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The Farmer's Advocate!

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Letters enclosing remittances, &c., only acknowledged when specially requested. Our correspondence is very heavy, and must be abridged as much as possible.

Visit to the Centennial Exhibition—No. 2

There are always two sides to any question. In our last number we gave a brief account of the bright side. We will now give a few jottings from the dark side that may also be of interest. The Centennial Exhibition has been got up in such an Utopian style as to be in advance of the times; or, at least, in advance of direct pecuniary gain to the principal promoters. The great loss will be borne by about half-a-dozen wealthy Americans, to some of whom a million dollars is of no more consequence than five cents to some inviduals. They have done a noble work, and done it well. It will redound to their honor. The attendance of visitors has not been one quarter so great as anticipated. Many private exhibitors and caterers for the public will lose from twenty to fifty thousand dollars. Perhaps the greatest gain will be to the railway refreshment stations. Their charges are high and accommodation low. The keepers of these petted and fostered establishments are reaping the profits that should be divided among the stock-holders of railways, or invalided servants. Seventy-five cents for twenty cents' worth is too much. The unnecessary number of horses killed by over-work on street cars is a disgrace to the corporation. The ancient English house erected has but a sorry resemblance to reality. No tree, shrub, flower or—woman. What a farce!

The monster picture, spoken of in American papers as the largest in the world, is the worst thing we saw on our journey. It is a disgrace to the exhibition of art to the country and to society, both in the subject and in an artistic point of view.

In the dairy department much was expected, but the heat melted the butter, and caused the necessary removal of some of the cheese. It is a wonder to us that everything is in such good order as it is. It will repay any one that can afford it to take a trip and see it. One excursion train has been run from Hamilton to Philadelphia and return for $8. There are four excursion trains to be run from St. Thomas—one each week in September. Grangers $10, the general public $11. From Toronto, $8. From London an excursion train is to be run for $10. From Suspension Bridge or Buffalo the charge has been as low as $5, while from Detroit (the greatest distance) $6 has been the fare. The American lines carry passengers at the present time very much below the rate charged by Canadian railways. Many that are near the lines will prefer purchasing their ticket in the States.

Seed Wheat.

Which is the best kind to sow? is a question that is often put to us by callers and by our mail correspondents. We cannot answer the question satisfactorily to all. There are some farmers that will continue to sow their favorite variety for years after it has ceased to be profitable, and despite all the persuasions that may be brought forward to induce them to change their variety.

We have seen hundreds of acres of Soules wheat sown the past season; not one field of that variety have we heard of that would half pay the expenses on it. The Arnold's, or Gold Medal wheat, if any different from the Soules, is no better. The Delhi, Treadwell, Michigan Amber, Mediterranean, &c., have in some instances yielded well, and there are some good, fair samples of each variety to be procured, but they are scarce.

The Scott wheat, the wheat we have for many years commended, has fared much better than any of the above named varieties. Still there are some few localities where that may have not exceeded other varieties, but they are very rare, and from personal observation we feel safe in saying that the farmers this year alone have not as much wheat to sell by one million dollars' worth as they would have if they had sown more of the Scott and the Clawson wheats. The Scott wheat is a bald, white-chaffed, red wheat; it shells very easily, and gathers up or tellers well in the spring; it improves more towards harvest, and turns out in threshing better than the appearance generally indicates. Many of the afore-mentioned varieties make a great show on the ground, but a small show when the grain is put into the bin.

We consider the Scott wheat the least liable to rust.

The Clawson is a bald, red-chaffed white wheat; some call it the Seneca, but a farmer named Clawson first selected it from other wheat grown by him, carefully cultivated it for years and gave it the name, and in honor to the originator or introducer, we think it proper not to deprive Mr. Clawson of his right. This valuable variety has on an average yielded much more than any other wheat raised in Canada for the past two years. It appears to stand against the winter changes better than any other variety, not excepting the Scott; it is a strong, rampant grower and stands well. In some few instances it has not surpassed the Scott. In some localities it has been the only wheat that has yielded a profitable return. There are some mixed and foul lots, or badly shrunken lots, that dealers do not like to touch, to be procured at low rates, but really good, clean seed is scarce of this variety. The extreme drouth effected most of it to some extent.

Mr. S. Wade, of Elgin county, informs us that 27 bushels have been raised from one bushel in his county. Mr. J. B. Freeman, of Norfolk, says he examined with a microscope the Clawson and Delhi wheats grown in the same field. The Delhi was full of midge and the crop destroyed; the Clawson was the best wheat in his county. In Brant county, Mr. Sovereign had an acre of Clawson in a forty acre field; it yielded better than any other wheat in that locality. The sample of Clawson raised in Middlesex is the best we have seen. From Oxford, Kent and Huron we have heard of instances where the Scott is still ahead; these two varieties throw all others a long way in the rear this year.

In answer to the questions put to us, we say—sow Scott and Clawson wheat; they are the two safest varieties.

Did the Foot and Mouth Disease Make its Appearance in Canada?

Professor Smith, of the Toronto Veterinary College, has communicated to the *Veterinary Journal* some particulars of the outbreak in Canada of this disease, *now admitted* to have been the Foot and Mouth Disease. He reports as follows:—

Last year we had an outbreak of the foot and mouth disease among the cattle in Ontario. It came through the medium of some sheep imported from England in the month of August. They were shipped from England, I believe, apparently healthy, duly inspected, and furnished with a clean bill of health (one of the fallacies of inspection). When several days at sea some of them were noticed to be lame and sore, and the attendant thought they were cases of footrot, or perhaps simple bruises. These sheep were brought to the Province, and located on two farms, 60 miles apart. These cattle on these and neighboring farms soon became affected with *eczeema epizootica*, and there was considerable excitement in the districts so infected. On the part of the Ontario Government I was requested to investigate the circumstances connected with the appearance of the disease, and also to report measures to prevent its spread. In all, about 200 head of cattle were affected, and I had no difficulty in tracing the origin of the disease to the sheep already referred to."

