winters well; but it wants a good lodgment in the soil, deeply mellow, thoroughly mellow, porous and breathing, letting the water down and the moisture up. If the soil is a clay soil, or one that packs close, hugging the plants snug, all the better; this is the experience with this grain. If, further, the fertility is old, this is what the plant requires. It requires well prepared nutriment, though it will feed upon coarse material, rank manure, but it will be at the expense of the quality of the crop—there will not be the bright straw or the plump berry. I have had the same experience when sown upon soil.

All this points to a carefully prepared soil, and the fallow meets this; also a cornfield, or where roots have been raised, or a clover lea where the soil is not only enriched, but also made mellow by the crowd of the roots. The clover roots, when well decomposed, form a good pabulum, and available, as they are well distributed through the soil.

Stubble turned down, and but one plowing given the land, is in general not satisfactory, though I have known good wheat follow barley, but because the land for barley is better prepared than for oats and other spring crops.

All seem to be pointing, as a principal thing, to the condition of the soil. Peas leave the land in a friable condition, without abstracting much from its richness, if indeed any, as the stubble and debris of the plant as well as the root afford considerable material for plant food in this respect, and in others related to clover when the crop is matured, as when left for seed. Some of the very best of wheat I have known has been raised on such land, a heavy crop of peas being removed, and then a single plowing given, leaving the land in fine condition. Especially was this the case when the spring crop was grown on soil which turned up mellowed and rotten, and in clay was sufficiently compact.

Fertility comes next to a properly prepared soil, and ripe, as we have said. With the fallow there is of course the best chance to use manure; get it well mixed with the soil and rotted, making, indeed, soil of it. But those who have no fallow may still do something on other good soil. Harrow the land well if stubble, and give a chance for the seeds to sprout. Then turn down and apply manure. Nothing so good as well rotted compost or any decomposed material. Spread evenly over the surface and harrow well in. Here will be a comparatively clean and mellow, as well as rich seed bed. Grain sown will start at once, in a fair season, and start all and uniformly, and establish itself well. The manure applied will mostly do this. Even if the land is not an "ash-heap," but slightly harsh or lumpy, I have known it to do well, get a good growth well rooted, and a fine crop following. The soil had the strength, and there was depth of looseness below.

Unless pains be taken, there is no use in attempting to grow wheat; it won't admit of luck. There must be richness, and there must be preparation of soil. The past winter was a very severe test. The fall was bad, the winter was bad, and the spring was bad; the weather following was favorable and gave us a fair head and a good berry. A few fields well put in and on good soil, fenced by woods on the north and west, had a good yield; others, without the protection of the woods, did well; but in such cases all were on dry or drained soil, and were put in well. Wheat will stand a good deal if it has all the advantages of a thoroughly prepared soil, of the right kind, and with sufficient richness. Drilling in the seed is preferable; and on rich ground rather late sowing, say middle of September. This will give a good covering and establish well the plant without causing it to shoot up. And even if the fall is quite unfavorable, and the winter and spring to match, as we have just experienced, there will still be a good set, in a good, rich, warm, mellow soil, without water standing in it. It is not likely we shall soon have another such

a winter, including fall and spring. We are more likely to have a warm, growing fall, in which case it would be imprudent to sow early.

The last of September would then be the time, and even later has succeeded. But the course between must be aimed at, and that will put it about the middle of the month. Where the land is not strong, and no manure has been given, a little earlier sowing would perhaps be preferable. Where there is waste straw, this can be put on with profit. On poor, and especially exposed land, it is a decided advantage, protecting the grain, and feeding it during the season following. But avoid putting wheat in poor land, badly prepared. If it is wished to seed down such land, do it without the grain, thus getting a crop of grass, or better, clover, the same year, instead of a light grain crop, which is sure to follow, and which will also be an impediment to the young grass or clover.—*Country Gentleman.*

SHAVING THE MEADOWS.

A correspondent of the *Country Gentleman* discusses the question why the hay crop is growing lighter from year to year. Among other things he says:—Another reason has been whispered, which is this: That on account of the great competition among the different mowing machine manufacturers, as to which machine will shave—yes literally shave—the surface of our meadows the closest, the roots of the grass are really and permanently injured in leaving them bare, and thus very liable to be frozen out absolutely. We believe a good deal of clover is killed out in this way, the crowns being sliced off to the very roots. Close mowing of grass, like close cropping of the human hair, is a very senseless practice. The "velvet cut," as it is called, which makes men with dark brown hair look for all the world like monkeys, deprives the head, to all intents and purposes, of its natural protection. So "shaving" the meadows deprives them of their natural mulching, which is such a protection against the droughts of summer and the rigors of winter.

VALUE OF ORCHARD GRASS.

Hon. Lewis F. Allen, Black Rock, N. Y., says:—

We have a field of it, on a strong, clayey loam, which has stood for more than thirty years. It has been cut for soiling; it has been cut for hay; it has been pastured; which it long ago run out, and although the white clover and blue grass venture their presence to a limited extent among it, the orchard grass retains its supremacy, and breast high at maturity, lords it over its diminutive trespassers in a bounteous crop, while its humbler attendants, good in their place, modestly fill up a great nutritious undergrowth at the bottom. No grass which we have ever grown has yielded so heavy swath as this, nor one from which so much cattle food to the acre can be grown, aside from Lucerne, which our American climate will not consecutively, year after year, produce.

SOWING GRASS SEED ALONE.

Mr. Charles L. Flint, the well-known writer on grasses, advocates their seeding alone, and generally late in summer or fall, and asserts:—

1. That early fall seeding without grain should be adopted in practice in preference to seeding in spring.
2. That, as a general rule, it is poor economy to take any grain crop either with or immediately preceding the seeding down to grass. That the grass being the ultimate and paying crop, it is bad practice to reduce the land by the draft which a grain crop makes upon it.
3. That, wherever from any local reason it becomes desirable to take a crop of spring grain, it is more economical to sow the grain alone in the spring, and to plow up the stubble and sow the seed alone in the early fall.
4. That in cases where it seems desirable to sow grass seed in spring, it is better to sow it alone and let it take its chance, without compelling it to struggle for existence under the disadvantages of a grain or any other crop.
5. That in seeding down in August or early in September, we are following nature

as to time, and that, unless the ground is already rich and in high condition, it is necessary to give the seed the benefit of an application of manure on or near the surface to which the seed is applied.

6. That, in the selection of seed for mowing lots and hay, we should choose varieties to mix that blossom at or nearly at the same time, and not mix very early and very late varieties together.

These propositions are clear and easily understood. I believe their adoption and application in practice upon every farm would largely increase the grass and hay crop, and materially promote the prosperity of our agriculture.

HIGH AND LOW FARMING.

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.—*Western Rural.*

WHAT IS GOOD FARMING?

In an address delivered to the farmers of New Jersey by the Hon. James W. Wall, he alluded to the enormous increase which has taken place of late years in the agricultural produce of England. Less than a century ago the entire production of wheat in this country fell short of 16,000,000 bushels. In 1870 the yield exceeded 100,000,000, averaging thirty bushels from each acre devoted to this staple. Mr. Wall pointed out the direct agencies by means of which this increase was brought about by the English farmers.

In the first place, he said, it is to be found in their systematic attention to all the requirements of good farming, in the skill and exactness with which all the operations of plowing, harrowing, clod-crushing, burning and scarifying are performed; in the perfect condition of "tilth" to which they bring the land preparatory to the reception of the seed; in the careful selection of the best varieties of seed wheat; in the extensive and prudent use of their barn-yard manure; in the perfection of all their instruments of tillage; in the strength and discipline of their draught animals; in the assiduity with which they extirpate every weed and remove every rock that can interfere with the cultivation of the land. Nothing is left to casualty or to chance.

No expectations are indulged that the bounty of Providence in an unusually favorable season will atone for their short-comings and neglect. Everything which human foresight, scientific skill, intelligence, well directed labor and mechanical aid can accomplish is done, to insure the highest yield from the land.

It is next to be seen in the extraordinary liberality with which they restore to the earth, by means of purchased manures, all those elements of fertility which are exhausted in the process of cultivation.

It is estimated by chemical analysis that wheat absorbs forty of every hundred parts of nutriment contained in the soil. Now, some idea of the enterprise of English agriculture may be formed, added Mr. Wall, when I state to you that in a single year, the year 1837, the first year of its general use as a fertilizer, the foreign bones imported were valued at the custom house at \$1,500,000, since which it is estimated that the amount paid for imported bones alone amounted to \$150,000,000. Since 1841 upwards of 1,500,000 tons of guano have been used.

Mr. Wall also spoke in high terms of the English system of drainage and the rotation of crops. "I believe," he remarked, "that nothing more perfect in rural economy can be conceived than their rotation of root and

grain crops. The root cultivation has indeed been the salvation of England. With as much truth as force has it been said that the power of the British empire rests upon her coal, her iron and her turnips."—*Farmers' Monthly.*

SEED FARMS.

We have, through the country, numerous seed gardens, to raise seeds of vegetables and flowers for the market and family garden, and the parterre, but we have not many—if any—seed farms devoted to raising seeds of grains, and grasses, and vegetables for the farmer. Is not there a demand for such an institution?

Farmers are well aware that under the present system of every one saving his own seed, there is a constant tendency to deterioration in varieties, until after a few years they find themselves obliged to change varieties to restore the maximum yield of their crops.—Now, this would be unnecessary were proper care exercised to keep up the quality and purity of the seed. Were the seed raised from year to year on land in the best condition, free from foul weeds and all impurities carefully weeded out, and all defective shrunken grains screened out, there is no good reason why the crops should not improve from year to year, instead of deteriorating.

There are many reasons why farmers will not, and perhaps cannot go to the necessary labor and expense of keeping their seeds pure. They do not employ laborers enough. They have so many kinds of labor driving them up through the short season when these things can be attended to, that they are obliged to neglect some; and then the practice of employing itinerant threshers to thresh their grain with their machines, is a means of distributing impure seed. Undoubtedly our best farmers have done a great deal towards improving their seeds by careful growing, weeding and assorting, yet they have found it troublesome, and would gladly pay an honest and reliable man to raise their seed for them.

A seed farmer should be a man of energy, intelligence, enterprise, and integrity, with sufficient capital to farm high, and wait for remuneration until he should build up a reputation. He should be able to purchase his seeds from sources where he would be assured of their genuineness, and thoroughly test their value before offering them for sale. He should be too shrewd to be imposed upon by humbugs, and too conscientious to impose upon others. He should begin by selecting the largest, best developed, most perfect heads of grain, ears of corn, or tubers of potatoes, and should he make the raising of the clovers and grasses a part of his business, he should start by selecting the most perfect specimens of those species. Having started right he should keep right. He should scrupulously weed out all foul weeds, and all false seed that might by any accident have become mixed with the true. He should use no threshing machine used by others, and if he were to use the same machine for threshing different varieties, he should clean it thoroughly before going from one variety to another.

After a seed farmer had taken so much pains to produce pure, well-developed seed, he should receive a liberal compensation therefor. The purchaser could well afford to pay twice as much for such seed as grain for milling or feeding should be worth, and such rates would probably be a fair compensation.

We are aware that we have failed to point out all the requirements of a successful seed farm, or to enumerate all the advantages to result from such an institution. We are confident that the general establishment of such farms, in such numbers as to fully supply the farmers with pure seed, would do much towards the improvement of farming in this country. It indicates a low state of farming when the farmer carries his grain to market full of foul seed, shrunken grains, or several varieties mixed, and it is one of the best evidences of high farming when all his grains are put in the market clean and pure. Will not our readers give this subject a careful consideration, and see if it does not indicate a way for the improvement of farming?

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.

PLOUGHING DEEP AND SHALLOW.

The method commonly practiced inverts the soil to an average depth of four or five inches, and may properly be termed the "superficial method." The results are generally unsatisfactory as to the yield of crops, ruinous to soils, impoverishing the land, leaving him who practices it little, if any, better off at the end of the year. A transformation of wealthy, it leaves the soil as much poorer as it has added in dollars and cents to the purse of the owner, and the tendency is to deplete the land. Another method practiced but by few, differing from that just mentioned only in depth, may properly be called "trench plowing." It inverts the soil to the depth of from seven to twelve inches, carrying the surface mould down to the depth of the plowing, and burying whatever may rest upon the surface far below the reach of young plants. It brings to the surface the hitherto unused portion of the soil, and the least productive, for the reason that it has never been subjected to the complete action of the air and its fertilizing influences. Sufficient time is not given during the growing season to render it fertile, and the crop languishes for want of needed nutriment, and ere the plant roots have penetrated to a sufficient depth to reach the substances which have been buried so deeply, the season has so far advanced that their assistance comes too late. The disappointed farmer is often led to the belief that deep ploughing "does not pay," and the advocate of deep ploughing together with the system is condemned.

The objections to this system is that too much time is consumed in fertilizing these under strata and rendering them productive. The use of the best portion of the soil is lost by being buried beyond the reach of the plants, and is also rendered the less productive by being mixed with the weak sub-soil, while it consumes so much power as to place it out of the reach of most farmers to accomplish. The redeeming feature in this method is, that if the farmer has the patience and means to hold out for a few years, he will so completely mix the surface mould with the sterile sub-soil that the whole mass becomes tolerably productive, while he obtains a depth of ploughing which shields him against the withering influences of summer droughts, or an opposite extreme. Similar results are accomplished with the "double plough," the first plough cutting off the surface mould and placing it in the bottom of the furrow together with whatever may be upon the surface. The second plough covers the furrow of the first with another portion of earth, brought up from the bottom of the trench. This, by some, is improperly called "sub-soiling." It is nothing more than "trench-plowing."

Another method of plowing land, and by far the best in all respects, is called "sub-soiling" proper. It differs from "trench plowing" in this, that while it breaks up the sub-soil, it does not bring it to the surface.

The reasons for its adoption are so numerous and varied that they cannot be condensed within the space of a newspaper article. A few only will be noticed in this communication.

Its adoption leads man to labor in harmony with the natural formation of the soil. He finds upon new lands that the surface is always the most fertile. He finds a reason for this in the fact that it has been long exposed to the action of atmospheric influences; that there has been returned to it each year, rich deposits of decayed vegetable matter and gaseous compounds from the air. In other words, a complete system of exchange has been carried on. Vegetation has been nursed to maturity, has given back its solids to the earth, while its fluids have mingled with the air from whence they were drawn. The immutable law of exchange has never been violated and the soil maintains its fertility. Man's art leading him in conformity to this law, teaches him to labor in harmony with the natural formation of his soil, and to observe this just law of exchange. His adoption of a system of "sub-soiling" proper, keeps the surface mould on top, applies his manures to the surface, that their strength may be applied to the immediate wants of the plant he cultivates.

It leads to a proper economy in the expenditure of his power. Why should he tax his team beyond their strength to invert a solid foot of earth when better results may be obtained and the same depth reached with less power? To invert a solid foot of earth requires a given amount of power. Raise the surface plow to within six inches

of the surface, and nearly one-half his power has been saved. Attach the sub-soiler to his plow and the remaining six inches of sub-soil will be completely broken up, while his dynamometer will show that a less power has been applied than when drawing the surface plow twelve inches deep. Mercy prompts him to adopt sub-soiling.

Manure is more properly disposed of, both as to being speedily rotted and being kept near the surface. The surface plow buries it sufficiently deep to prevent the escape of the fluid parts, while the combined action of plow and sub-soiler, places it between two bodies of loose, moist, warm earth, surrounding it with elements of moisture, heat and air, the combined action of which is necessary to its speedy decomposition. Buried to a depth of one foot, it is deprived of heat; moisture and air only being present in sufficient quantity, it will not rot; moisture, heat and air present and it speedily decomposes.

Lying so near the surface the material is constantly giving out to the plant a timely supply of nutritious food, hastening its growth, and ere the drouth of summer overtakes it, the plant is fortified against its withering effects.

Other considerations will be noticed in the future.—*Farmer, in Iowa Homestead.*

AGRICULTURE IN THE ISLAND OF JERSEY, CHANNEL ISLANDS.

The island contains about 39,000 acres, and has a population of about 57,000, of whom more than one half live in the town and its suburbs, and perhaps one-fourth of the remainder in the little villages on the different bays. These statistics are not without their significance, for I believe that there is no isolated country out of Asia where the population is so dense, and where the prosperity of the people depends so entirely on the products of the soil. There seems to be almost no manufacturing of any sort, and very little commerce that does not depend finally upon the agricultural products of the island. Nowhere are small farmers so rich and so comfortably placed, and nowhere do the people at large seem to live in such an easy and economical state of comfort and elegance. Owing to the very favorable climate, agricultural operations are carried on throughout almost the whole year, and early potatoes (the most profitable money-producing crop of the island) are sent to the London market long before even those of the southern part of England. The farms are generally owned by the occupiers, but where rented they bring often the enormous price of fifty dollars per acre per annum, and that for a whole farm, usually from twenty to fifty acres, including orchard, pasture-land, and much that must be comparatively unprofitable. General agriculture is almost universal. Every farmer raises for market more or less fruit, and a good field of potatoes, besides large crops of grass and roots for his cattle, and often a little wheat. The cows hold a prominence in their system of cultivation that quite justifies their notoriety in the rest of the world. According to the last statistics there were over twelve thousand horned cattle, or nearly one to every three acres of the island. Probably twenty per cent. of this number are yearly exported to England and America, bringing to their owners a cash return of fully one hundred dollars each. The butter, which they produce in plentiful quantity, and always of good quality, as the grass is green the whole year round, is mainly sent to the London market, and to the English and French residents of the island.

The agriculture of the whole of Jersey is a good example of what we know as "high farming." A very large amount of labor and manure, and deep and thorough cultivation constitute the secret of the success that seems to attend the operations of every farmer. Such crops are produced for an average over the whole island as are known here only in exceptional cases. Land being high and hard to get, the little that a farmer can control is made to do double and treble duty. I had occasion to see a good deal of the interior life of the farmers, and found them generally more comfortably housed than the average of the farmers of New England, and they seemed to be living with more profusion of luxury and elegance than would be considered consistent among men of equal wealth in our rural districts, while the great number of new and somewhat pretentious houses that are being erected indicate a prosperity that one would hardly expect to see among such small cultivators.—*Heath and Home.*

CAUSE OF RUST ON WHEAT.

The close, long-continued analytical researches of Dr. Sprengel led to the conclusion that no excess of iron salts, and especially of the phosphate of iron, greatly favors the growth of 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 the 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 permanent evil, and transformed, as by magic, a mineral poison into plant food of inestimable value. To decry salt analysis by skillful chemists is shallow quackery—a weed that finds too much favor with American farmers.

HANDY HAY RACK.

Our wagon-rack is made from good pine plank, two inches by ten inches, the sides are mortised through three inches from the ends, so as not to split out, the ends are tenoned to fit the sides and pinned with a wood or iron pin. (Let the ends of the tenons run through one inch). The bottom is made of inch batched board firmly screwed or nailed to four inch battens, four or five inches wide; the two centre ones project two or three inches each end. Then to the side belts should be rivvited to run down through the battens with the nuts below, which will make a very good, strong box, which will carry grain or sand, potatoes or manure, without leaving a track three feet covered with whatever your load may be. The bottom should be made the full size of the sides, and in the centre in front cut a mortice, close to the end of the box two by two inches, to receive the end of the standard, which should be two by three inches, fastened to the box. This can be removed in one minute. Now takesome good sound scantling, free from knots, two inches by three and seven feet long, four pieces for each side, place them in pairs across the box; one pair each end; one pair just forward of the hind wheels and one pair between, then fit the ends to the sides and bottom, cutting a mortice for the end of each stick half an inch deep on the sides of the box to prevent the rack from tipping over; now place each stick in its place, and bore a half inch hole through the centre of the cross, and put half inch carriage through. Take boards five inches wide, and lay three on each side, making the rack as wide as you want it, and fasten the boards on with carriage bolts. These never shake loose. Be careful to get the scantling spaced the same on the ends as at the bolts in cross, otherwise the rack will not fold up nice. Trim up the ends and paint it, and you will have a nice handy rack. When the wagon is wanted, go to one side and raise up the rack, throw it over upon the other side, then take the bottom end and tumble it out of the wagon and stow it away in the shed. When wanted, load it on just as you took it off. One man can handle and load it in three minutes ready for use, standard and all.—*Rural Home.*

WHITE CLOVER AS A HONEY PLANT.—An English writer says:—White or Dutch clover is the queen of honey plants. It is widely cultivated in this country, and continues to flower a long time. In Scotland the farmers use more white clover seed in laying down the land in grass than the farmers in England, hence the clover fields are better there than here. And the use of lime and bone dust as manures has a great influence in the production of clover. In travelling to Edinburgh some years ago by the Caledonian line, whole fields white with clover-flowers caught my eye, and made me take a second look to see if the whiteness came from daisy-flowers. Whole districts, unsurpassed for excellence, met my eye during a visit to my native land, many of which hardly ever received a complimentary visit from bees, and for this reason, that there were no bee-keepers in these districts.

ALSIKE CLOVER.

As there are numerous enquiries concerning Alsike clover, I will give my experience in raising this most valuable plant. It is only a few years since the seed was imported from Sweden, where it has been grown in the native pastures for many years. The plant bears a greater resemblance to the common white than to the red clover. It yields two mowings annually, if cut expressly for hay when in full bloom, which, in this latitude, is generally the last of June or the first of July. But if cut for seed it should stand about two weeks later, then affording abundance of superior pasture for all kinds of stock. The seed is cut from the first crop. The Alsike, when left to seed, has its stalks and leaves yet green when its seeds are ripe, and produces much better hay than the red clover when it is cut for that purpose.

The weight of seed required to be sown is from 3½ to 4 lbs. per acre, which is an abundance. The seed being much smaller, a less quantity is required than of the red clover. Four pounds of Alsike will seed more land than ten pounds of red clover. The seed is sown at the usual time of sowing common red clover, on wheat, oats, rye or barley. It generally yields from three to eight bushels of seed per acre. The head is formed with pods, like common white clover, with several seeds in each pod.

I have tried Alsike by the side of red clover four successive years, seed sown at the same time and in the same field, and find that horses, cattle and sheep will not graze on the red clover so long as they can get a good bite on the Alsike. My experience is—there is no other clover equal to it for the purpose of feeding cattle, sheep and horses, and I believe it to be equal to the red clover as a fertilizer. It will flourish on both dry and moist land—does not suffer from the severest frosts or drouth as red clover does—is as free from fuzz or dust as timothy; hence it will not cause horses to cough or heave as red clover hay does. It will grow from 1 to 2½ tons of superior hay to the acre, according to the season.

I think I never had a greater growth of red clover than I raised four years ago, growing from three to five feet in length. Alsike has many more branches, leaves and blossoms from the main stalk than red clover; the hay is therefore much finer and far superior in quality. In fact, it is of the same nature as the common white clover, (which all farmers will understand), except growing to much larger size. All farmers know, who have had any experience, that common white clover pasture is far superior to any red clover; therefore, if it would grow large enough to mow, it would make much better hay than red clover. Alsike clover blossoms furnish an abundance of honey for bees. They can work on them as well as on the common white, and can gather honey much faster.

To sow the seed, mix the quantity of seed with the quantity of plaster you wish to sow per acre evenly, and sow as if sowing plaster, except on smaller lands. In so doing you sow your seed at the same time that you sow your plaster, saving the labor of going over the field twice, and it can be sown much more evenly. As the seed is so small and such a little quantity is required per acre, it is difficult to hold the quantity in the hand or fingers that is required if sown by the hand. Plaster should be sown as a fertilizer, as on red clover.—*E. T. Bryan, in Country Gentleman.*

AMERICAN CORN FOR EXPORT.—The Pittsburgh *Commercial* says the low price of corn in the United States seems to have created a large foreign demand for the staple instead of wheat. According to a late report of the Bureau of Statistics, there was exported 51,931,282 bushels for the 15 months ended September 30, '72, against 19,441,716 bushels for the corresponding period to September 30, '71; while of wheat there was shipped 46,961,355 bushels for the 15 months ended September 30, 1871, against 36,872,712 bushels in the similar period to September 30th, last year. The difference in the present rates of wheat and corn is considerably greater than it was during the period to which these statistics refer, and it is probable that the present summer will show a still larger increase in the foreign consumption of the latter important breadstuff staple.

A farmer in the neighborhood of Prentiss, Mich., had a valuable horse killed lately by Paris Green, which had been applied to potatoes as a preventive of bugs. Soon after the application one of his horses ate off the potato vines, and was found dead the next morning.

THE POTATO BLIGHT IN ENGLAND.

Dr. Kidd has spoken out boldly relative to the potato disease, which is bidding fair to become a national calamity, not only in the destruction (to an enormous extent) of our supplies for next winter, but in its influence on the crop of 1873. After pointing out the fallacies of the various remedies which have at times been prescribed, Dr. Kidd remarks:—

"It strikes me that there is no virus, or disease, or error of thunderstorms, but that the plant has been over-cultivated, and the farmer who will go back to plain seedlings and plant the potato early will escape much of the blight. The natural rotation of crops—three or five or whatever the farmer knows is best—is done away with in too many places, and what lands turned into permanent grass have given up the potato to inferior land. Seedlings are got from the berries, of course, of the potato blossom. They are rather waterish at first, but by cultivation, as nature in her wonderful way stores up starch for the germ, they become dry and mealy, with more vitality. This vitality is what the plant wants. There is too much starch in the sets now planted. The power of assimilating or ripening the sap in its return from the leaf and forming fluid starch or cabium is diminished. The black 'spot' on the leaf is probably the effect not the cause of the disaster. The general upshot of what one can make out among farmers is clearly towards earlier and better planting of the good old tuber; more science or system as to the rotation of this and other crops; less science of the starch-grating or beanstalk kind, which would upset crop rotation; and trust to no crops but more cattle, and to potatoes got out of any worthless patch at haphazard. The potato, rather, in a physiological sense, requires as nice soil and managements as a tulip bulb. We know what a half-boiled bulb of a tulip would turn out; so of our present scurfy potato plants or 'sets'."

Careful storing for seed is a subject of deep importance on which I wish to say a few words. In many districts of Yorkshire, Lancashire and other counties, especially where local flower shows exist, cottagers, as a rule, hold back a few seed potatoes, which they place in shallow boxes with one end of the tuber upwards, and these are exposed to the air or kept in some cool place, but preserved from frost. These are allowed to "sprout" early in the spring, and are planted with short sturdy roots attached to them. This plan is also adopted in many private gardens, especially where there is accommodation in the form of sheds, spare shelves in the fruit room or under a dry stage of a greenhouse.

It is not so easy for farmers who plant extensively to adopt this plan, but it is a question for their consideration whether it would not pay them to give their earnest attention to this subject. The present system of storing seed potatoes in pits is a fatal mistake if they are allowed to remain there after the end of January or early in February, and has been one of the chief causes of the fatalities attending the potato crop.

I will take as an instance the winter and early spring of this year, when the weather was very mild generally, and potatoes grew very early in the pits. In a great number of cases the potatoes had sprouted so much that the sprouts were torn away from the tubers, certainly once, and in some instances, more than once. The same thing occurred when large quantities of potatoes were stored in heaps under cover, this sweating and premature formation of sprouts and their destruction tending to weaken the constitution of the tuber, and causing the "blindness" which we often meet with in fields and gardens. I know of instances when sound potatoes encountered this treatment, and where some of these, sold for seed to amateurs, resulting in from 25 to 40 per cent. of "blindness"; that is, failure of the tuber to reproduce itself. I maintain that the storage of our seed potatoes is a question of very great importance, and, in my opinion, we may trace to the improper storage of seed tubers one of the causes why the disease has made so much headway. This has been going on year after year, and is a mistake.

Growers on an extensive scale may ask,—"How are we to store seed for a large quantity of ground if we adopt this plan?" I think that difficulty is easily overcome, as several means for effectually storing seed tubers present themselves—such as utilizing spare space in out-buildings or the erection of potato-

seed sheds, which can be readily done by using fern, heather, sods or any available material for the sides, and thatching the roof with straw, reeds, heath or any waste material, and putting in here and there an old sash for light and ventilation, of course, having doors at the ends also for thorough ventilation. One thing is a certainty—it is as much to our interest to look after our potato crop and prevent disease as it is to expensively house our cattle and prevent disease in them, and it behoves us to be up and doing, and to set our brains to work on what is best to be done.

Another primary cause of failure is to be found in the persistency with which, in so many cases, we plant potatoes year after year in the same ground; in other cases, with only a short interval between the crops of this tuber. We go on year after year manuring for the same purpose, but never supplying the best of all the manures nature has given us—a change of good fresh unused soil. Farmers have it in their power to do this, and probably do change their potato land frequently. There can be no question about the advisability of deep digging or deep ploughing for this crop in dry situations as well as wet, but especially in the latter. It is most desirable that the potato should be relieved from a superabundance of moisture—hence the necessity of providing every available means of relieving the ground as speedily as possible from an excess of moisture. I have a strong conviction that unless this is done the potato when just about arriving at maturity is unable to take up such a great amount of moisture at the root, and that rapid root decay sets in. Does this root decay pass to the tuber, and through the cellular tissues of the haulm to the foliage, where it manifests itself in the spot so familiar to us? I venture to think so, and that disease springs first from a disorganization of the roots, arising from too much moisture there at the period I speak of. I have founded this impression on observing for years past that the disease does not make headway only after much wet followed by close moist weather. I therefore regard drainage as imperative, and the drier the surface can be kept and the more air and light that can be admitted so much the better.—William Dean.

FARMING IN THE WESTERN STATES.

We would ask our Canadian farmers to compare their lot with the profit or loss of farming in the State of Illinois, as given in the statement of Mr. C. M. Smith, a farmer of that State:—

"I have given the matter very careful study for years, and I think I can tell just about how much it costs me to raise a bushel of corn. You may take first the labor. I think any farmer will tell you that it takes a man and a team at least five days to plow, harrow, mark out, plant, cultivate, harvest, and house an acre of corn. It can't be done in less time. Two dollars a day is no more than a fair price for the work of a man and a team. Then the first item of expense is \$10. The land in this county is assessed at \$33.33 an acre; it is worth, unless the sale of the whole of it should be forced, \$40; I refused \$68 an acre for my farm last year. Interest at 10 per cent. on \$40 for one year is \$4.—Fifty bushels of corn to an acre is more than the average of this county. To shell a bushel of corn and haul it two miles to Kewanee, with taxes, the wear and tear on farming implements, &c., costs at least five cents a bushel, or \$2.50 for the crop on an acre. So you see my acre of corn has cost me \$16.50. Corn is now worth in Kewanee 20 cents a bushel. My fifty bushels will, therefore, bring me only \$10. That is, I barely get pay for my labor, while I lose the interest on the money invested in my farm, the wear and tear of machinery, and get nothing for shelling and carting, or with which to pay my taxes.

Again, the bushel of corn has cost me 33 cents. I suppose we can raise corn at a profit for 30 cents a bushel. Our farmers don't expect to get 10 per cent. interest on their investments, though they have as good a right to it as the capitalist or merchant. Then there is one other thing which I did not take into account. The stalks have no cash value, but they furnish fodder for our stock. The only thing that has saved the Illinois farmer from complete ruin and bankruptcy has been his stock. After our corn has been husked, we turn our cattle into the fields, and they will come out in the Spring fat."

Over the entire north of Ireland the crops are reported to look exceedingly well.

AGRICULTURAL EXHIBITIONS.