This letter is commented on by the *Veterniary Journal*, the *Agricultural Gazette* and *National Live Stock Journal* (American). In the action taken at the time by the Editor of this paper in directing the attention of the Dominion Government to the existence of this disease in the neighborhood he was actuated solely by a desire to serve the agricultural and other interests of the country. We would now respectfully ask the editor of the Toronto *Globe* and *Mail* and other papers to review the course they took, and make a suitable correction in their next issue.

September on the Farm.

Is the incoming month to resemble the months departed—are we to have the heat of the past July and August continue through September? From day to day this inquiry is heard from those whose lot has fallen to them to pass their wearisome nights and days in the stifling air of closely built up towns. Well may they long for the free air of the open country, with its hills and living streams, and the leafy shades at all times so pleasant. September has come, rich in her peculiar and appropriate beauty, rich in the fruits she bestows upon man as the reward of industry—gifts bestowed, and at the same time rewards.

In this month we may expect some change in the temperature. The heat of the midday sun may lose little of its intensiveness; for the first fortnight especially this is likely to be our experience, but the nights will have become much shorter and cooler, and evenings and mornings will be pleasant. Though the woods may lose somewhat their green hue, they will be but exchanging it for the bright tints that the fall crowns our forests with in our Canada.

And now to our farm work for September. We may before the month has departed get a slight foretaste of the coming winter—a night's light frost, pinching a few of our more tender garden plants, coloring the corn leaves, warning us to prepare for the coming of weeks and months of incessant frost and snow.

The hurry of harvest is over. We have gathered in our grain. Let us see to it that it is secure—not the grain only; the straw has its value, and that, in our long winters, no trifling one. It requires no small quantity of fodder to support for half a year the live stock of a farm. Well saved straw is better than ill saved hay. If you cannot find room for it under the roof of your barn, let it be well stacked, as carefully as you would the hay itself—the heart of the stack well filled as the stack is building, that no rain may obtain a lodgement in it. Dress the stack a few days after it is built, and it may have settled down; add to the top if necessary, and rope it to keep it from being disturbed by any casual storm.

The sowing of fall wheat is, next to the harvesting of the crop, one of the most important works on the farm. That we may reasonably expect a good return, a suitable soil, well prepared, clean seed of a good quality, and properly sown in favorable weather, are requisite. A suitable soil—not too light, loamy or sandy, not too retentive of water, strong enough to bear a stiff straw and heavy ear, and yet not so stiff as to be bound in a hard mass in drought; such is known as a wheat soil. Other soils may, by the skill and labor of the husbandman, give good wheat crops; wet land can be drained. Stiff clay may be made more friable; suitable tillage and the application of manures may supply much that is wanting.

Grass seed is usually sown in the fall, and when sown on a well prepared seed bed is seldom a failure. As with all other plants, it is of great importance that there be an early germination of the seed, and a vigorous early growth. For this purpose, the wheat ridge, well cultivated and in heart for the fall, is just what is required. Timothy grass is almost exclusively sown here. It generally yields a good crop, and its hay, if to be sold, meets a ready sale. It would, however, be well to consider the advisability of sowing a mixture of other grasses, as is done by the farmers in Britain. By confining ourselves to Timothy only we can never have good pastures.

Top dress meadows and other grass lands as far as your means permit. A heap of composted earth, sods and such matters as are usually suffered to waste, will, if used for top dressing grass lands, enable them to bear more stock and in better condition. Muck is very useful for such purposes.

"Keep the plow jogging and you will never want corn for your horses." And not even in spring is it more necessary to follow the advice of the old proverb. Fall plowing prepares the ground to receive the full benefit of the winter's frost and snow, and that is no little gain; and not only is the soil rendered more friable by the frost and more fertile by the ammonia applied to it by the snow, but, in addition, every acre plowed in the fall saves so much spring labor. Fall plowing should be rough and strong—the heavy scores exposed to the frost—not harrowed—the furrows well cut—a free passage opened for the water—all water cuts and mouths of drains cleaned up. Then close up your field—all right for the winter!

Look to your live stock. See that they are well supplied with food and water; never suffer them to fall off in condition. Milk cows, young stock, sheep and pigs pay the farmer when kept in good condition—not otherwise.

Disease of the Wheat Crop—Rust.

We had confident hopes during the earlier summer weeks that the approaching harvest would be at least equal to the preceeding one for the manifold increase of our grain crops. Moisture and heat, the great agents of vegetation, had caused a more than usual growth of stem and leaf, and the bloom gave fair promise. We have been disappointed. We anticipated an average of twenty or twenty-five bushels of wheat, and the threshers give us returns of ten. The heat and moisture have been the means of reducing, not increasing, our yield. The grain has ripened before it had time to arrive at maturity, and it is shrunken; a thin and hungry instead of a plump, heavy kernel. One farmer who had a promising crop had it so shrunken from its repening in four days. The intense heat, and, added to the heat, the rust, have made our plump grain like the tailings from the fanning mill.

What is wheat rust? Whence does it come? Can we guard against it? The latter question is now brought practically before us. The genus rust comprehends numerous fungi, all parasites attaching themselves to different plants, feeding on them and thereby, in the cases of many of them, injuring them greatly, and in some instances totally destroying them. As a parasite, it is classified with smut and bunts, though it is a distinct genus. The attacks of rust are confined at first to the leaves of the plants, and, while it is so, little injury is done, but it is a serious matter when the germ is attacked. That which was designed to nourish the germ is then diverted from that for which it was designed—drawn away by the parasite for its own nutriment, and the grass, deprived of its neccssary food, becomes lean and shrivelled. Red wheat is comparatively safe from the attacks of rust. White wheat is very subject to them. It is more difficult to guard against rust than against smut. The vitality of she spores (seed) of smut may be destroyed by pickling or steeping in some preparation the seed wheat to which they have adhered. Of the spores of rust so many fall to the ground that no preparation of seed wheat is a preventative against their growing again on the same soil. *The only remedy is rotation of crops.*

If rust proceed from spores, why is it that it is only some years that it is known to grow injurious parasites? As the seeds of certain diseases of mankind are known to exist at all times in some localities, and only to be epidemic under certain atmospheric influences, so it is said that the spores of rust are in the atmosphere, or perhaps in the soil, unperceived till such time as the state of the atmosphere, as it has been this year, is favorable to their germination. Farmers dread foggy or damp, moist weather at the time of the filling and maturing of the grain.