The primary object of agricultural, horticultural and household exhibition is not merely to award premiums. The great central idea, besides the social and moral development, is that by bringing to one place occasionally animals and articles of superior excellence, as models, so that they can be conveniently seen, studied and compared, every one may have an opportunity of becoming acquainted with the appearance at least of whatever is best and most profitable of its kind—the horse of the fittest proportions, either for work or for speed, the cow best suited for milk or butter or as a breeder, the hog that promises the greatest return for a given amount of care and food, the sheep best adapted to each farmer's circumstances, either for wool or the market or both, and so on through the whole range of stock and fruits, household arts and manufactured products.

Every one by careful enquiry is enabled to learn much of the means by which these best results were secured, and may, perhaps, be put in the way of obtaining their like for his own use and advantage. The chance is offered to see and acquire the most approved of everything in the way of implements, machinery and various mechanical devices for the convenience of the farmer and his working force, for the saving of labor and the better execution of the work. Add to these advantages the stimulus which one derives from the discovery of his inferiority in practical farming and the encouragement another receives from his recognized superiority, and we have some of the special fruits of the industrial exhibition, the planning and management of which constitutes the chief work of the county society.

But aside from these direct and special advantages to the farmer, there are some other fruits which grow out of these annual exhibitions, the indirect benefit of which should not be overlooked. They give encouragement to the mechanical and manufacturing classes by affording them an opportunity to exhibit their inventions and products, and by furnishing an impartial though interesting umpire to pass upon their merits and test their relative values. The direct benefit of this accrues to the mechanic and manufacturer himself, but the farmer also secures advantages—first, by being aided in reaching proper conclusions as to the relative value of things invented and manufactured for his use; secondly, by afterwards reaping the fruits of the inventor's stimulus, in the form of still better machinery.

Finally, the social benefits secured by the intermingling of individuals at the annual county fairs are of considerable importance. They afford temporary rest from overwork—help cure his prejudices—enlarge his views—quicken and strengthen his sympathies with his fellows, and thus better fit him for intelligent co-operation in whatever promises to improve his condition and exalt and dignify his calling.—Western Rural.

THE POTATO AS FOOD.

The Germans as a nation object to the potato as food, and some of their savants have predicted that those nations who make use of this excellent as a principal article of diet will deteriorate both mentally and physically. The German savant, Carl Voight, says that, "the unwholesome potato does not restore the wasted tissues, but makes our proletariat (common people) physically and mentally weak." The Holland physiologist, Mulder, gives the same judgment, and declares that the excessive use of potatoes among the poorer classes, and coffee and tea among the higher ranks, is the cause of the indolence of nations. Leidenfrost maintains that the revolutions of the last three centuries have been caused by the changed nourishment. The lowest workman in former times ate more flesh than now, when the cheap potato forms his principal subsistence, but gives him no muscular or nervous strength.

While it is true that a diet composed of potatoes alone would have disastrous effects upon the people so using them, it is as true that an individual confined exclusively to bread made from wheat flour from which the bran and middlings were taken would as surely become enfeebled and die. The potato, as does wheat flour, consists largely of water and starch. According to Johnston it contains 75.52 of the former to 25.72 of the latter; but it varies, some of the coarser

varieties giving much less than the quantity of starch enumerated by Johnston. It also contains dextrine, sugar, albumen, caseine and fat in small quantities.

The flour from the soft white wheats contains more starch and less gluten and albumen than that made from hard wheat. The fancy brands are especially deficient in these constituents. An analysis of Michigan flour contained—starch 67.70, gluten and albumen 10.00, glucose and dextrine 8.76, the balance being water, bran, ash, &c. The chief value of the potato, therefore, is in the carbon or heat-producing substance it contains, and this is largely the case with fine flour; consequently neither of these should be used except in connection with other food as flesh, eggs, milk, &c.

Man is an omnivorous feeder, and cannot be confined to one diet. Neither is he adapted to subsist upon such articles of food as, great in bulk, furnish but a medium of subsistence—the food must be concentrated. Nevertheless, of all the vegetable substances consumed by the human family, we could less afford to lose the potato than any other except perhaps wheat. Wheat in its integrity probably furnishes the most perfect description of human food of any one substance. While this holds good with the grain ground and used in its entire state, it does not by any means apply when divested of its bran, middlings and other coarser products. We have no doubt but that man would remain longer in health upon potatoes than when confined to bread made of the finer qualities of wheat flour.

The potato is the most universally used of any vegetable in the United States. Its introduction has prevented the famine which used to periodically occur in various countries before this excellent was known. It possesses just the proper capabilities for distending the stomach when taken in connection with other food, and its annihilation as an article of diet would create greater distress among the inhabitants of the civilized world than would that of any other article of human food, wheat excepted. Because it does not contain every requisite for human nourishment is no reason for its condemnation as being unfit for food. In conjunction with other food there is no one single vegetable so valuable to man or which will keep him in such good health.

DRAINING.

One reason why farmers are getting such inadequate compensation for their labor is the low average yield per acre. The remedy for this is to a considerable extent under our control. We must farm better. It is a large area of land under cultivation and the low average yield per acre that is the chief cause of all our troubles. A favourable season floods the market with produce which can hardly be given away; an unfavorable season causes light prices, but we have nothing to sell. A good farmer would have a fair crop even in an unfavorable season. If I had been a good farmer I should have had 200 bushels of potatoes per acre; but, as it was, I had not 100 bushels per acre, and many of these were too small to sell. For the good potatoes I got \$1.06 per bushel, and if I had had 200 bushels per acre and ten or a dozen acres, I should have no reason to complain of hard times. As it is I say, "The weather was so dry that my potato crop was a failure." But, in point of fact, I know that this is not the exact truth. I had a bad crop because I am a bad farmer. If I was a good farmer I should have had a good crop in spite of the drought. This I know, because on one row manured for mangels but planted with potatoes, I had a large yield of large potatoes.

"Draining is all very well," says the Deacon, "but what has it to do with making manure?"

The Deacon plays shy of the drainage question. He has a quantity of low, rich land that is so wet that it could not be ploughed until June. I wanted to tell him that if that land was drained it could be sown in good season and would produce more than double what it does now, and consequently enable the Deacon to double the amount of manure. Draining, better tillage and irrigation are the means we must look to for growing larger crops and making more manure. We have to get the manure out of the soil, and, when we have got it, we must be careful not to waste it.—Talks of the Farm in the American Agriculturist.

The Army Worm has committed great damage on the oat crop in some parts of Illinois.

enquiries concern- give my experience able plant. It is seed was imported has been grown in many years. The e-embance to the the red clover. It ally, if cut expressly om, which, in this last of June or the t for seed it should ater, then affording asture for all kinds cut from the first left to seed, has its green when its seeds ch better hay than s cut for that pur-

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SWAMP MUCK.

Its value—for what soils—how to be applied.

If the farmer had barn, pen and yard manure enough no other would be needed. In this are all the elements of plants and all the properties suited to mellow the soil physically. With this, and a little lime to quicken its action and to neutralize the acidity of wet, sour soils, he could improve his land to almost any extent, and there would be an end of the manure question.

If, in the lack of home manures, he resorts to the portable mercantile manures, this is well so far as mineral ingredients are considered, but there is a deficiency of organic matter. Manures must be in large quantity as well as of good quality. There must be organic matter—animal, or vegetable, or both, and there must be enough to affect the physical condition of soils—to render heavy soils light and open, so that roots can penetrate easily and the air circulate freely, and to give light, sandy soils a loamy cast that will enable them to retain water.

Hence the value of swamp muck. If rightly manipulated, and wisely applied, it will prove itself of considerable value, not solely as a feeder of plants, but mainly as a modifier of soils, making both sandy and clay soils easier to cultivate and more productive, and that, too, somewhat permanently, more so, at least, than is true of most fertilizers.

All analysts agree that old, brack swamp muck contains just about the same ingredients as the solid excrements of horned cattle when hay or grass fed, except that the soluble alkalis of the former—potash and soda and a little common salt—have been washed out, while they remain in the latter. This shows for swamp muck a considerable value, since the addition of a little wood ash, very little common salt, and a little lime to neutralize its acidity, all costing but a trifle, make it almost the equivalent of manure from under the stable window.

But we appeal from a scientific to a practical view of the subject. Many suspect the deductions of science, as if true everywhere else but false in agriculture, while few will doubt the testimony of sound, practical, successful farmers. Thousands of such have used swamp muck freely, and, though costing something for labor and for desirable additions, they have found it to pay better than any other fertilizers they have purchased. We know many who testify to this effect, and we believe their testimony is reliable, as it agrees strictly with the scientific views on the subject.

As to the soils to which it is adapted, of course it need not be applied to low, swampy land. These already contain enough of it, and to add more would be like carrying coals to Newcastle or offering strawberries in Ham-monton, N. J., whence five car loads are shipped daily for fifty days every year in strawberry time for New York and Philadelphia. By-the-way, on the sandy lands of New Jersey strawberries are grown more by the aid of swamp muck wherever it can be had than of all other fertilizers, and are such in quality as cannot be beaten.

Next, on turf land and on land frequently alternated with grass, and consequently well supplied with organic matter, swamp muck cannot be expected to be as immediately useful as on worn soils, where the organic matter is deficient. On all uplands—sandy, loamy or clayey—it is sure to report itself favorably in the crops, and, besides, to effect a permanent improvement of soils having too much sand or too much clay.

For gardening, farming and nursery purposes, to all of which it is well suited, better, perhaps, to the nursery than to the others—it should, if possible, be dug the year previous to its use, as early as August or September, and in a dry time. If thrown into high piles the water will be drained out, and it will not again be saturated, and will be lighter to remove. As much as can be used as an absorbent of the liquid excrements of the animals should be carried to the stalls, folds, yards and pens in as dry a state as possible to be used for that purpose. The salts in the liquid excrements will supply just what the muck wants to make it as good as the manure heaps, and, in this case, no addition of potash, lime and salt will be required.

But if not brought to the barn and mixed with the barn manure by the feet of animals, it is well to mix with it one bushel of wood ash, one bushel of lime and half a bushel of some cheap agricultural salt to each cart load. That will make it as good as the

average of barn manure for corn, grass, potatoes or almost any other crop. For corn it is excellent; for potatoes nothing is better; it will ensure a good crop and a good quality, very little liable to the rot if placed a small shovelful in the hill and covered with the seed four inches deep. If applied to grass land the same addition as above can be recommended; but if to be applied to grass land with no addition and without composting with manure it should be dug at least a year beforehand and then spread on in the fall to have the benefit of the winter frosts, snows and rains. The water from snow and rain always contain considerable ammonia, and swamp muck is one of the most powerful retainers of ammonia for the use of crops.

For Indian corn there is nothing better than barnyard manure into which dry swamp muck, equal in quantity to the manure itself, has been thrown during the fall, winter and spring, and there thoroughly mixed and composted under the feet of animals. If applied when in a state of active fermentation all the better, as it will then bring up the seed in a very short time and produce a most vigorous growth. In this way the contents of the yard are doubled, and, at the same time, the quality is fully sustained. We say this last as a result of our own experience, confirmed by the testimony of farmers in whose judgment we have entire confidence.

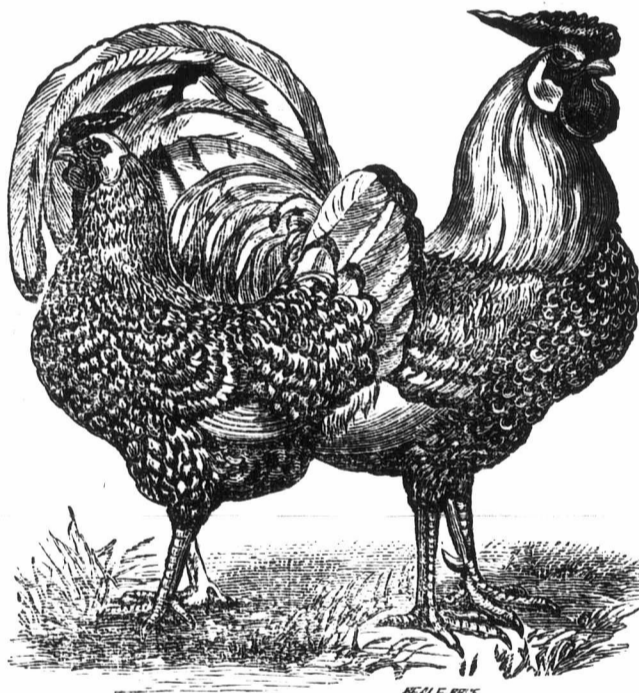
The best fields of corn we have ever seen were grown by barn manure with an equal quantity of well prepared muck (20 to 25 loads of this mixture to the acre), yielding, in several cases within our knowledge, over a hundred bushels of shelled corn per acre.—*Fireside and Agricultural Journal.*

TOP-DRESSING WHEAT.

A correspondent of the *Rural New Yorker* writes that he has been trying the effect of top-dressing his wheat as a protection during winter, and says:—

"My experience shows me that you may protect wheat by sowing oats with your wheat in September or spread straw on the wheat before it comes up, or spread it on late after the ground freezes, or in the winter when there is no snow on the ground; but you will receive the best results from yard manure (if rather coarse) spread on the ground before it comes up. When the wheat begins to show itself stop. If you should have a part of your wheat uncovered as soon as the ground freezes (and some snow will do no hurt) spread on as before.

"I had four acres of flat land, rather heavy; but being flat and wet it would heave bad in the spring, and the wheat would die out. The last crop I had on that piece I spread yard manure on about half of the place before the wheat came up. I resumed the spreading again as above stated, and covered the balance of the piece except about two rods wide through the centre of it. The result was satisfactory. If there was any difference in the early and late spreading it was in favor of the early spreading, but both were excellent. I threw my cradle on the wheat in a good many places, and it did not go to the ground. The strip through the centre that had no manure was nothing, a little wheat and a fair crop of chess."



SILVER-SPANGLED HAMBURGS.

Silver Spangled Hamburghs.

The above cut represents some of the stock of C. H. Wyckoff, of this city. He will have a stock of poultry at the Provincial Exhibition. He has Houdans, Buff White Cochins, Leghorns, Light and Dark Brahmas, Game Fowl and Pigeons of various kinds.

ALSIKE CLOVER.—(S. N.)—Alsike clover, it is claimed, will grow wherever red clover will. It will also thrive where red clover will not; that is, on moist ground. It is doubted whether it will resist drouth as well as red clover, though some growers assert that it does so better. Its natural habitation is a moist, cool climate. Hence it is doubted if it will thrive as well in the inland regions of the country, away from large bodies of water, as near our northern lakes.

OVER-DRIVING HORSES.—Some of the most serious losses in horse flesh to the farmer result from want of care to animals after being heated, or worked hard in the hot sun. In this case the animal should be put in a cool stable out of the draught, but where there is plenty of air; washed with tepid water, scraped, dried and if a pint of good sound ale is administered it will do no harm.

To prevent glue becoming sour or mouldy, the addition of a quantity of carbonate of soda, just sufficient to give a strong smell to the glue, will accomplish the desired result.

PEA BUGS.—A Jerseyman writes to the *Country Gentleman* that in his neighborhood the pea bug had been gotten rid of by threshing peas, cleaning them, and then putting them in a heap on the barn floor and sprinkling them at the rate of a quart to five or six bushels, with spirits of turpentine. Leave the peas a few days to dry, after shovelling the heap over to mix them well with the turpentine. Barrel them, and the bugs are never heard of again.

WEATHER AND CROPS.—The magnificent growing weather of late is having a most beneficial effect on the crops. A bountiful Providence has again dispelled the fears caused by dry weather, and the indications now are that most abundant returns will reward the husbandman's hopes and toils, and crown the year with gladness. Even the hay crop is making splendid progress.—*Strathroy Age.*

EXPERIMENTS IN CURING HAY WITH LIME.

Last summer I put about five tons of hay in one stack composed of about one-third each of timothy, clover and weeds. It was put up the same day it was cut and was quite green. I sprinkled it plentifully with lime about half air-slaked. It commenced to heat immediately, and got so hot that I thought it would burn, but in twenty-four hours it had cooled off. It kept remarkably well, moulded only where the large stalks of weeds. The cattle ate it, but did not like the lime. I put the same amount of hay in a barn. This hay was better cured and drier than the other, but it did not keep as well as the other. The salt appeared to take as much dampness as the lime took up, which rendered it useless. In another barn I put hay that was well cured. I added lime to it also. The horses did not relish it so well as that which had no lime, but the horses appear healthier and have less cough than when fed on hay that was not limed.

I would not advise the use of lime only in a free-stone country. A certain amount of lime is necessary to make bone for all animals, but in a limestone country they often get too much, which causes diseases of the intestines and bladder.—*L. J. Wooley, in Ohio Farmer.*

CREDITABLE FARMING.

Many so-called model farms are not worthy of the slightest notice, much less of imitation. Any farm which is to do credit to cultivation, or management, or general results, should be self-supporting, for if it is dependent on manure which is purchased, it is evident this is a system which cannot be general. The majority of agriculturalists are not in a position to be buyers of fertilizers, and the application of livery-stable and city manure generally can only be used by those who are near to towns and cities, and who market hay, vegetables, etc., grown on their land.—These farmers and market gardeners can of course farm in a way to deserve genuine credit, but to farm on a system for general adoption, the management must be such as to sell such kinds of products as will increase the plant food, and act in such a way that the more there is produced the more there will be returned to the soil. This exceedingly essential desideratum has not sufficient importance attached to it in America, at least not in the United States, though in Canada the best stock farmers are approaching this salutary management. There are many crops which could be secured for food, which would be more palatable and more fattening if not allowed to seed, yet this extra drain on the land is suffered, while at the same time cattle find this old straw-like food distasteful. It is not only hay which is treated thus, but there are numerous parties who manage grazing so badly as to permit half the grass to seed and not on the ground, although it is seen year after year that the stock reject all this old stuff, and will only eat where the grass has been kept short.

In some of the older States it is a well known fact that there are more farms which would not sell for the cost of their improvements than there are of the opposite sort.—This is evidently owing to a system of cropping which has gradually but surely sapped every particle of fertility which plows and cultivators can set free to act on vegetation. This method puts one in mind of the word "subdue," which some are so fond of using in regard to land, for large parts of these States are most relentlessly subdued, so much so that the soil is "subdued," disabled, crushed and destroyed! And yet because an occasional farmer exists who exports corn, grain, pork or cheese, the whole community claims credit for the champion!—*Cor. Country Gentleman.*

The full value of wheat as a civilizer will never be fully realized until wheat-meal takes the place of bolted flour, and the people learn to make bread without yeast or risings. Good bread is emphatically the "staff of life," but the commercial article is the way to dyspepsia and premature death.—*Science of Health.*

THE KOHL RABI.

There seems to be a decided tendency in Britain to substitute *kohl rabi* for turnips, and the same thing is also observed here. The *kohl rabi*, which is a sort of turnip and cabbage, having a large root of exceeding sweetness, out of the sides of which grow the leaves, which are also highly nutritious and relished by all classes of stock without having that tendency to scour them like turnip tops, is capable of producing a larger amount of cattle food to the acre than turnips. It is better able to succeed in a comparatively dry climate like ours, and the roots withstand frost as well as *ruta bagas*, while the leaves can be gathered and stored to be fed out during the fall and early winter. It is grown in precisely the same manner as *ruta bagas*, requires the same culture, but is laid by earlier, it being desirable not to break off the leaves after they begin to grow large. Sown in drills or ridges twenty-seven inches apart and manured in the drill as is usually done here for turnips the produce, with good, clean culture at the early stages, should reach 1,000 bushels of roots and six or eight tons of leaves per acre.—*Ex.*

EXPERIENCE THE BEST INSTRUCTION IN AGRICULTURE.

Extract from a communication from the Hon. Geo. Geddes in the *Country Gentleman*:-

"The house for caring for the poor of the county of Onondaga, State of New York, has for some thirty-five years or more been connected with a garden of several acres, in which the vegetables for the establishment were raised. About three acres has especially been devoted a large part of this time to corn (maize) and potatoes. The pig pens and horse stables connected with the establishment furnished an abundant supply of manure produced by grain-fed hogs and horses. Certainly these circumstances were all favorable to continued production; and, when we add that the soil was made from the disintegration of the Marcellus shales mixed with drift consisting of broken down lime rocks and the gypseous shales of the salt group that outcrop not far to the north of the locality, which had been transported by

the currents of the drift-forming period to, and mixed with, the underlying shales, we learn that the soil was, chemically and mechanically considered, of the best of the lands of central New York. It had every advantage of exposure to the action of the morning's sun, and, in fact, every advantage consistent with this climate belonged to this favored piece of land that would have been described in the ordinary language of farmers as a dark, clayey loam.

"This land, with all the advantages it possessed, has at last failed to produce reasonably good crops of corn or potatoes. The land became dry, broke up into heavy, massive lumps too hard to break and pulverize by any ordinary tools used on a farm. The corn would start well in the early part of the season and make considerable growth, then take a sickly appearance, and prematurely ripen, and produce but a small crop of inferior grain, and this was very nearly the history of the potato crop, till finally both had to be abandoned as no longer paying for the use of the land and labour devoted to it.

"The managers of this land, instead of consulting a chemist, resolved to try another crop, and see whether the land would refuse to mature it. Wheat was sown in the spring of 1872, and a crop of nearly thirty bushels to the acre was harvested, of a quality so good that a considerable portion of it was sold at \$2 a bushel for seed. With the wheat was sown some red clover and timothy, and now (May, 1873) the clover is most promising.

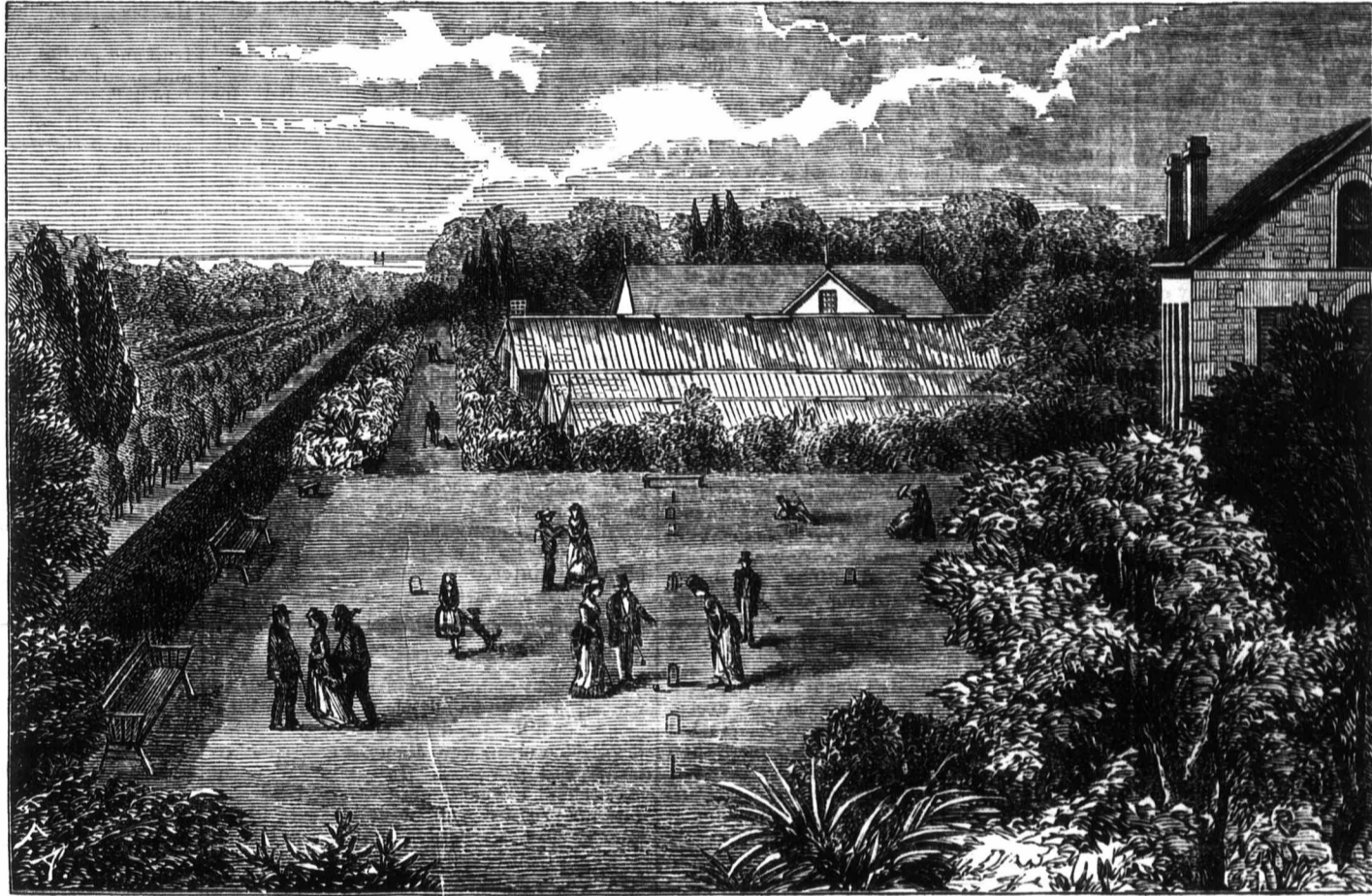
"How does science account for the facts set forth in this statement of the failure of this garden to continue the production of paying crops of corn and potatoes and for its production of such a superior crop of wheat?

"Professor Charles A. Goessman, Ph. D., of the Massachusetts Agricultural College, in his lecture before the New York State Agricultural Society at its last annual meeting, said:-"The barnyard manure is quite deservedly still the main fertilizer in ordinary farm operations, yet its peculiar value rests to-day more on its beneficial influence on the physical condi-

tion of the soil than in its effect on the chemical composition of the latter."

TO DESTROY BUGS on squash and cucumber vines, dissolve a tablespoonful of saltpetre in a pailful of water; put one pint of this around each hill, shaping the earth that it will not spread much, and the thing is done. Use more saltpetre if you can afford it—it is good for vegetable, but death to animal life. The bugs burrow in the earth at night and fail to rise in the morning. It is also good to kill the "grub" in peach trees, only use twice as much, say a quart or two to each tree. There was not a yellow or blistered leaf on twelve trees to which it was applied last season. No danger of killing any vegetable with it. A concentrated solution applied to beans makes them grow wonderfully well.—From *Colonial Farmer*.

If clover be sown alone, either for swine or seed, not less than fifteen pounds should be sown (twenty would be better) on a perfectly smooth surface, and without any other crop.—The ground should be rolled flat, when in condition, and pastured when the crop gets sufficiently large, if the soil be firm. Do not allow stock to occupy the land when there is any danger of its being poached.



THE TORONTO NURSERIES.

The Toronto Nurseries.

The above illustrates part of Mr. Leslie's house and grounds, situated on the Kingston Road, two and a half miles from the market square, Toronto. We took our artist to make a sketch of these premises. Of course all the buildings and grounds cannot be taken at one view, as they embrace 150 acres of land and are the largest nurseries in Canada.

The beautiful hedges to be seen on these grounds will repay a person's visit.—Fruits, flowers and vegetables are there in profusion; the novelties in plants, trees and shrubs, and the view of the different kinds as they appear on these grounds is quite pleasing and instructive. Should any of our readers have a half day to spare when in Toronto, we would recommend a trip for pleasure and profit to the nurseries. Mr. Leslie always takes pleasure in showing us around his nurseries, and will be pleased to show you also.

When last with him he showed to us the dwarf apple called the Hawthorn

Dean, known in England as the Poor Man's Apple. This tree is dwarfish in its nature, and admirably adapted to small gardens; it bears earlier than any other apple, in fact, some have borne the year after planting. The trees we saw were well laden. Mr. L. says they are the most prolific, the surest croppers, and the fruit is both suitable for the table and baking purposes. It is fit for and should be in every garden.

Mr. L. called our attention to his potatoes. On one piece of land, where he had raised a crop of evergreens, not a potato bug was to be seen, and on the potatoes that were planted in other parts the bugs were thick; perhaps some of our learned scientific writers might favor us with the cause of this anomaly. The potatoes were all the same kind.

Mr. Leslie does not believe in having unproductive ground on his place. If he is able to clear a piece of the land of trees, or has any small space left on his grounds, he puts in white beans. "Mr. Weld,"

said Mr. Leslie, "you should call the attention of your readers to the profits in white beans. They are profitable and nutritious, a good substitute for potatoes or meat, and more profitable than wheat-raising. The farmers do not raise half enough or use half enough of them."

Mr. Leslie has 35 varieties of new seedling potatoes which he is trying, having raised them from the ball; we think he will have a hard task to beat the Early Rose, though he may raise something that will open the eyes of our cousins across the lines.

Mr. L. showed us some of his crops that were manured from the hog pen; he says there is nothing like hog manure for giving a rank growth and strength to the land. We noticed the marked result; the growth was double where the hog manure had been used. Horse and cow manure were used side by side with it, but the superior growth was most remarkable where the hog manure had been used.—This, no doubt, is caused by the amount

of grain consumed by the hogs. If we farmers would put more grain into our stock and thus into our land, we might find our nugget in the shape of better crops, better samples, better stock and better prices.

If any of our stockmen, manufacturers, farmers, or others desire to have a sketch of their stock, implements, machinery, residences, &c., we have engaged an English artist to make drawings for us, who would do the work. Several are now made, and our engraver is employed in cutting some that will appear in future issues of this journal. Should you wish an engraving you can let us know.

LAST month we offered prizes for essays on three different subjects. For one of the prizes there has been as yet no competition, and among the essays for one of the others two were unsigned. For these reasons we defer the awarding of the prizes until next month.

Garden, Orchard & Forest.

VALUE OF PLANTING ORNAMENTAL TREES AND SHRUBS IN HOME GROUNDS.

The question of actual profit in dollars and cents, in planting ornamental trees and shrubbery, is not to be so exactly shown as it has been with fruit trees, yet there is a vast profit herein, not limited to the immediate advantage of the planter or purchaser of the property so embellished. Who can have failed to note that when a piece of real estate is offered for sale, its ornamental trees and plants (if well selected and in good culture), always add a charm, which finds recognized value in the increased price paid by the buyer?

Is there not profit in planting and caring for good trees and plants for ornament?—Every farm and orchard, every street and highway, every public square, park or cemetery, needs its ornamental planting, and all property adjacent is increased in value where it is done. On the farm, near the orchard, and near the house, and on the highway, ornamental (not less than useful) screens of deciduous or evergreen trees, are more or less necessary (if nature has not provided in advance) as protections from wind and storm. Any farm, orchard or vineyard so protected will yield a larger annual return, and will come earlier into ripening, and consequently the value of the property will be increased. A dwelling embowered in trees is manifestly more comfortable in all seasons of the year, and must be more healthful in consequence of the equalized temperature produced thereby, and of course enhanced in value by this important aid.

It has become a common subject of remark and study—the influence of trees on climate and crops, as evinced by the destruction of our native forests by the woodman's axe.—On the Western prairies we now see forests and groves springing up and carefully cultivated to protect farms and houses from the effect of storms and blighting, hot winds, and to furnish timber and fuel. Who can tell of the great increase of value to accrue from these groves and from the vast lines of beautiful hedges now growing up in the West, to take place of unsightly fences?

Every homestead requires its arbor of vines, its screens of evergreen trees, and its beautiful hedge rows, for the seclusion they afford and to keep out of view objects not proper to submit to the public eye. Every porch, and every approach to the home claims the grateful shade of some over-arching tree, or the welcoming smiles of plants of beautiful foliage and fragrant flowers.—*Horticulturalist.*

ORCHARDS IN GRASS.