Are Potatoes Poisonous?

In the *Housekeeper's Manual*, by Mrs. Stow and Mrs. Beecher, the following paragraph appears:—The potato, nutritive and harmless as it appears, belongs to a family suspected of very dangerous traits. It is a family connection of the nightshade and other ill-reputed gentry, and sometimes shows strange proclivities to evil; now breaking out uproariousiy, as in the noted potato rot, and now more covertly in various evil affections. For this reason scientific directors bid us beware of the water in which potatoes are boiled, in which it appears the evil principle is drawn off; and they caution us not to shred them into stews without previously suffering the slices to lie for an hour or so in salt and water."

What next is to be put under the ban and its use forbidden. Those wiseacres, the vegetarians, forbid the use of animal food, *in toto*, not content with the old prohibition of pork, which allowed man to eat other flesh. Another class would interdict the growing of barley, because from it are brewed malt liquors said by them to be death-dealing beverages. In corn is contained the principle of alcohol, awaiting the distilling process. How many headaches, how much nervousness and even hysteria have been asserted to be breaking in a chest of tea we know not, but alarmists have pronounced them to be there.

'Tis true rot has affected the potato, nor has its virulence wholly ceased, but has not wheat, the staff of life, been scourged by rust, blight, mildew, and its properties as a healthy food seriously affected, as well as its yield decreased? We select the wheat as the most valuable of our breadstuffs, but every plant designed for the use of man is liable to disease.

The potato, it is true, belongs to the same family as the nightshade. Solanum comprehends many varieties, one at least poisonous, but it does not necessarily follow that the potato is unfit for human food. The element that in the nightshade makes it poisonous may not exist in the potato, or, if it does, its injurious property may be neutralized by other elements so as to render it innocuous.

But the best proof of the potato not being poisonous is that it has been used as an article of human food in the Old World and the New since its first introduction into Britain in the time of Queen Elizabeth—in some places the principal food, and in no instance with fatal effects. It has been cooked in a greater variety of modes than almost any article of food, and there has never been an authenticated case of its proving deleterious to the human constitution. But we are told to "beware of the water in which potatoes are boiled." We have not, we confess, had any knowlege of potato soup, but whether injurious to the health or not, it would hardly be very agreeable to the palate, though it might be little worse than the water in which some other vegetables are boiled.

Canadian Barley.

The Americans are becoming a beer-drinking people, The ale and porter from some of our Canadian breweries are becoming known in American cities, and, we may add, the more they are known the better they are liked. The brewers of the States are all doing a larger business than

they did, though their malt drink is admittedly inferior to that of the Dominion. One cause of this inferiority is the inferiority of their barley to the Canadian. We have in the columns of this journal ere now directed the attention of our readers to the higher price paid in American markets for Canadian barley than that of their own raising. Our barley they must have, despite of prohibitory tariffs and higher prices. So desirous are they for our continued cultivation of this coveted grain, and for our further improvement in its cultivation that it has been made the subject of special premiums at the International Exhibition. In addition to the prizes given for barley by the Centennial Commission, the Amerieau Malsters Committee have arranged for a competitive exhibition of barley of this year's growth, in which they offer a prize of seventy dollars in gold for Canadian barley; forty-five for the best barley grown in Ontario, and twenty-five for the best grown in Quebec. These prizes are offered to induce our farmers to take a still greater interest in the cultivation of the cereal, and the selection of the very best qualities for seed. We hope the spirit of emulation, increased by the competion, will have the desired effect, and that the Malsters' Committee will find offered to them for their purchase, barley of a quality even superior to any we have yet grown or exported. The full capabilities of Canadian soil and climate, and Canadian agriculturists have yet to be developed,

The crop of barley has this year been light, but it has been an exceptional season. Owing to the unfavorable weather it was late sown. This and the rapidity of the ripening of the grain accounts for the want of the usual plumpness in the grain and number of quarters to the acre. But we are not discouraged. We have succeeded before and we will try, try again. Such barley as we can grow is sure to find a ready market and remunerative prices.

Disease of Wheat—Smut.

It is often necessary for agricultural writers to be guilty of repetition. So often is an article read, laid aside and then forgotten, unless there exists at that time a necessity for the reader to put the lesson in practice, that in this science, as in others, we need repetition to aid our memory. Add to this that every year adds many members to our list of readers, and it will be admitted that if we betimes return to a subject treated of before, it is not without good and sufficient reasons.

Smut, it is generally known, is a fungus, and as such a vegetable possessed of vegetable life. Destroy this vitality and you destroy its power of reproduction. On this basis are founded the various methods proposed for preventing the great injury it would cause if left uninterruptedly to draw its nutriment from the filling and maturing grain. This question is one of great importance now, as we may sow the seed of smut with our seeds of wheat. If it be not killed before being sown, it will spring up with the young plant, grow with the flower bud, and finally occupy the whole interior of the grain. It has been said that a grain of wheat contains many millions of sporailes, each sporaile the germ of life.

Different remedies have been tried for the destruction of this fungus, some of them in many instances thoroughly efficacious, wholly destroying the vitility of the spores, without in the least injuring the germinating property of the wheat. The following remedy has been highly recommended: Make a strong solution of sulphate of soda (Glanber's salts); steep the seed wheat in this solution, and dry it off with powdered quicklime, the effect of which is to decompose the sulphate of soda, the sulphuric acid combining with the lime to make sulphate of lime or gypsum, while the caustic soda is left behind to destroy the spores of the parasite.