If a man desires fruit for himself and family only, and is indifferent as to the time he gets it, and indifferent about the quality and quantity, then he may plant his trees in grass ground and keep them in that condition; but if he intends to make the business of fruit-growing a dependence for a livelihood, he would hardly be satisfied to wait from twelve to fifteen years for results that might be obtained by good culture in seven or eight years; nor would he be likely to be pleased with the moderate returns from common or inferior fruit, while his neighbor was receiving high prices for a superior article grown on ground where fruit was the only crop.

It is true that there are soils so rich that culture would give trees an excessive growth, and not only postpone fruitfulness, but make them liable to be injured by the severe winters.

An experienced horticulturist would not choose such a soil for an orchard.

One great advantage of having the ground under culture is that it enables the orchardist to give his trees a more uniform growth, without regard to condition or unfavorable seasons. If his trees are loaded with fruit or the season unusually dry, a more frequent stirring of the surface will generally keep up the desired vigor, but if the trees are in grass and the season very dry, he is powerless to help the case and can only watch and worry to see his trees almost cease to grow, the leaves turn brown and the fruit drop for want of sustenance, and perhaps gets very little consolation as he listens to his neighbor's merry whistle while following his cultivator or harrow through his orchard, unconcerned about the weather and wicked enough perhaps to wish that everybody else believed in the "grass theory," so that he will be able to get an extra price for his extra fruit.—*Horticulturalist.*

HOW TO WATER PLANTS.

From careful experiments Mr. Mechi discovered that plants slightly watered every day often perish, and always become dwarfed; whereas, a good soaking given twice a week, almost invariably proved very beneficial. He says:—

The sum of our experience in watering amounts to this—That thorough soaking of the ground two or three times a week is much better than the same amount of water applied in dribbles daily, only sufficient to wet the upper surface, but not the under strata of earth contiguous to the roots. Cold spring water should, before applying it to a heated soil, be allowed to stand exposed to the sun and air for a few hours. The colder the water is and the warmer the soil, so is the necessity of applying it in abundance; for it is evident, though we cannot explain it, that the result produced upon plants by applying cold water to the soil, when at a high temperature, unless so copiously applied as to saturate the soil completely, is fatal to tender or weakly plants, and often more or less injurious to strong or healthy ones.

CULTIVATING FRUIT TREES.

Some writers tell us not to cultivate our fruit trees, as it produces an undue excitement or growing power in the tree, which predisposes to premature death. We don't believe their theory. Our experience is on the other side of the question, and we go in for thorough cultivation at least for a time—until the trees get well started.

In the fall of 1857 we set out 50 apple, 12 pear, and 6 cherry trees, on a piece of ground inclining to the south and west, on which a crop of rye had been gathered a few months previous. The holes were dug 18 inches deep and three feet in diameter; the top soil thrown by itself, and before setting the trees was thrown in the bottom of the holes, at least as much of it as would fill up to the right depth for setting the trees. The subsoil was well incorporated with barnyard scrapings which were thoroughly rotted, and then thrown in around the roots of the trees, being careful that none of the manure came directly in contact with the roots—having saved enough surface soil to cover the roots. The roots were all nicely cut off with a sharp knife at the ends, in a slanting direction, and the tops thoroughly trimmed before setting. The following spring the ground was plowed and planted to potatoes, which brought in market more than enough to pay all the expenses thus far incurred. The soil being rather poor the potato crop was light, only 125 bushels. The orchard contained 1 1/2 acres. The trees all lived, and made from 12 to 24 inches growth the first season.

Potatoes were planted among the trees year after year, for 8 or 9 years, with one exception; beans were planted among them that year; and they always sold for more than enough to pay all the expenses incurred.

During this time we manured the orchard twice with barnyard manure, spreading it over the whole surface, except directly around the trees, a space of 6 or 8 feet in diameter was left without any.

Manure to do the tree most good should be put at the outer end of the roots, and not around the body; this is our theory and we practice accordingly.

These trees commenced bearing the third year after being set, and made 18 inches growth on an average each year during the above mentioned period.

A distant neighbor bought 100 apple trees of the same lot as mine, and set them in a stiff timothy sod, and the consequence was at the end of three years nearly one-half of the trees were dead, and those alive had made hardly any perceptible growth during the three years. At this time but few of the 100 trees are left, and those of little value, while those we set are furnishing apples in large quantities. The pear and cherry trees have done equally well.

The white borer gave me more trouble than anything else among my trees. During the first summer, before I was aware of their depredations, they had gained a foothold, but their stay was of short duration. I took my pocket-knife and cut every one of them out. I found as many as 8 worms each in several of the trees.

The following season I took hardware paper and cut it in strips 8 inches wide; then thoroughly tarred one side and wrapped it around the collar of the trees, first scraping away the soil down to the roots, and after putting on the paper replaced the soil. This proved effectual. One year I tried scraping

the trees. The soil was removed down to the roots, and then a piece of hard soap thoroughly rubbed on the bare roots and trunk of the trees, to the height of 8 or 10 inches. This also proved effectual, excepting one or two trees.

In using the tarred paper, a string should be tied around the tree near the upper end of the hardware paper, to keep it close to the body of the tree. The string should be loosened as the tree enlarges, or it will harm the tree. New paper will have to be used each year.

Thousands of dollars are paid out yearly by farmers for fruit trees, which is so much money thrown away as far as they (the farmers) are concerned. They are fond of good fruit, and expend their money liberally for fruit trees, but will not give them the required attention after setting them out.—*Fruit Recorder.*

THE PROTECTION AND PLANTING OF FOREST TREES.

The time has arrived when, in many parts of our country, the want of forest trees for the purposes of building, fencing, fuel, shade, shelter and general effect in the landscape, is being keenly felt. It is, therefore, plain enough that in the clearing of farms great care should be taken to leave belts and masses of trees; for, although single trees and little groups, when stripped of the protection of larger masses, may not be able to withstand the elements, still those of greater extent serve the most desirable purposes both for use and ornament.

The mania in many regions of the country for stripping the whole face of nature of every tree and shrub, is so great as to destroy some of the finest effects of the most charming landscapes. Would it not be well to use great judgment in deciding what trees should be cut down?

The tree, a hundred years in growing, may be cut down in an hour! Then let the noble and beautiful trees, save when they have to be removed for the purposes of profitable cultivation of the soil, be protected rather than destroyed, and let our young men plant young trees. They will benefit their children if not themselves, and serve as very expressive monuments of their usefulness. The snow, nature's overcoat for the soil, is drifted in the absence of shelter from the high winds, and in many instances, in the absence of trees, our crops are laid bare to the biting blasts of winter.

TO PROTECT YOUNG TREES FROM MICE IN WINTER.

To protect young trees from mice during winter, I have found that making a little mound or hill around the body and keeping the ground clean were about as good preventatives as I ever tried.

In taking care of an old orchard I would graft every tree that does not produce good, profitable fruit, unless the tree is on the decay; in that case I think it would be useless. A person who has not tried the experiment would be surprised to see in how short a time an old tree can be renewed. If you cannot do it yourself, employ a reliable grafter, and he will bring about a great reformation in your trees in about three years. Many people make a great mistake in cutting off all the top of a tree the next year after being grafted; the consequence is, in nine cases out of ten, the tree dies. You should be at least three years cutting off the natural limbs; by that time the grafts will be grown so they can take the place of the natural branches. It is a good plan to scrape off the rough bark of old trees early in the spring, and keep the ground well cultivated, or if kept in sod, well manured around the trees.

DAMAGED TIMBER.—Although the damage done to crops, buildings and fences by the 4th of July tornado in this part of the country was very great, yet, the greatest damage by far was that done to the timber. It is not an uncommon thing to find fine groves of timber of ten, fifteen or twenty acres, almost or entirely stripped clean of every tree on it of any size above six inches in diameter, and those of a lesser size which are left standing are so badly injured by the falling ones that they will decay. And what is worse still is that although the timber may be cleared away the land is left unfit for use for many years by reason of the huge-upturned roots on every few yards. A hundred thousand dollars would not compensate for the loss of timber in this county alone.—*Fond du Lac Journal.*

THIN OUT THE FRUIT.

It is a good time now to remind fruit growers about thinning out fruit. With young trees this matter is especially important, and perhaps with no tree more than the pear. The policy of allowing young trees to bear all they will is simply ruinous. In some cases a grower may get more money from his orchard during the current year by adopting this course, and yet that does not always follow. But, if he does, he will most assuredly have to pay for it in future. What a sagacious man wants to secure, when his orchard is young, is growth—not an extraordinary, but a healing growth. Then, when the tree commences bearing, they will be able to bear good crops at once, large enough to make up in a few years for not bearing when quite young. As a matter of fact the crops borne by quite young trees are always small, but at the same time are such great drawbacks on the strength and vitality of the trees as to impede their development most seriously, causing them to fall so far behind other trees that a stranger would think them several years younger. The limbs, too, being tender, become distorted by the weight of fruit, and a habit of early bearing being also induced, there will be an annual tendency to produce fruit instead of wood and foliage, accompanied by an inability to perfect it, which will increase from year to year until the poor thing dies prematurely. Then the short-sighted grower, who is in hurry for fruit and profits, can place another in its place and mournfully tell his neighbors of his hard "luck."

I am well satisfied that in planting an orchard, if the owner would make a vow not to allow a single tree to bear a solitary specimen for the first seven or eight years after planting, and would give his time and attention to perfecting the growth of his trees, and to pruning them properly, he would get more money from his orchard at the end of, say fifteen years, and have a much finer orchard than would otherwise be the case. The trees would be more uniform in growth, be large, better shaped, have a better development of roots, thus enabling them the better to withstand high winds or tempests, bear greater crops, and look better—in short, be better in every conceivable way. If the owner wanted to sell his place, such an orchard—thrifty, vigorous, well-shaped, large for its age, uniform in size, with clean, healthy-looking bark, and limbs not twisted or deformed by premature bearing—would constitute an attraction which an appreciative purchaser would find it hard to resist. An orchard of 500 such trees would have more charms for him than one of a thousand which had been suffered to bear at will ever since planting, with the trees more or less stunted, twisted, irregular in size, and exhibiting all the other defects peculiar to premature bearing.

Some may claim that heavy application of manure to young bearing trees will make due amends, and maintain growth and vigor. I do not think that this is the case at all. If a tree is allowed to over bear this year, its constitutional vigor is impaired; it becomes sick, in a measure, and it is no more in the condition to appreciate the benefits of this exceptional manuring than a sick man is to appreciate extra good eating while his illness lasts. What is important in the orchardist to remember is that fruit-bearing and a regular, healthy growth in young trees cannot go forward at the same time; that growth is the natural business of a young orchard, as it is of human being and animals; and that fruit-bearing—which is reproduction of that species—cannot safely or profitably be attempted until there is at least some approximation to a full growth and development.

The wise fruit grower will then not neglect thinning, and now is just the season for it. There is far more danger of leaving too much than too little. Every imperfect specimen, every one stung or marred by insects, had better come off. What is left will be the better for it—will be larger, better perfected, bring more money, more credit, and cost less for marketing. The trees will suffer less, because they have less seeds to perfect. They will grow better, look better, sell better, and make their owner feel better. Be patient in fruit-growing as well as other things.—*Cultivator.*

Ebony wood weighs 83 lbs. to the cubic foot; lignum vitae the same; hickory, 52 lbs.; birch, 45 lbs.; beech, 40; yellow pine, 38; white pine, 25; cork, 15; and water, 62.

FRUIT.

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HONEY LOCUST FOR HEDGES.

The honey locust as a hedge plant is here becoming quite popular, being readily propagated, very hardy, of strong, vigorous growth, roots growing straight down, and adapted to varied soils. It makes a cheap, durable, efficient fence, always in repair, proof against our severest winters, and, well trained, adds largely to the beauty of the farm.

The seed should be gathered in the fall as soon as ripe, from trees only that bear thorns. When the ground will work well in spring, sow in drills 3 1/2 feet apart, having previously put boiling water on the seed and let stand, well covered, for twenty-four hours. Most of the seed will grow the first season. All weeds must be kept down, and the ground well tilled (as the first few seasons will greatly determine the value of the hedges), using a good cultivator between the rows.—The plants should be set when from one to four years old. In the fall, where the hedge is to be set, plough a good back furrow wide enough to run a cultivator on both sides of the hedge.

The following spring, when the ground is suitable, and before their leaves appear, the plants should be set. Turn a straight deep furrow; place a quantity of plants in a vessel of very muddy water, having cut the roots with a hatchet to six or eight inches long; now one holds the plant in place in the furrow, close to the land side—taking care to select those bearing thorns, and avoid bending the roots—while another shovels enough fine earth about it to hold it in position—the man who shovels can level up while the other prepares another quantity. We set them eight or ten inches apart, and the two men in this way can set well about fifty rods per day.

After setting, cut back to two or three buds, and when hoed once or twice, they should be mulched with straw. From this season, good culture, protection from animals, and proper cutting will insure a good thick hedge in five or six years. I should prune closely the first three or four years—once early in spring, and again about July 1st. Many, impatient and unreasonable with this, as with other matters of the farm, allow the plants to grow tall and tree-like; but such a hedge will not turn sheep and hogs, and is quite unattractive. We have set young fruit trees two rods apart in the line of our hedges, which grow up with and do not disturb them, while they look well and pay well, but a hedge will not do well near a large tree. All ants' nests should be destroyed, or the hedge will be.—D. M. in Country Gentleman.

REMEDIES FOR THE CANKER WORM.

The following remedies against this insect are given in the order in which they are to be applied, commencing with the appearance of the moths in the spring.

1st. Prevent the passage of moths up the trees. The most approved plan heretofore used is to put a canvass or other cloth band, six inches or more wide, around the trunk and besmear it with tar, or a mixture of tar and molasses, applied every other day.—Rooting felt besmear with refuse printers' ink has been recently suggested as preferable. The method suggested in this report is to put a band of rope or closely twisted hay around the trunk, and over this a tin band about four inches wide, placed so that the rope shall be at the middle of the tin, making a closed cavity below and a free edge of the tin above. The time to use these appliances is, mostly, in the month of March; but also at other times when the weather is sufficiently open to permit the insects to run.

2nd. If the moths are prevented from ascending the tree they will deposit their eggs below the obstruction, and for the most part near to it. These eggs can be destroyed by a single application of kerosene oil.

3rd. If the moths are not prevented from ascending the tree they will deposit their eggs mostly upon the under side of the loose scales of bark on the upper part of the trunk and the large branches. Many of them can be destroyed by scraping off and burning the scales.

4th. If all precautions have been neglected, and the eggs have been permitted to hatch, then, as soon as the worms are large enough to be easily seen, jar them from the trees and sweep them away with a pole, as they hang by their threads, and burn or otherwise destroy them. Strong washes

such as Paris Green water, or suds made from the whale oil soap, thrown upon the trees with a garden syringe, will also materially check their depredations.

If the worms have matured and gone into the ground for winter quarters, plow the ground late in the fall, so as to expose the pupae to the frost and the action of natural enemies. The effectiveness of the plowing will be increased if a few handfuls of corn be plowed in under each tree, and the hogs be permitted to have the range of the orchard.

TRAINING GRAPE VINES.

It is a pleasant thing to note that in farm and garden operations attention is more freely given to displaying a little taste in the arrangement of one's work than formerly. No one wants to see convenience sacrificed entirely to beauty. At least no one in this part of the world, for we believe we did once note a project that was popular in Boston to make the public streets and roads winding, because the curve was the line of beauty. But it is a good thing always to aim at neatness, even at some effort, for it not only adds a great deal to the enjoyment of life, but cultivates a disposition to do things well, which generally ends in pecuniary profits as well as mental pleasure.