A distinguished Scotch agriculturist, in regard to pickling seed as a preventive of smut, says:—"I have long been of opinion that ball-smut is a fungus propagated by adhering to the seed, and unless this fungus is destroyed before being sown all the grains infected by it will be sure to produce diseased ears. Smut is of two kinds. In one of them the smut or black powder flies or wastes away before the sound wheat becomes ripe, while in the other the powder is enclosed in a skin frequently strong enough to remain unbroken when passing through the threshing machine. The larger number of the balls, however, do get broken, the powder discoloring the sample, giving it a disagreeable smell and a peculiar oily feeling. It is this variety which is destroyed by pickling. The other appears to be propagated in some other way; at least, as yet no remedy has been found for checking it. Many years ago I rubbed smut balls among clean wheat, then pickled part, and sowed both. The result was the pickled seed produced a healthy crop, while of the unpickled portion there was hardly one sound ear. I have again and again seen the sowing of fields finished with unpickled seed te'l to the spot where the dressed and undressed seed met. Old wheat should not be pickled, as its vitality will be sometimes totally destroyed by it, and the fungus itself seems incapable of growth when upward of twelve months old. I am far from saying that ball invariably follows when undressed wheat is used for seed, as by a careful selection of seed this may be avoided for years. But the little trouble and expense saved by not pickling seed is trifling indeed in comparison to the security given. I have tried pickling barley for blackheads, where the powder blows off before the grain in ripe, but, as in wheat, without success. Still, I think it is worthy of further trial, as it has appeared to me for the last two or three years that many of the blackheaks in both oats and barley are more nearly allied than formerly to the true ball in wheat. I should like to see experiments made by steeping grain different lengths of time in sea water, or in water salted to the strength of swimming an egg. This is said to be a remedy against mildew and rust in warm climates, and possibly it may prove equally efficacious in Scotland."

Our own practice has been one practiced from time immemorial. It is as follows:—Make a strong pickle—strong enough to float an egg; in it steep the wheat for some hours—long enough to kill the spores of the fungus, but not so long as to injure the vitality of the wheat. Then spread the wheat on the barn floor and dry it, as in the case of other remedies, with the powdered quicklime. We never knew this remedy to fail in preventing the growth of smut. Instead of sulphate of soda, or brine, blue vitrol is often used for steeping wheat. We believe it is now more generally used than any other remedy.

Nova Scotia Provincial Exhibition.

The Secretary of the Provincial Exhibition has published the General Regulations and Prize List for the exhibition to be held at Truro in October next, and the Nova Scotians are already bestirring themselves, hoping to make it equal to some of those more favorably situated. The province, though not equal to Ontario in her climate or soil, has been making considerable progress in agriculture, and in some productions rivals the most favored parts of the Dominion. This is especially the case with oats and potatoes. The Exhibition is not to be limited to agricultural productions we believe. It is to comprise horses, cattle, sheep, swine, poultry, roots and vegetables, grain and field seeds, grain manufactures, &c.; dairy products, woollen manufactures and straw goods; agricultural implements and machines; fruits, ornamental plants and flowers. In Cape Breton, the part of the Province generally thought the most backward in agricultural advancement, they are entering heartily into the project. A splendid opportunity, they say, is now offered them to exhibit samples of the excellent fruit and vegetables which are grown on Cape Breton and so little known outside the Island. Cape Breton, in mines and minerals, the *Sun* of Truro admits, excels any part of the Province, and if her agriculturists bear away the prizes from the Provinciaal exhibition, she will occupy an enviable position among the maritime aspirants for agricultural honors.

Orchard and Garden.—No. 7.

HINTS FOR SEPTEMBER, BY H. ORTI.

On examining our trees, nothing looks so bad as the appearance of dead limbs, blighted tips, suckers, &c. These at once should be removed as well as the fire blight on the pear and black knot in the plum, their remaining will do no good, offering only harbors and hiding places for all kinds of vermin, while their removal will be a benefit to the tree and will leave a healthy appearance with the orchard. Be careful to burn all your trimmings or dispose of them in some manner as not to leave them lying about in heaps or otherwise—as eyesores and places for mice to congregate and breed only to sally out when other food has been exhausted to girdle and destroy your trees.

Old orchards might be renovated and get a new lease of life by having quantities of lime, ashes, bone dust, old manure, or any kind of rubbish and decaying matter that may be thickly spread under the trees and thoroughly and deeply ploughed in. This will restore in a great measure the plant food and substance for making new wood, and consequently a renewal of former productiveness. The best way we think to renew an old orchard, however, is by planting a new one, planting such varieties as are now known to be the most useful for every purpose and the kinds known to succeed in your locality. The average profitable usefulness of an orchard is about 25 years, with good care longer, which means proper cultivation, good soil, common sense, pruning and hardy varieties.

Hardy varieties of apples. The following varieties we would advise for planting on a large scale, varying the number of trees of each variety according to the ideas intended to be carried out whether for foreign shipment or home markets :—Early Harvest, Red Astracan, and Duchess of Oldenburg, for early ones; Maiden's Blush, Gravenstein, St. Lawrence, Colvert, and Alexander, for fall varietes, and Golden Russet, Snow, R. I. Greening, Baldwin, N. Spy, King J. Co., Blenheim, Orange, Ribston and Fall or Holland Pippin, Swaar and Hubb. Nonsuch for winter keeping and shipping qualities.

The Lady apple and Swazie Pomme Grise commands high prices as dessert apples in old country and American markets. We have found the Swaar to excel all other kinds we have tested in its keeping qualities.

Picking or gathering the fruit is very often done in a careless manner, in fact to much care cannot be exercised so as not to bruise the fruit or injure the fruit buds upon which depends future crops—to guard in a great measure against this you should try the fruit in different parts of the tree by turning them one way or the other, if they quit the tree easily it is a sign of maturity and time to gather them. According as the fruit is picked it should be carried into some convenient dry place and allowed to lay in heaps for about two weeks or so in order to let them sweat, which will make them keep longer, and render them much better for use than if put up finally as soon as pulled.

Exhibiting—As the season for exhibitions is rapidly approaching everyone who grows fruit should exhibit. You will be sure to reap some benefit from so doing, in learning varieties, or

getting such information that will be of benefit to your business.

In figure 1 we have a representation of a handy fruit ladder of which there should be several in every orchard, of simple construction which will be readily perceived in the cut, made out of a scantling or larch pole with oak or ash rungs, let through with an inch augur. The pole should be morticed into a piece of any convenient size about 3 feet long to act as a foot or support to keep the ladder steady.

For immediate shipment the fruit should be carefully assorted, rejecting all small, uneven or injured fruit. Place a layer evenly in the barrel setting the fruit on its base, then fill in carefully

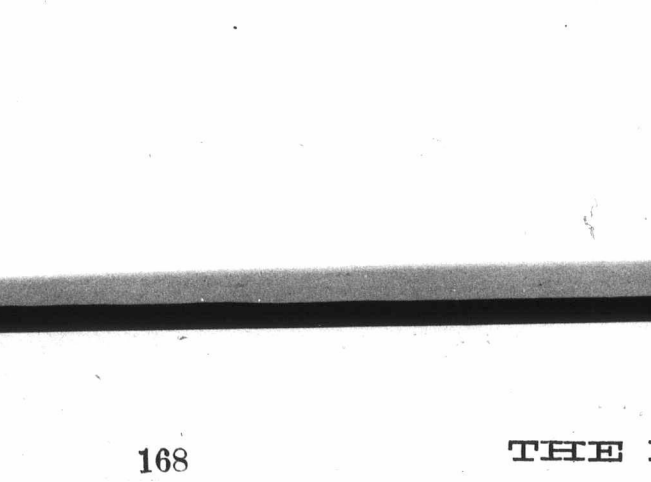


Figure 1.

till barrel is full, occasionally giving it a shaking so as to settle the fruit solid, put the fruit an inch over the edge of the barrel, set the lid on it and use the screw as illustrated in figure 2, occassionally tapping the lid or outer edge of the barrel as it may require till you press the lid to its proper place; nail on your hoop, remove your screw, mark the quality of fruit enclosed whether XX or XXX and the name of the kind. Thus by becoming familiar with packing of fruit, if the market does not suit you, and you have a knowledge of the kinds you grow. You may store away the fruit already packed ready for shipping when it becomes profitable to do so.

Plants that have been layered will require some

Figure 2.

water if the weather is unusually dry, and at present it is extremely so; water and mulch will be their only salvation, giving greater root and leaf growth.

Ornamental climbers — We presume every cottager and the one flower lover in the family has their usual stock of morning glories, scarlet runners and other annual climbers, but they require renewing every season, and a little variety is more pleasing. The Clematis Gravcoleus is perfectly hardy, of a very luxuriant habit with yellow flowers succeeded with silky clusters of seeds which look very pretty. The Virginia creeper, another old favorite, will grow any where and is unrivalled for covering brick walls, fences and unsightly nooks; its rich purple and crimson leaves in the fall is one of the glories of the season.

Ferns—These lovely inhabitants of the woods can easily be transplanted to grow around our doors; they will thrive in any shady corner where anything else would not grow at all. Collect some rocks, old roots, make a compost of leaf mould and loam, stick in the rocks and roots with a careless regularite, allowing for the effect when the foliage of the ferns is at its height. The present month or the next will do, but secure them ere the foliage is gone so as to have a good contrast of foliage and variety. Nothing will furnish so much pleasure as a nice collection of ferns, their leaves working nicely into bouquets, or dried serve for ornaments for winter decoration.

Planting—As the season arrives it is well to remark that the relative advantages of fall and spring planting are about evenly balanced. Failures follow all seasons. How to plant is of far more importance than when to plant, and the selection of stock to plant, of more importance than the time it is done. To those who have ordered trees for planting this fall or who intend ordering try and plant them as early as possible; from the 15th October till 10th of November will be found to be a safe time.

Dutch Bulbs, such as Tulips, Hyacinths, &c., should be planted during this month, selecting a favorable location neither to dry or wet. Dig in some well rotted cow dung and sand, set the bulbs about 4 inches underneath the soil, cover over with a mulching to prevent upheaval by frost, removing early in spring. Your labors will be rewarded by a showy bed of flowers to your satisfaction and the envy of your neighbors.

Every farmer and gardener should keep a diary of their operations on their place, taking notes of the time of seeding and planting, treatment and cultivation and other items of interest. It will be found useful in the season's round as a book of reference regarding their failures and success.

Canadian Cattle for English Markets.

The export of Canadian beeves to England, instead of falling away as was feared by some, is steadily increasing. For the prosperity of our farmers and the improvement of agriculture such measures were a matter of necessity. Fattening large herds of good stock implies good farming, but if our sales be confined to Canadian or Ameri e can markets the price they bring is so low that th The results of shipments now being made will encourage many capitalists to engage in the trade. One day we find a report of a shipment of 100 head of cattle, weighing on an average 1,300 lbs. each, bred and fed in Ontario, and designed for the Liverpool market; to be followed with 100 head shipped per steamer Waldensian; and shortly after a shipment of 200 head. The shippers consider it an established fact that the trade of Canada with the United States is now at an end, but that a trade with the Mother Country will confarmer is discouraged from stock-feeding. Prime beef has been sold off the Government Farm at Guelph at 4½ cents per pound—one-third the price now paid in the country markets of Ireland. With a demand from England, prices here must improve. tinue for generations. They say: It is an imperative duty that the improvement of our stock farms should go on rapidly, so that we may successfully compete with our neighbors, and have the weights necessary to fulfil the wants of the English markets. If this is not done we shall be overrun with an inferior grade, for which it will be impossible to find a market.

The Liverpool *Daily Post* of Aug. 2nd says:—The cattle trade with Canada is now considered established. Mr. Franklin and other importers left Liverpool highly satisfied, and will return with large shipments. The steamer Lake Megantic, from Quebec, is expected immediately at Liver pool with ninety-nine head on board. The steamer Thames is expected to arrive in London on Saturday, with another large batch, all consigned to a Liverpool dealer. One of the Allan Company's steamer is also expected at appear in Glasgow in a few days with cattle on board. Engagements have been made with the Allan and Beaver lines to convey cattle to England until the close of navigation.

With such tidings reaching us regularly, we have every ground to anticipate greater prosperity in agriculture. This season furnishes additional proofs of the precariousness of farming, as a mere growing of grain, being renumerative in Canada for a succession of years; and the market of the states we may look upon as closed against our products by a prohibitory traffic. But the market of England is open to us, and the success attending the shipping of our fat cattle solves the twofold problem, where the Mother Country can obtain a supply of meat and where the Dominion can dispose of her well fed beaves.

Chemistry of the Fattening Process.