This idea occurs just now in view of the practice of one of our friends with the grape vines on his frame barn. In almost all cases where grapes are grown in this way, the branches are tacked in anyhow or anywhere, wherever a place is open. The sort of random way which is taught soldiers in Indian fighting—"wherever you see a head, hit it." In this case there is just a place for every shoot, and every shoot finds its place. The way it was done was thus: After the vine was a year or two planted—in the centre of the garden end of the barn the vine was pruned back and thus made to throw out three strong branches; two of these branches were then led along, one in each direction, about one foot from the ground, horizontally. The other was nailed straight up to about twelve feet from the other one, when it was headed off. The next year two branches were taken laterally from the top of this one, each branch diverging as before, near the ground. When the new growth pushes, thus there is a space of about twelve feet between the spreading branches above and those tacks are driven just under the upper "arms" and "just above the lower arms" about one foot apart, and strings are fastened on just as is so often done for morning glories before the cottage door. The vines take hold of these strings and go straight up, and the whole makes a picture of order and neatness truly pleasing. Our friend is quite sure that "his plan," as he fondly calls it, he really saves time; and that it does not take near as long as where one does not know exactly where to nail, but has to spend half the time in hunting for an opening. And we believe this the more readily because we know that those people who, in any walk of life, habituate themselves to order and method, always get through more work than those who have no particular system to live up to.

We might add that in the fall of the year he cuts away every alternate cane to near its starting point. It then makes another one, which bears next year. The one not cut is of course the fruit-bearing one for the time being. There has been many "systems" of pruning and training grape vines given in books, all with more or less merit; but many of them require more brain and time to master than they are worth, or least than more people have to give. But this is very simple and easy for any to understand.—Germania Tel.

SUMMER PRUNING THE GRAPE.

As to the value of summer pruning, some are inclined to think it unnecessary and useless labor; but I find it one of the most important, as well as profitable, items connected with grape culture. Summer pruning does not mean a general pruning—cutting off large quantities of wood and stripping the foliage. Such would be disastrous to the top. What is generally termed summer pruning is what I call summer dressing of the vines. And this dressing is done without the knife. It is simply the removal of a superabundant growth—of weak and useless wood, which, if left on the vines, would greatly injure their vigor, and to a great extent impair the full development of the fruit. Of this I am perfectly convinced from the size of the berries on some vines I did not summer prune last season.

Last summer was noted as one of our driest and hottest; not only in one locality, but almost through the entire south. I commenced about the 10th of May and gave the vines a thorough-cleaning of all the surplus growth, leaving no shoots but those that were to take the place of the old wood that was to be cut in the winter pruning. All the other growth was disbudled or rubbed off, leaving the young and healthy shoots as near as possible to take the place of the old and weak wood. The

bearing shoots were stopped without any regard to the number of leaves on each. All were kept tied in as they advanced in growth. The crop ripened well, and there were not many green berries to be found on either the Concord or Ives, and all brought a fine price in the New Orleans market.

I have here stated the mode of summer pruning that I have always followed, and found it to be successful with all varieties. On this mode of pruning, the crop is a sure one, provided it is taken in time. If the work is deferred, it would be better not to do it at all, as the wood commences to harden, and in trying to rub off the shoots the vines are injured to some extent.

Cutting off large canes of the current season's growth and stripping off the foliage that the sun may have fair access to the fruit, are practices that are reproached by all good cultivators. Superfluous growth should be checked by pinching when it first manifests itself, and the direct rays of the sun should never reach the fruit.—Cor. Rural Alabamian.

THE CUCKLEBURR.

"Farmer and Granger" inquires how he may kill out the cuckle burr. I have had some experience with them, but they are not very plenty on my farm. If the weeds are not numerous pull them up. If they are, seed in timothy and clover and mow in July before going to seed, and mow again in September, and be careful that not a burr ripens sufficiently to grow. This process may need to be continued two or three years, as the seed is said to retain its vitality in the ground, or on the ground, for that length of time. Some advise pasturing closely with sheep. The weed is a terrible bore. Two good crops of them are more exhaustive to the soil than ten crops of corn, and will make the land so poor that a plow sometimes will not scour. The weeds need to be legislated against like the Canadian thistle, for the burrs travel to oat and too far, from farm to farm, in cows' tails and on rabbits' backs.—Every farmer should, by law, be compelled to prevent these burrs from coming to seed, and in case of neglect the proper authorities should hire help and exterminate them at the expense of the land owner. I believe nothing short of the vigorous execution of such a law will save the whole sections of our estate. A. J. B. Iowa Homestead.

CURCULIO ON FRUIT TREES.

WASHINGTON, D. C.

Years ago a premium was offered for a remedy against the ravages of the Curculio on apricot, plum, nectarines and peaches. I had suffered much from their depredations—never had nectarines ripen until I pastured my orchard with hogs and sheep. Observing that when property changed hands, and plum trees were included in the stock-yard, they ripened their fruit untouched by the curculio.

I planted a small orchard of plum, apricot and nectarine trees, adjoining my barnyard, and pastured it with hogs, and ewes and lambs—(the lambs bark the trees)—driving strong locust posts around the young trees, to prevent injury by the hogs rubbing against them. The result was, that the fruit ripened untouched by the curculio. I offered this to the Ohio Horticultural Society for their premium of \$100.—Their reply was through the Western Horticulturalist, edited by D. Wadler, that there was nothing new in it but the use of sheep. A lady whose mother had a fine green house, the plants of which had been much injured by insects, which she could not get rid of until she used sheep manure, which completely drove them off.

Such had been my experience when the buds of grafts were eaten up by insects. The application of sulphur, soot, snuff, &c., had no effect, but on applying powdered sheep manure on the buds and grafts when moistened from dews, and coarse manure around the small trees at the ground, the insects disappeared immediately. The oil left on the body of the trees by the sheep rubbing against them, the effluvia from the sheep and their manure is offensive to many insects, and then feeding the grass close to the ground, gives the buds a better chance to feed on the insects and exterminate them. Their manure and that of the hogs produces a healthful growth of the trees, the hogs destroy insects in the grub—premium for reclaiming old orchards.

If of inferior fruit, one-third of the top may be taken off and grafted in the spring or fall, with a healthy annual bearing kind, and next year then another third of the top grafted, and the third year the under third may be grafted in this way, and you will soon have bearing trees. If the trees are of fine varieties of fruit, shorten the old and feeble branches, and encourage young shoots. For this mode, Forsyth, of England, received a pension from his government, and from several of the Continental governments. This system of renewing old orchards was termed Forsything. The ground may be plowed shallow, and subsoiled deep—with the coulter plow, shortening the outer roots somewhat, but not destroying the rootlets under the tree.—Joseph L. Smith, in Fruit Recorder.

TRANSPLANTING FOREST TREES.

When a tree of any considerable size—a tree of a suitable size for planting for shade purposes, for instance is removed from where it grew, there is excessive curtailment of the roots, especially if the tree be taken from the forest; for the fibrous roots are in this instance at a greater distance from the stem, than they would have been if the same trees had grown upon open land; and in this, the tree will be found to have a long, upright stem with the foliage principally near the extremity, varying with the density or openness of the forest.

On the other hand, trees taken from openings will be found to be furnished with plenty of fibrous roots, the root feeling surfaces, distributed more equally throughout the extent of the root surface; the tree will be spreading and the branches will make their appearance near the ground; the foliage will present a large surface, and this again in proportion to the roots; for the quantity of roots will be in proportion to the leaf surface, for the reason that this leaf surface stimulates root growth and vice versa; and the more fibrous roots the tree contains, the less necessity will their be for close pruning.

We hold, and experience has shown the correctness of our position, that the top ought not to be severely trimmed; because, without leaf surface, the root must die; but if plenty of leaf surface be present to evaporate the sap, and plenty of additional roots will be induced, and the tree becomes more quickly established than when cut to bare poles. In fact this severe cutting of the top was originally inculcated from the fact that trees taken from the thick forest had their tops already forced so high as to be entirely unsuited for the purposes of shade; and, consequently, the trunk had to be shortened and then forced to form a new leaf surface from the dormant or secondary buds that always exist. The readiness with which this is accomplished under ordinary circumstances has led many planters into error.

Although trees excessively cut may live and make fair growth, they are always feeble in comparison with that of trees from the nursery, or openings, while the young sapplings have been, able to develop themselves nominally, and in the end it will always be found that such trees although smaller at the time of transplanting than those from the thick forest, will soon catch up with their larger relatives, and at the end of ten years far outstrip them other things being equal.

We do not advocate the planting of large trees, say from four to eight inches in diameter, except when immediate effect is wanted; and then only when they can be had from open ground, and be transplanted with a large ball of earth entire. The size of the tree suitable for planting must, however, be determined by the variety. Elms, maples, and other trees having an abundance of fibrous roots, may safely be transplanted of much larger size than black walnut, butternut, chestnut, etc., so that may these trees that will readily grow from cuttings, as cottonwood, poplar and the willows, be transplanted when of large size. But with any trees that are intended for removal after they are well grown, it is always a good plan to trench about them a year before transplanting, filling in with good earth to induce the formation of fibrous roots near the tree, and when moved keep the ball intact.

To sum up the whole subject of transplanting, we may say:—The smaller the tree, of whatever variety, the more certain are the chances of its living. The greater the top, the better will the root be furnished with fibres, and as a matter of course, the more certain will the tree be to make immediate growth. In trimming, seek to equalize the top to the root; that is if there be a fair proportion of root, simply shorten in the top, and cut away such branches as would carry the tree out of its proper balance, always being sure to leave top enough. Generally as a matter of economy, planters prepare to dig the tree in the Fall; if this be done, keep the roots protected from the sun and air, and always moist. Trim the tops, and cut away torn portions of the roots. Set the trees upright, in trenches, as near together as possible, the earth from the first trench being thrown at the back of the first line of trees, and the soil from the succeeding trenches furnishing material for covering the roots of the preceding ones. Thus you will have the trees so thickly together that they will brace and protect each other; this plan is for large trees.

For smaller ones, or such as are usually obtained from nurserymen, the roots may be laid in the trenches and the tops inclined at an angle of 45°. Cover in every case with fine earth thoroughly packed about the roots, and extending well up along the stems. By this means the roots will be found in the Spring perfectly calloused and sometimes indications of the new root growth will appear. In all trees having naturally, plenty of fibrous roots, or those making their roots near the surface, as elms, maples, linden, etc., those from five to fifteen feet in height, will be found to transplant kindly. Other trees not so well furnished, including the black walnut, butternut, chestnut, and white wood or tulip tree, *Liriodendron tulipifera*, should not be transplanted

when of large size. For this class of trees we should prefer those not more than six feet high for ultimate effect, and in planting any class we should much rather discard a tree altogether, than plant one cut to a bare pole.—*Western Rural.*

PROPAGATING SHRUBS BY SEEDS.

Many shrubs are best propagated by seeds, and some can hardly be increased in any other way. All shrubs that are simple species and not florist's varieties can be raised in this way provided they bear seed, which most of them do. Thus, if you want a hedge of hawthorn, you are sure of getting one by sowing seed, for the common white hawthorn, being a natural species, will produce a seedling like the parent. But if you sow the seed of one of the colored or double hawthorns, which are the florist's varieties, and hope to see an offspring like the parent you will probably be disappointed. So with the fancy varieties of the Weigelia—they will not exactly reproduce themselves from seed, though the offspring will bear a certain resemblance to the parent, just as a child usually does to the father or mother. This variation from seed is one of the most curious subjects in horticulture, and it is by means of it that nearly all improvements in the varieties of fruits, flowers and vegetables have been produced. Leaving out, then, the fancy varieties—unless, indeed, we wish to experiment with them for the production of new ones—we have remaining the greater number, including many of the best of our ornamental shrubs. Some of these cannot be raised from cuttings or even from layers, and at the same time are difficult to bud or graft, but can be raised very easily from seed. Such, for example, is the Virginian Fringe (*Chionanthus*).

Now, with respect to the management of the seed. It should be sown as soon as possible after ripening, as it then germinates much more quickly and surely. It may be sown in a cold frame in a light soil well enriched with leaf mould and very old pulverized manure. This soil should be at least two feet deep and well drained. If not naturally very light, sand should be added to it. When these seeds are small they may be dropped in rows on the surface or scattered over it broadcast and then pressed (not too hard) with the flat of a spade, after which light soil should be sifted over them to a depth not exceeding half an inch. If the seeds are large they should be sown in drills at a depth not exceeding an inch. Sowing this to be done in the autumn, which is the best time, nothing remains but to cover the frame with boards or shutters for the winter. Remove them in the spring and the seedlings will appear if it is their nature to come up the first season. The same processes may be conducted on a smaller scale in pots and boxes, which should be wintered in a cellar or cold frame.

The seeds of shrubs like other seeds differ much in the period of germination. Some—such as the seed of cypripedium and Tartarian honey-suckles—germinate almost immediately. Others, like the hawthorns, require a full year. The habits of the Virginia Fringe, already alluded to, are very curious in this respect. Sow the seeds in the autumn and they do not appear above the ground before the second succeeding spring, but during the summer, when they are at all appearance dormant, they throw out a root without the least development of the seed-leaves.—*English Journal of Horticulture.*

Mossy trees in an orchard generally indicate too much moisture in the soil—that is, that the soil needs drainage and the trees require stimulating. Give the ground under the trees a good top-dressing of muck and ashes, drain the ground thoroughly, scrape off the moss from the trees with a hoe, and wash the trunks and large branches with strong soap-suds. But we should perhaps observe that while mossy trees generally indicate too much moisture, it is not always the case; for trees on sandy soils are often mossy, and sandy soils are covered with the same species of moss. Moss, therefore, often indicates poverty of soil, or uncongenial conditions in some way; it may be a want of moisture as well as too much. Stimulate the growth at any rate, as we have above suggested, whether the soil is dry or wet.—*New York Farmer.*

W. H. near Madison, Wis., has for years used with very good success as a wash for fruit trees a compound of clay, cow manure and ashes: mixed with soap suds and applied with a bush to the trunk and branches as high as can be reached. He finds it drives away bark lice, and cleans the tree of moss, &c.

FRUIT CROPS.—The prospects for fruit growers this year are very discouraging.—Grapes are very generally killed in Ohio, and blackberries in the Eastern States. The strawberries here were dried up by the drought, and prices hardly averaged ten to twelve cents per quart. Pears were badly cut by late frosts.—Mr. Batcham writes from Ohio:—"Our apples will be a very short crop, as well as the smaller fruits generally. I have never seen so poor prospects for fruit growers."—*Horticulturist.*

PREPARING SLIPS FOR PLANTING.—The *Gazette des Campagnes* recommends to dip the extremities of the slip in collodion, containing twice as much cotton as the ordinary material used in photography. Let the first coat dry and then dip again. After planting the slip, the development of the roots will take place very promptly. This method is said to be particularly efficacious in woody slips, and to succeed well in scions of the geranium, fuschia, and smaller plants.

Let those who wish to make willow hedges procure large cuttings, none less than an inch in diameter, and fifteen inches in length. Plow a deep furrow on the line for your hedge; set your cuttings in the furrow four inches apart, and angling lengthwise of your row; drive them into the ground so that when you plow a furrow on each side they will be nearly covered, cultivate well for two years, the third spring cut off three feet from the ground, and two years thereafter cut off four and one-half feet high, and it will do "turn out."—*Home-Steak.*

Many of the largest elms in Milford, Mass., have not a single green leaf upon them, so thorough has been the work of the canker worm.

The Horse.

SPAVIN AND CURB.

A writer in the *Sportsman* makes some practical remarks on these ills to which horse flesh is heir, that some of our readers may peruse with interest:—

The hock of a horse is a most complex and important joint, and whenever this part is affected, or shows any predisposition to even the slightest of the many disorders to which it is subject, it is never good policy on the part of turf writers to recommend such animals as being likely to win great races. The hock-joint consists of six bones, and these are so closely united as to appear but one. This, of course, allows of but little motion between the bones, yet this little is useful in preventing jar and concussion, and by having such numerous points of contact the joint is rendered stronger. Almost every bone has peculiar bands of fibres, stretching from one to the other in every direction. One of the strongest of these ligaments passes around the back part of the hock, and it is the inflammation of this, in one particular part, that is the cause of curb. The "net-work," so to speak, of the fibres that pass over the inner side of the hock, is equally liable to sprain, and consequent inflammation, as the ligament which passes over the posterior part of the joint.