In an article on this subject, in the *Journal of Chemistry*, the writer arrives at the conclusion that the cost to a farmer of fattening an ox is much greater at the close of the process than at the commencement, and adds that if a farmer consults his money interests he will not carry the increase in fat beyond a certain point, provided he can turn his partially fatted animals to fair advantage. It is true that the pounds of flesh added to the animal in finishing the fattening process, are gained at a greater outlay for food than the same weight added to the carcass at an earlier period of its fattening; nevertheless, this increased expenditure pays the greatest profit by the increased price per pound that the better fatted beef brings. It is the few additional pounds weight that the feeder looks to to pay for the increased outlay; it is the number of shillings per hundred weight that are obtained —not merely for the few pounds—but for the whole carcass. The following is the article referred to:

A lean cow or ox is in a very different condition, chemically considered, from fat animals of the same kind. In the first place, the poor animal consists of about two-thirds water, the fat one of only half, that is, in total weight. A fat animal is in a dry condition; a poor animal is like some of our bog meadows, very wet. When the fattening process begins water commences to disappear, and fat or suet takes its place; and the increase in bulk during the process is largely of adipose matter. It is a curious circumstance that during fattening the proteids, or nitrogenous compounds, increase only about seven per cent., and the bone material or inorganic substance only one and a half per cent.

The cost to a farmer of fattening an ox is much greater at the close of the process than at the commencement, that is, increase in bulk or dry weight at that period is much more costly. If it costs three cents a pound for bulk for the first month after a poor animal is put in the fattening stall, it will cost five cents the last month. If, then, a farmer consult his money interests, he will not carry the increase in fat beyond a certain point, provided he can turn his partially fatted animals to fair advantage. Farmers have perhaps learned this fact from experience and observation, and hence comparatively lean beef abounds in our markets. Whilst this is of advantage to the farmer, it is very disadvantageous to consumers of the beef, for the flesh of a fat animal in every case is much richer in fixed, nourishing material than that of the lean, and it is never good economy to

purchase lean beef. It is better to purchase th poorest parts of a fat animal than the best of a lean one. The best piece of a fat ox (the loin) contains from twenty-one to twenty-eight per cent. more fixed material than the corresponding point in a lean one, and curiously enough, the worst piece in the lean animal (the neck) is the richest in nourishing material. The flesh of the neck improves very little in fattening, hence, economy considered, it is the best portion to purchase, as its value is in a measure a fixed one.

Gang Ploughs.

We know of no agricultural implement for which there is such a great demand at the present time. Every farmer we have seen that has once tried them would not be without one for many times its cost. They are fast supplanting the cultivator. Stuble land and fallows are quite as well worked by it as by the common plough, and at only half the expense. The agent of Mr. Levi Cossitt, of Guelph, the manufacturer of the Richardson Gang Plough called at our office on Friday when he showed us a large handful of orders and application. A great many had tried the plough and were satisfied. Many orders were from farmers that had seen them work. Some letters contained orders for two and three, some were ordered by the dozen. Mr. Cossitt's plough has already attained a great name in the Dominion, and must spread it usefulness to all localities, as he offers to send them to any good farmer on trial. If they are not entirely satisfied with them they may return them. His Gang plough may be seen at the Centennial and at any of our leading agricultural exhibitions.

The plough took the 1st prize at the Provincial ploughing match last fall in Wellington. Over two thousand of them have been sold since it was first patented—only eighteen months ago.

From 1st January to 1st July, 1876, 163 ships of 109,870 tons have cleared from the port of St. John for Great Britain, carrying ninety million feet of deals, besides large quantities of other wood goods. Last year the number of ships was 97 with a measurement of 60,967 tons, and carrying 49,000,000 feet of deals. The shipments for June were by 59 vessels carrying 33,742,144 feet. The increase is about 80 per cent. in favor of this year.

Miscellaneous.

Farmer's Clubs—Farmers of New Brunswick in Council.

The readers of the FARMER'S ADVOCATE need not be reminded how persistently we urged farmers before the institution of the Order of Patrons of Husbandry to unite in a farmers' club, and hold meetings for the discussion of subjects of interest to them in their profession. Under whatever name or organization they may meet, whether Granges, Leagues, or Clubs, such meetings must be highly beneficial. The following items of interest, selected from the report in the *Colonial Farmer* of a meeting of the King's County Leagues, are worthy of our consideration:—

James G. Farroweather—Sometimes he was asked, What means this League? to which he replied, simply a farmer's organization for the discussion of the many questions affecting our social economy—by no means political or necessarily so. A society wherein we seek to elevate our condition, break down prejudices, express our opinions, and meet for friendly discussion.

R. McCully thought one way to improve our condition would be to use more manure. When his father first moved to Sussex, and farmed on the gravelly intervales of his neighborhood he could raise a crop of potatoes and three crops of wheat without any manure, but this was not improving his cultivation, for it ran the farm out. He found marsh mud mixed with manure would produce as good potatoes as barn manure. He once built a small lime kiln, mixed the lime with mud, and found it as good as the compost of mud and manure. Many years ago he had been told it would pay to keep cattle off the meadows. He had adopted the plan and found the meadows improve.

I. B. S. Raymond said he wanted good implements and plenty of them on the farm, and all the labor-saving appliances that could be used in the house. This would improve our condition, and by producing more he could buy more if needed, and save more. But he wanted to see our implements made at home. He believed in encouraging home manufactures, and creating more markets. Facilities for selling were always followed by a demand for production. It was a wonderful stimulant to industry. We should raise more or till less land. By tilling less and better we could have more money and pay higher wages. By stabling our cattle more we would make more manure.

Robert McLeod, M.P.P., said if the implements we have now are not as good as we desire, let companies be formed to give employment. He thought the manure of three cows thrown out of doors no better than that of one sheltered from the weather; one load of mud mixed with manure equal to two loads of barn yard manure. Top-dressing meadow land is very good, but if hide-bound, wants to be harrowed or ploughed. Good implements were no doubt needed, but he was happy to know there were more made at home than formerly. He thought drainage would be very beneficial, and the manufacture of tiles should be encouraged.

Mr. Samuel Frost, of Norton, thought we should impress on our Legislators the necessity of encouraging manufactures, and thus keep the money in the Province.

Mr. Hoyt Foster, of Kingston, said drainage was a great benefit. By lengthening the season it would enable us to produce more. He yarded his cattle nights through the summer, and by hauling earth and sods into his yard was able to make a large quantity of manure, nearly as much as in winter. A neighbor of his, by feeding one cow on shorts and roots had made $100 dollars worth of butter in two months, and fed a calf besides. He thought it was better to feed his cows in the stable than to turn them on to the meadows.

W. B. Scovil, Esq., of Springfield, was happy to see so many farmers present. His greatest difficulty was that he had to work too hard; but on the manure question he felt he was pretty sound. He kept his in a cellar, and applied it in the fall, and ploughed it in. His horse manure he prevented from fire-fanging by keeping calves on it. His father had used a good deal of lime, and on the fields so limed he found the crops were even better than on other fields. John McLauchlin had applied lime at the rate of 15 to 20 hogsheads per acre, and the grass on a 26 acre field was a magnificent crop. On six acres of it that in addition to the lime had received 10 loads of manure, he had raised 316 bushels of oats. The farm is a heavy and wet soil, and poor at that. Drainage and the use of lime have made a great change. Mr. McLauchlin said he would have been starved out had it not been for lime. Mr. L. considered that the use of lime would enable us to grow wheat again.

J. D. M. Keator was disposed to accept the principle as correct, but considered that in the application of an artificial fertilizer, such as lime, experience was the surest guide. He thought the use of fresh slacked lime freed the organic products in the soil too profusely, and thus exhausted them. We hear of lime being used on heavy clay soils and improving the yield. We also hear of its advantages when applied to light sandy soils, so that we have to experiment for ourselves. Professor Johnston considered one application of lime in ten years often enough. If more manure will give the farmer more producing power, so will the use of good implements and judiciously arranged buildings. We must discriminate as to the application of the means at our disposal. A cheap tool to work with or inferior animal to use is not the cheapest in the long run.

Mr. Frost thought the application of lime too stimulating, and some parties who had used it had exhausted their farms.

Mr. John M. Kinnear, Sussex, considered that lime in developing unknown qualities in the soil, increased temporarily its powers of production, and then fell back to a condition worse than before.

Mr. A. B. Hayes did not believe in growing too many potatoes and oats, but thought the hay crop and stock raising to be the first consideration.

Hiram White used lime on his farm, and had tried it on all descriptions of soils. One fall he ridged a piece of swampy clayey ground and applied lime on it, seeded it down with buckwheat, and produced heavy crops of grass for a number of years. Tried it again on clay land with the best of results, and again on gravelly soil. Its effects were observed for two years and then disappeared.

Samuel B. Belding said twenty years ago he had experimented on a lot of ten acres of land, using lime and muck with the best results. He had top-dressed grass with gypsum, lime, ashes, refuse from his tannery, and had never failed of a good crop of hay.

Mr. Greenlade had used lime on potato land with good success, also on meadow land. It caused the timothy to grow luxuriantly.

An Outside Opinion.

In commenting upon the recent meeting of the National Board of Trade, at New York, the *Scottish American*, of that city, gives the following paragraph:

Even the proposal to consider the reciprocal trade relations of Canada and the United States evoked a very small measure of enthusiasm, and produced what must prove a very abortive resolution. It is no use denying the fact that commercial reciprocity between the two countries would be an advantage. Since the abrogation of the old treaty the trade of the United States has suffered in greater proportion than that of Canada. The Dominion can afford to do without reciprocity for a longer period than the Union. During the past ten years there has been a steady increase in both the import and export trade of Canada, and at the present time it can show more elasticity and vigor in its finances and commerce than the United States. It is becoming, therefore, a matter of comparative indifference to Canadian statesmen and merchants whether or not a reciprocity treaty be renewed. Yet even in Canada there is a disposition to consider the question dispassionately; and had a conference been held between a committee of the Board and the Canadian delegates who were present it is not unlikely that some advance would have been made in the removal of difficulties, and in preparation for future amicable arrangements. The gentlemen who represented Canada had the confidence of their constituents, and were in every way competent to discuss the question in both its commercial relations and political bearings. The opportunity, however, was lost.

The Evil of Late Hours.

The rising sun draws forth qualities from earth and vegetation most conductive to the moral and physical health of the waking man; the invisable air is laden with properties which stimulate, his powers and refine his faculties. This. then must be the proper time for quitting the bed-chamber into which the breath has been exhaled for many hours and the pores have been emitting their secretions the conjoined effect being such as to render the air mephitte and unfit for inhalation into the lungs. Miss the morning air, and you daily miss the most valuable draught of medicine that can be prescribed. The most subtle logician cannot gainsay this fact; but even were it not syllogistically demonstrable, the instincts of the animal and vegetable world would bear testimony to it in the example they set to man. No man should sleep less than six hours out of four-and-twenty—none if in the enjoyment of heaith more than eight.—*The Science of Life.*

To Beat the Curculio.

Now, friends, go to work and raise plums, apricots and fruits of that kind.

It is reported by the Iowa Horticultural Society that burning coal tar under the trees, when in fruit, is a sure preventive of the ravages of the curculio.

Take a long-handled vessel like a frying pan, put in the tar, set it afire, carry it around the trees, letting the smoke go freely among the branches and fruit. Coal tar makes a thick, heavy smoke, which rests on the fruit and leaves, and is proof against attacks of enemies. Mr. Kauffman and others have tried and proved it. Do it often, as rain washes it off.

Stock and Dairy.

Disguising Cattle for Exhibition and Sale.

Some years ago, at a fair in Scotland, a bull on exhibition was discovered to have a false pair of horns, so neatly fitted on that the fraud could only be detected by the closest inspection; and his crops, which were low and defective, had, through incisions made in the skin, been blown up to the most ample fullness and perfection. The fraud was exposed, and the owner disqualified from exhibiting in future. This was an extreme case, aggravated by the cruelty of the means used to deceive the judges. But it must be confessed that practices are tolerated at public sales and cattle shows which, excepting the cruelty of the method, are no less objectionable in being designed to deceive, than the case here mentioned.