When portions of these ligaments become inflamed, either from sudden strain or hereditary causes, the effect is generally a case of bone-spavin, gradually hardening from a tender, crusty substance, into bone, which interferes with the natural action of the joint—always from stiffness of the part—and frequently lameness, for which there is no cure. Blood spavin is an enlargement of the large vein, which any person of ordinary intelligence can perceive—particularly when the animal is heated from exertion—running down the inner side of the thigh to the hock. This enlargement consists of a small soft swelling in a different part of the inside of the hock to the seat of bone spavin, and is not nearly so injurious in its effects.

LOSS OF HORSES IN NEW YORK.

The wear and tear of horse-flesh in New York city is very great. In one year, from May 1, 1872, to May 1, 1873, there were received at the New York Rendering Company 7,753 dead and condemned horses. Of these 720 were farced and 917 glandered; 5,130 horses were gathered from the streets, where they fell dead. We do not, as a general thing, take the best care of our horses. It is safe to say that the 7,753 animals received in a single year by the New York Rendering Company represented a money value of more than one million of dollars.

HORSES MAY BE TOO LARGE.—In an article strongly commending the increased attention paid in the West to breeding larger horses, the *Prairie Farmer* says:—"It is well enough, however, to bear in mind that if the form and temper are all right, 1,250 to 1,500 pounds is quite weight enough in the mature animal for any purpose. Above this weight there is rarely sufficient action or fine form."



GARDEN AND FARM.

HINTS FOR THE MONTH.

The *Garden* does not call for so much labor in September as in the preceding months, and now in the abundance of its fruits and vegetables, it amply repays us for the care and labor of the spring and summer. Strawberry plants may be set this month with reasonable expectation of success. The soil for them should have been well-prepared, and, if necessary, must be watered at planting. May is considered a better season for planting strawberries, but by planting them in September you may succeed equally well if the season be favorable, and you may have some fruit from them the next season. We speak from experience. Last September we planted a strawberry bed in well-prepared ground. As the winter drew nigh we mulched them with leaves from the forest. In spring we raked aside the covering and dug between the lines, the partially rotted leaves serving as manure, and in due time we had the pleasure of gathering some fruit of excellent quality, though not an abundant crop; and they gave excellent promise.

We repeat the old lesson, keep down the weeds.

One of the principal operations on the FARM in September is the sowing of Fall Wheat. The uncertainty of the crop from the severity of our Canadian winters has prevented fall wheat being sowed so extensively as it would otherwise have been; but this year it has done much better than the wheat sown in spring, and it is probable many will, in consequence, be encouraged to sow this fall. In many instances, hitherto, the failure may in part be attributed to the land not being well prepared. The ground should be well ploughed to a good depth, and the seed-bed rich and mellow, so that the young plant may send forth good roots, catch a good hold, and strike deep into the soil. No water should be allowed to lie stagnant on the ground. The best seed should be procured; this is all important. It should be of the variety best suited to the climate, the soil, and the season of sowing. It should be entirely free from seeds of weeds, and, as far as possible, from inferior grains. There is an increasing attention given to the selection of seed, but still greater attention is needed. An additional outlay in procuring the best seed is sure to be well repaid. The *Dictionary of the Farm* says:—"If the farmer selects the best seeds, chooses the proper time for sowing them, and has them carefully distributed and properly covered with earth, as their nature requires for the most perfect germination, and thus also protects them from the voracity of the birds and insects, he will have a much greater prospect of success than if he were careless and negligent."

In this country the old mode of sowing grain broadcast is that generally practised. To this mode there is the great objection—the uncertainty of having all the seed covered the same depth—some of it is buried deep in the soil, and some lying near the surface. By using the drill all the seed is deposited at one required depth. Another advantage of using the drill is the saving in the quantity of seed; this is, of itself, no inconsiderable item. To these may be added the felicity afforded by drill-culture for a free circulation of air between the rows, and for the extirpation of weeds.

Fall ploughing must be attended to. The provident farmer labors not merely for the present; he looks forward and makes preparations for coming seasons and for future years. By doing in the fall as much as he can of the work that would add so greatly to his spring work, he "takes time by the forelock," and when the busy seeding time comes he is prepared to make the most of every favorable hour.

Now, is this the only benefit to be derived from fall ploughing? The soil turned up deep and rough before the winter sets in receives the full benefit of the frost and snow, and is sure to be in better tilth, cleaner, richer and mellowed in spring.

Draw out compost heaps and any manure you have to spare on your meadows. Spread evenly, and, if necessary, harrow lightly and roll after spreading the manure. This top-dressing will afford you an opportunity for sowing a little fresh grass seeds on any bare

or thinly covered spots, and will not only enrich the meadow, encouraging an earlier and more luxuriant growth of grass, but will protect the crowns of the clover plants and more delicate grasses.

Keep up the condition of your live stock. For profitable and economical feeding in the winter it is necessary that cattle be in good condition when they are housed. It is much easier and cheaper to keep up good condition than to regain it if lost; and by this means you can finish off your fat stock early for the butcher, thus saving some weeks, or perhaps even months, feeding.—*Ass. Ed.*

The Apiary.

BEEES ON A SMALL SCALE.

There are many householders whose means will not enable them to buy a cow or to provide keeping for her were they in possession of one. But they may be equal to the purchase of a colony of bees and to provide hives for the swarms resulting therefrom. Bees, like other stock, require pasturage, but, unlike horses, cattle and sheep, they are free commoners, ranging at will in search of stores, nor can they be arrested and punished for their intrusion upon premises alien to their owners. A single colony of bees, in good condition in the spring, may be counted upon to double or triple their numbers in a single season, securing ample stores for winter consumption, while supplying a gratifying surplus each autumn for household uses.—This accumulation will prove most acceptable in families especially, while the price of butter rules so high as to place it beyond the reach of those not blessed with elongated and plethoric purses. Try a colony of bees as an experiment.—*Farmers' Union.*

BEE KEEPING.

Bee-keeping used to be a very crude affair.—It was carried on with gums or straw hives, inside of which everything was fastly fixed and all a realm of mystery. The bees were left pretty much to themselves, until the close of the honey season, when they were brutally smothered with brimstone fumes; and the colony being thus exterminated, its stores were appropriated to the use and luxury of the owner.

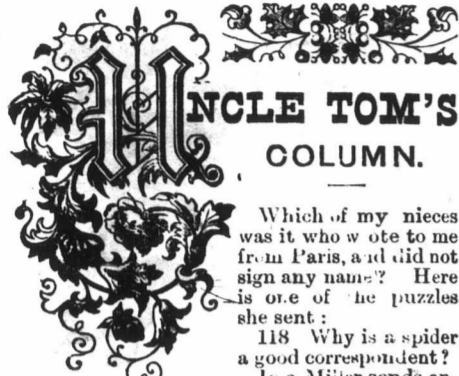
Now we have the movable frame hive, which gives the bee-keeper access to the interior of the colony, perfect control over it, and liberty to take the surplus honey without killing the bees. With this form of hive the loss of swarms by their going off to the woods can be prevented, queens can be given to stocks that become destitute of them, and weak colonies can be strengthened by giving them comb, bees or honey.

The invention of the honey extractor, or as some American apiarians prefer to call it, the *melipuit*, is another great step in advance. By the use of this contrivance the yield of honey in a single season can be doubled, and even trebled. By the application of centrifugal force the honey is thrown out of the comb, almost to the last drop, and on replacing the empty combs in the hive, the bees, as in duty bound, at once proceed to refill them. Often when they suspend work and will not put a drop of honey into a surplus box, though there is plenty of it in the field, they will replace the honey of which the extractor or melipuit has deprived them. The reason of this is obvious. Instinct teaches them to fill the body of a hive with a store of sweet; but when that is done their task is accomplished, and they are not covetous, like man, who goes on laboriously accumulating even after he has enough. They have not only a craven instinct, but an instinct of satisfaction. The well-filled hive appeals to this latter instinct. They know how to rest and be thankful. Take away a portion of their stores and the craving instinct comes into play again, and drives them forth as busy workers to the fields for fresh supplies.

Another modern improvement in apiculture is the importation and breeding of superior bees. Bees, like larger stock, deteriorate by in-and-in breeding, and may be improved by crosses. There are inferior and superior breeds of bees, just as there are of poultry, swine, sheep, cattle and horses. For a few years past Italian bees have been largely imported, and though it may seem an extravagant thing to give five or ten dollars for a queen bee—a little insect only about an inch long—it is no more so than to give a hundred dollars for a superior bull calf or ram lamb. The Italian cross has greatly improved common black bees, by giving them a dash of fresh blood, as stock-breeders would express it, and by imparting to them desirable qualities. The Italians are a hardier race; "busier than the little bus-bee" we have known from childhood; more prolific, more beautiful in appearance, and less inclined to sting.—*American Bee Journal.*

The muck heap is the farmer's bank, and everything should be added to it that will enlarge it, and increase at the same time its fertilizing properties.

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UNCLE TOM'S COLUMN.

Which of my nieces was it who wrote to me from Paris, and did not sign any name? Here is one of the puzzles she sent:

118. Why is a spider a good correspondent? To a Miller sends answers to puzzles and some new ones.

119. When is a man's nose not a nose? Louisa and Amelia Bobier send some very good puzzles. Amelia asks:

120. When does the blacksmith kick up a row in the alphabet?

Willie A. Rutherford is again on hand with answers to puzzles, and has done very well. I like Hattie Haviland; she takes great pains with her writing, and sends very correct answers. I want you, Hattie, to send me a new puzzle next time, so remember. F. K. Chittenden sent in answers too late for last month. He sends the following puzzle:

121. My 1st is in *lean*, but not in *fat*,
My 2nd is in *hand*, but not in *foot*,
My 3rd is in *gun*, but not in *cannon*,
My 4th is in *leg*, but not in *beg*,
My 5th is in *salt*, but not in *brine*,
My 6th is in *sun*, but not in *star*,
My 7th is in *dog*, but not in *cat*.
My whole is an island of very great fame.

James Peters sends answers and puzzles, but I have had all his puzzles in the paper before. William S. Playter also sends answers.

Here is a very nice letter I have received:

Riverview Farm, August 14th, 1873.

Dear Uncle Tom,—I always love to read your column, because it almost seems as if you were talking right to me. I am quite sure that you would be a jolly uncle to have around when a lot of young folks are together. Wouldn't you show them lots of games to play at, and I shouldn't wonder a bit if you would join in and play yourself.

We had a picnic last Wednesday, and it was splendid. Our Sunday School has one every year, and we have great times. I send some pressed pansies in this letter; I think they are so nice, and I know you would like to see what kind of flowers your nieces grow. I only wish I could send you one of the big squashes I raised all by myself. Father gave me some seed and told me where I could put it, and I took lots of care of it, and now there are some squashes on the vines so large that I can hardly lift them. Never mind, if father will only take me to the Exhibition this year, I will have one of them along and leave it for you with Mr. Weld, but dear me, I'm making an awfully long letter; so, good bye, Uncle Tom.

Your loving niece,
CLARA THOMAS.

Now, that is what I call a real pleasant letter. I am very much obliged to Clara for her good opinion of me, and she may well say that I would join in and play with the little ones, for I always do when I get a chance. What's the use of being cross and grumpy, even if you are old? Why, dear me, I can play "Sally Sally Waters," or "Oranges and Lemons," or any of the other old games just as well now as when I was young. Clara's pansies are very large and beautiful. I am sure she must have a good garden, and I am very much pleased that she should take such pleasure in it. Next spring I will send Clara a very choice pansy plant to take care of.

122. Which is easiest to spell, *Fiddle de dee* or *Fiddle de dum*?
JAS. WALLACE.

123. Spell blinding pig with two letters.

Here is another letter:

Dear Uncle Tom,—

I know not whether my puzzles which I have sent are acceptable or not, as I have not seen one of them inserted yet; however, I will venture to send you a few again this time.

LIZZIE ELKINGTON.

Paris, Ont.

Thank you Lizzie; your puzzles are acceptable, but among so many nieces and nephews I may at times fail to notice some of the most deserving ones. I am as glad as the Dutchman they tell a story about.

He had a wife and children and a lot of parcels, taking them off the steamboat, and when he supposed he had them all out counted them up and found 13 parcels. "Why, how is dish," said he, "dere vas vorteen dings I know ven I vent on board; v. t. is it I ish got vot ish lost? Dere ish de sassage, dey's all right; dere ish de pretzels, und dere ish mine frow, und dere ish mine bipe, und vat can it be? Oh tear, it ish to happy; I hat forgot."

So now, Lizzie, that I have found you out, come and help; I want a letter from you every month. Here are some of your puzzles:

124. Which of the reptiles is a mathematician?

125. Why is a man in Lincolnshire, with a ham in his hand, like a town in that county?

ANSWERS TO AUGUST PUZZLES.

123.—To-day. 104.—To keep his head warm. 105.—A man, a pough and a pair of horses. 106.—All begins with an A. 107.—It was never seen before. 108.—Cat. 109.—A thorn. 110.—Omaha and Washington. 111.—New Bedford. 112.—Perth. 113.—Nosegay. 114.—Page, two of them make a leaf. 115.—Insatiable. 116.—Wholesome. 117.—Strain 'at an 'at and swallow a camel.

118.—When I was a young Man I propose to my brother William that we should go Duck-hunting, so he said he was ready to go at once, but we would be very Hungry if we did not shoot anything Nice to eat, so I told sis er Charlotte to Ketch a Goose and Cook it, and to make some Ham Sandwiches; also to boil a sufficient quantity of Rice. My brother said this would be sufficient along with the Cold-water which we would find on the way. We bid sister Farewell. She said she had Good Hope that we would have Fairweather.

The only game of any kind we saw the first two days was a Black Bear, which, with great trouble, we killed. The next day being Rainy, we did nothing. The day after was Clear and we proceeded on our way. The road was very Rocky. After hunting a few days more I thought we were staying away 'toulon from home, and as the weather was getting very Chilly, we made a Start for home. A violent Storm arose, and a flash of lightning Split a large Tree into a Thousand pieces. Without any further adventures we returned home.



INNIE MAY'S DEPARTMENT.

This month I will give a few seasonable receipts. I do not hear from so many of you as I should like. Why cannot many of you who are such good housekeepers write to me, and help in the good work. Of course I know you are all very busy, but so am I, but what I want is to lighten all our labors by an interchange of ideas.

MINNE MAY.

BREAD AND BUTTER PUDDING.

Spread bread and butter, put a layer in a pudding dish, then a layer of apples, pared and cored, then another layer of bread, and so on till the dish is filled, having bread on the top. Prepare a custard with four eggs to a quart of milk and season to taste. Pour into your dish and bake. Beat the whites of two or three eggs to a stiff froth, sweeten and spread on the top before taking to the table.

HOW TO MAKE CHEAP FRAMES.

Cut strips of pasteboard about an inch wide the desired length, clip the ends to a point, and cover with any nice black cloth, like broadcloth or fine cassimere. Lap the ends at the corners of the frames, and fasten with a white or gilt button. Bind your picture and glass together with strips of gummed paper and glue on the frame. Hang against a white wall. Bronzed paper, which can be bought for eight cents a sheet, may be used instead of cloth, in which case a short strip across the corners of the frame is a great addition to its comeliness.

KEEPING EGGS FRESH.

The most convenient and satisfactory way to keep eggs fresh is to take an old tin pail and punch numerous holes in its bottom and sides, and, after filling it with fresh eggs, lower it into a kettle of melted tallow as hot as can be without burning one's finger when thrust into it; then lift the pail out quickly, and the tallow will flow out, leaving a thin coating on every egg. Remove the eggs from the pail, and pack them on their ends in a keg or barrel. Place in a cool cellar until wanted for use. Eggs have been

kept thus for more than six months—so fresh that expert judges supposed they were fresh. The eggs being so much colder than the melted tallow, a thin covering of cold tallow will be formed almost instantly, which will render the shell impervious to the air.

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 labeled—"James Epps & Co., Homoeopathic Chemists, London." Also, makers of Epps's Milky Cocoa (Cocoa and Condensed Milk.) 73-1-1

MARKETS.

London, Aug. 25th, 1873.

GRAIN.

White Wheat, new, \$1.10 to 1.15; White Wheat, old, \$1.00 to 1.10; Red Fall Wheat, \$1.00 to 1.05; Spring, \$1.15 to 1.21; Barley, 50cts to 59cts; Peas, 55cts to 60cts; Oats, 43cts to 45cts; Corn, 65cts; Buckwheat, 55cts.

PROVISIONS.

Eggs, fresh, per dozen, 15cts to 16cts; Keg Butter, 15cts to 18cts; Roll Butter, per lb., 20cts to 25cts; Crock Butter, 14cts; Cheese, factory, 9cts to 10cts; Lard, 8cts to 9cts; Honey, 15cts to 20cts; Tallow, rendered, 6cts to 7cts; Tallow, rough, 4 1/2.

HIDES.

Sheep skins, 25cts to 50cts; Lamb skins, 50cts to 65cts; Pelts, 25cts to 50cts; Hides, 6cts to 7cts; Calf skins, green, 10cts to 11cts; Calf skins, dry, 20cts.

PRODUCE.

Hay, per ton, \$12.00 to 16.00; Potatoes, per bushel, 70cts to 80cts; Wool, 36cts to 37cts.

New York Markets.

New York, Aug. 22nd.

Flour—receipts, 10,000 barrels; sales, 12,000 barrels; Superfine State and Western \$5.50 to 5.60; common to good extra State \$6.20 to 7.25; common to choice extra State and Western \$8.10 to 7.15.

Wheat, receipts 56,000 bush; sales 78,000; No. 2 Milwaukee \$1.51; No 2 Chicago quiet, at \$1.44 to 1.47; white western \$1.55.

Rye at 92 to 93c.

Corn, receipts 157,000 bush; sales 83,000 bush; New mixed Western 54c to 57c; Old do. 68c; Old store Western 46c.

Butter, 25c to 32c.

Cheese, 12 1/2 to 13c.

Buffalo Live Stock Market.

Buffalo, Aug. 21st.

Cattle—The receipts of cattle to-day including 39 cars reported to arrive, have been 850 head. The market is dull at 12 1/2c off on good cattle, with common entirely neglected. About 1,300 head were disposed of. Sales of 245 Illinois steers, ranging from 1,064 to 1,253 lbs., at \$5.50 to \$6; 221 Ohio steers, ranging from 999 to 1,365 lbs., at \$5.12 1/2 to 5.80; 10 Michigan steers, ranging from 933 to 1,069 lbs., at \$3.50 to 4.40.

Sheep and Lambs—The receipt of sheep and lambs to-day have been 3,200 head, making the total supply for the week thus far 20,000 head. The market is slow and weak at yesterday's prices. Sales of 1,242 Canada lambs, ranging from 55 to 70 lbs., at \$6 to 6.62; 148 Canada sheep, ranging from 117 to 141 lbs., at \$5.50 to 5.60.

Hogs—The receipts of hogs to-day, were 4,900 head, making the total supply for the week thus far 17,900 head. The market reacted this morning, and prices declined 20c per cwt. Sales of 750 head of Ohio, Indiana, Missouri and Michigan hogs, ranging from 180 to 250 lbs., at \$4.85 to 5.25.

Valuable Farms for Sale.

105 ACRES CHOICE LAND within half a mile of the Village of Aylmer, an important station on the G. W. (Air Line) R. R. Co. 50 acres cleared, the balance heavily timbered with Beech and Maple, and a good supply of Ash for Rails.—Frame Dwelling and Barn, and abundance of good water. A choice Dairy Farm. Price \$4,500, Cash, \$2,000; Mortgage for balance.

Also, 100 acres choice land within 1 1/2 miles of Aylmer, 60 acres cleared; woods—Beech, Maple and Ash. Well watered. Price \$4000. Terms liberal to suit small capitalists.

Apply to—

DANIEL STEWART,
AYLMER P. O., Elgin Co., Ontario.

CANADA LIFE ASSURANCE COMPANY.—Established 1847. Assets including Capital Stock, 2 1/2 Millions. Cash Income about \$10,000 per week. Sums assured over \$11,000,000. Over \$900,000 have been paid to the representatives of deceased policy holders since the formation of the Company. The following are among the advantages offered:—Low rates of Premium; Canadian Management and Canadian Investments; Undoubted Security; Policies absolutely secured to Widows and Children; Policies non-forfeitable; Policies indisputable after 5 years in force; Policies issued on with profit system receive three-fourths of the profits of the Company; Policies purchased or exchanged or loans granted thereon. Premiums may be paid yearly, half-yearly or quarterly, and 30 days of grace allowed for payments of all premiums. Tables of rates for the various systems of assurance may be obtained at any of the Company's offices or agencies. A. G. RAMSAY, Manager and Secretary. R. HILLS, Assistant Secretary. Hamilton, July 3, 1873.

EXCELLENT

Farm and Stock for Sale.

140 ACRES OF EXCELLENT LAND.—adapted for a grain or dairy farm. Four miles from a thriving village and a G. W. R. Station, in Canada. Frame Barn, House, Sheds, and Young Orchard. Well watered; on one of the main leading roads of Canada. Price, \$40 per acre.

Also, another farm, half a mile from the above mentioned lot. This farm contains 175 acres good land, well adapted for grain or dairy. Price, \$35 per acre.

Also, 1 Durham Bull, took first prize at Provincial Exhibition; 7 Durham Cows; 2 Yearling Heifers; 7 Calves; pedigrees furnished. This lot may be had with either or both the farms. Price of Durhams, \$2000.

These farms we have personally inspected, and can safely say that they are offered at a bargain.—They must rapidly increase in value; we believe they will be worth double the price asked in 8 yrs from this date.

Applicants must send 25 cts. for further particulars. Address FARMERS' ADVOCATE Office.

1873.

GREAT CENTRAL FAIR!

AND AGRICULTURAL & HORTICULTURAL EXHIBITION

Will be held on the

CRYSTAL PALACE GROUNDS

In the CITY OF HAMILTON

on the

30th SEPT., AND 1st AND 2nd OCT.,

When \$4,000 will be offered in Premiums for Stock, Agricultural and Horticultural Products. Implements, Manufactures, Fine Arts, Ladies' Work, &c., &c.

Competition Open to the World!!

Prize Lists and Entry Forms can be had on application to the Secretary.

JOHN WEIR, JR., SECRETARY,
West Flamboro' P. O.
W. H. HURD, PRESIDENT,
Hamilton P. O.

Atchison, Topeka & Santa Fe RAILROAD.

THREE MILLION ACRES

LANDS.

LIBERAL TERMS TO IMPROVERS.

11 Years Credit, 7 Per Cent. Interest.

NO PART OF THE PRINCIPAL PAYABLE FOR 4 YEARS

FINE GRAIN-GROWING REGION.

Tracts of one and two thousand acres available for Neighborhood Colonies, or for Stock Farms.

EXCELLENT CLIMATE, WITH PURE FLOWING WATER.

"I would say, that in the course of many years, and through extensive travel, I have not seen a more inviting country, nor one which offers greater inducements, with fewer objections to settlement, than these lands of the A. T. & S. F. R. R."

Extract Report of Henry Stewart, Agricultural Editor American Agriculturist.

For full particulars enquire of

A. F. TOIZALIN,

Land Commissioner, TOPEKA, KAN.

YORKSHIRE CATTLE FEEDER.

FOR FATTENING AND BRINGING INTO CONDITION HORSES, COWS, CALVES, SHEEP AND PIGS.

THE YORKSHIRE CATTLE FEEDER
IS RECOMMENDED AND USED BY
FIRST-CLASS BREEDERS.

Stock fed with it have always taken **FIRST PRIZES**. Milk Cattle produce more milk and butter. It fattens in one-fourth the usual time, and saves food.

Price 25c., and \$1 per Box
A Dollar Box contains 200 feeds.

HUGH MILLER & CO.,
Agricultural Chemists,
167 King St., East, Toronto.
For sale by Druggists everywhere. Also at
the Agricultural Emporium, London. 1-4i

3 Durham Bull Calves for Sale!

PEDIGREE GIVEN. Color RED and WHITE.
Address—JOS. H. MARSHALL, London P. O.

AYRSHIRE CATTLE.

MY ANNUAL AUCTION SALE OF AYR-
SHIRE CATTLE will take place on the
EXHIBITION GROUNDS

During the
PROVINCIAL EXHIBITION IN LONDON.

The following Pure-bred Ayrshires will be posi-
tively sold by Public Auction, without reserve,
namely:—

- 3 Cows in Milk, over 4 yrs. old,
- 3 Cows, 3 years old,
- 3 Heifers, 2 yrs. old,
- 3 Heifer Calves,
- 3 Bulls, aged 3 yrs.,
- 3 Bulls, aged 2 yrs.,
- 3 Bulls, aged 1 yr.,
- 3 Bull Calves.

Terms of Sale Cash, or approved notes at 4 mos.,
at 7 per cent. interest.
EXAMINE THE STOCK. It will be on
the Exhibition Grounds. Procure handbills on the
Grounds for further particulars.

GEORGE MORTON,
KINGSTON, ONT.

GREAT SALE
OF
PURE - BRED STOCK ! !

The MORETON LODGE
HERDS AND FLOCKS.

SHORT HORN & HEREFORD CATTLE
COTSWOLD & SOUTHDOWN SHEEP
BERKSHIRE AND YORKSHIRE PIGS

To be sold by
PUBLIC AUCTION, WITHOUT RESERVE,
At Moreton Lodge Farm,
GUELPH, ONT., CANADA,

ON
Wednesday, 15th Oct., 1873

COMMENCING AT 1 O'CLOCK, P.M.

Catalogues will be sent on application.
FREDERICK WM. STONE.
Sept & Oct

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. B. TAYLOR. Will be sold without reserve

on
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In pursuance of a determination reached with
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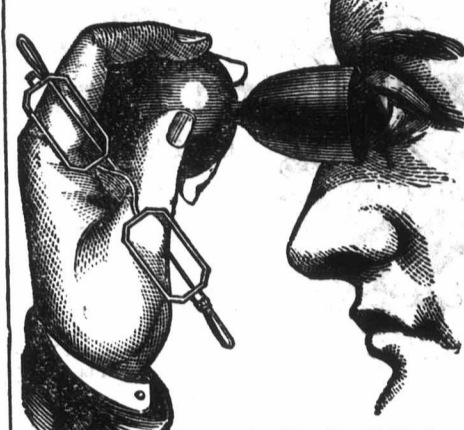
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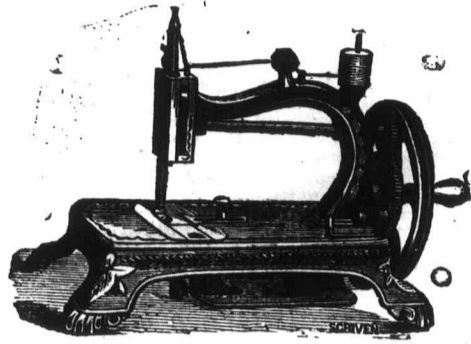
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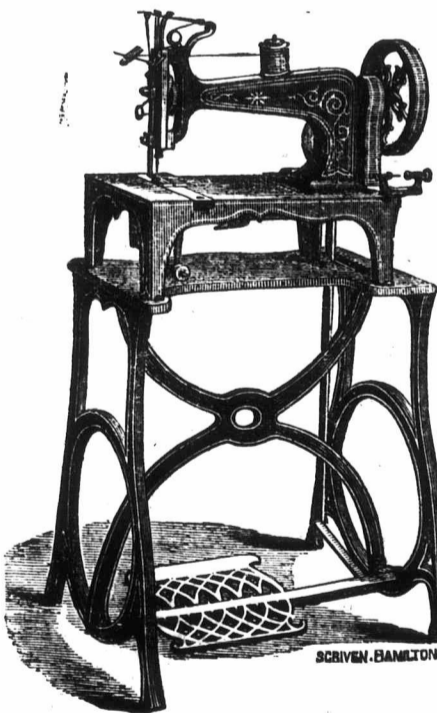
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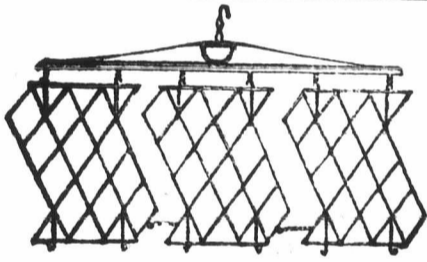
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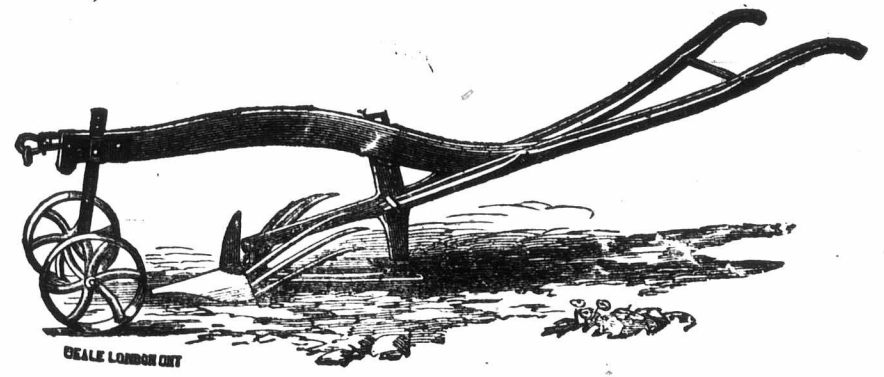
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4 in A & M, Aug. & Sept.



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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, Mingo Proof, &c. &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 1 oz. sample packages, sent per mail, post-paid, 20 cts.; 50 cts. per peck; \$1.75 per bushel. In lots of 10 bushels and over, \$1.55 per bushel. Peck bags, 12 1/2 cts.; cotton bags, 45 cts. The above prices may vary if the general market value of wheat alters from the present prices. The wheat will be shipped from the station most convenient to where raised. Address W. WELD, London.

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Ellwanger & Barry offer to Planters and Dealers the largest and most complete stock in the country of Standard and Dwarf Fruit Trees, Grape Vines, Small Fruits, Ornamental Trees, Shrubs, Evergreens, New Rare Fruit and ornamental trees, New Rare Green and Hot House Plants, Bulbous Flowering Roots.
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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, exact 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 collection of accounts, if in arrears.

FARM FOR SALE.

DUNWICH TOWNSHIP, Lot No. 8, on the Talbot Road, 50 acres good soil. Frame house; barn and drive house; good orchard grafted fruit; spring water runs all the year round; well fenced, in good cultivation. Within one mile of Wallace-town.

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CONSISTING OF 10 ACRES OF LAND within 15 minutes walk of the Market Square, situated on two gravel roads. Soil of excellent quality.— This lot is well adapted for a Market Garden, gentleman's residence or dwelling, into small lots. A good frame house is now on the premises, with barn, sheds, stabling, &c. Information can be furnished on application at the office of this paper. N. B.—Applicants must enclose 20 cts. in future to ensure a reply, to pay for stationery, &c.

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WITHIN a mile of the Court House, London; 3 acres bush, 3 acres clear. In a good state of cultivation. Brick cottage containing 5 rooms.— Price \$2,200. Apply at this Office. 6-11

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, 15 acres wood. Creek runs through it. Price \$6,200. A rare bargain; apply at once. Address W. M. WELD, Agricultural Emporium, London, Ont.

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EDITORIAL
Agricultural
145; See
Crop Sta
No. 3, 14
POULTRY
A Vari
Keeping
ing, 146;
STOCK AN
Advice
cases, 14
Cheese D
147; Chu
Kerv Ca
Easily B
Stock, 14
Butter in
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AGRICULT
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