Granting that over feeding and forcing to an unnatural and unhealthy state of obesity is not to be regarded as fraudulent, because the condition can be seen, and that all the labor bestowed in washing and brushing is only to remove the dirt, what shall we say of the practice of coloring the horns, of oiling the hair, and of that most foolish of all the "tricks of the trade," shaving the tails and cutting out the curly locks in the faces of the bulls? How this latter practice originated is a mystery to us; certainly not with any man that was a judge of cattle. We cannot have too much hair on a Shorthorn, and especially about the head of a bull, and the more curly and shaggy it is, the better.

As to oiling the hair, we confess that the first lot of cattle we ever saw in a sale ring that had been nicely gone over with this process, deceived us; we thought the quality was wonderful, the hair appeared so fine and silky, and the hide so soft!

There is no denying the fact that all these artificial means to improve the appearance of stock on sale or exhibition, are designed to deceive, and are, therefore, objectionable and fraudulent, and ought to be discontinued and eradicated; and we sincerely hope that all respectable breeders of Shorthorns will set their faces against them.—*National Live Stock Journal.*

Butter in France.

If our dairymen need a spur, an eye-opener, a lesson which speaks volumes in three words, here is one at the head of this article. Butter is actually brought from France, and sold by the New York dealers. And this is thus because there is an actually scarcity in the market of good butter put up in an attractive shape for small consumers. When we know that one dairyman gets $1.15 a pound for his products, another $1, and another 75 cents, the year round, at his dairy door, it is easily seen that it will pay to bring butter across the ocean from France, if it is only good and shapely enough to suit the fastidious purchasers who will have something nice, whatever it may cost. All this butter is made from choice cows, choicely fed on clean sweet food; the milking is done in the cleanest manner. The milk is handled as carefully as though it were nectar, the cream is churned with clock and thermometer, the butter is worked with skill, and is made up in shapely cakes, which do not require to be cut when brought to the table. Compare then, this cake—hard, golden yellow, sweet, fragrant and tempting to all the senses—with an unsightly chunk, which is cut out of a greasy keg, and smells of old and rancidity, and is made from ill-kept cream from cows filthily lodged and carelessly milked, and is churned anyhow, and the difference is amply accounted for.—*N. Y. Tribune.*

Dogs as Sheep Protectors.

I used to breed cattle, but having a natural fondness for sheep, and an opportunity to purchase a couple of Scotch colley shepherd dogs removing my fear on the score of destruction by mongrel curs, which deters so many from keeping sheep, I concluded to try the experiment which has resulted so satisfactorily.

In my stock of 100 ewes I have half a dozen bells, and in case of danger the sheep all run to he dogs for protection. This familiarity between the dogs and sheep, with the watchful care exercised, is one of the prettiest sights in the world. These faithful guardians of the flock are ever on the alert day and night. The rapid tinkling of the bells at once arouses the dogs; and about three weeks ago, in the middle of the night, I heard an unusual disturbance among the sheep, but was so confident that the dogs would be equal to the emergency, that I did not come down stairs. In the morning I had the satisfaction of seeing one of the worthless curs which go prowling about at night, lying stone dead along the fence, with marks on him of a desperate fight. I should say, however, that I made one cross by putting my shepherd dog to a Newfoundland slut, and kept the choicest of the litter. He has proved a fine, large dog, about twice the weight of either of the shepherds, and though never interfering in what he seems to consider their special duty, is always on hand ready for service.

It is curious to observe how, when strange dogs cross the place, the two shepherd dogs will take a survey, and if they see much business (they are themselves great fighters), by a kind of silent understanding and arrangement, the three dogs go together; and although we in this country are overrun with all kinds of dogs, there seems to be a general fear of my three dogs, and we are seldom disturbed. I recommend the purchase of one or two good shepherd dogs as the first step towards keeping sheep.

Devon Cattle for Butter and Beef.

The question—What would be the value of Devon cattle for a butter dairy, combined with beef raising, in northern sections of the country? is answered by the *Prairie Farmer* as follows:—

Devons are medium milkers, generally, as far as quantity is concerned, but there are instances where individual cows are great milkers. So far as quality is concerned, they rank high for butter making. But our correspondent will bear in mind that beef and butter from one class of animals are not often met with; that is to say, in securing beef points in cattle the milk and butter points in cattle, the milk and butter points are sacrificed, and, *per contra*, when milk and butter is the prime object, beef qualities do not thrive. When bred solely for dairy purposes—selecting animals of superior milking qualities, for that object, this breed has been found highly valuable. The Devons are well fitted for the dairy on account of docility and easy keeping, and other characteristics. It is claimed for them, too, that when the flow of milk ceases, and it is desired to fit a cow for the shambles, the Devons take on flesh very readily under generous feed. It must be rememberd, however, that the improvement of any breed for beef is done at a sacrifice of dairy characteristics in the animal, whatever the breed. If a choice of a single breed for general utility was to be made, we do not know that you could do better than to choose Devons.

Hereford Cattle.

The best Herefordshire cattle display all those points which are considered as marks of true beauty in the finest specimens of British cattle; such as a light fore-end, broad and deep bosom, straight back, and a round barrel, produced by a broad projecting rib—the loins broad, the hip-bones spreading wide and standing high and level with the top of the back. and pushing forward to the first rib—long and flat quarters, &c.; and considering the size and weight of these animals, they are remarkably small in the bone, but the feet are more spread than those of lighter cattle. The oxen are in great repute for purposes of husbandry, the plowing in the county of Hereford being almost wholly done by them.

The color of this breed is red or brown, with a white and mottled face; some having circles of flesh-color or yellow round the eyes, and a white circle round the ears at the insertion; a streak of white along the top of the neck to the shoulder; the under part of the throat white, and so continued along the belly to the setting-on of the tail, which should rather project. The legs are also often white, or equal parts white and brown, or red spotted, according to the color of the animal; mostly having a white tassel at the end of the tail.

The bulls, like those of Devonshire, are apt to be high and thick upon the neck, which cannot be considered a blemish, it being peculiar to the bull only, and is undoubtedly the effect of health and high blood.

As breeding is the first object with the Herefordshire farmer, the dairy, of course, is not much considered, and the quantity of milk that an individual cow may give is not ofter ascertained. The calves are kept with the cows; and the farmer only attends to the dairy as a conveience for his own family; but it is said the average of a good dairy (of which there are a few) is about 3 cwt. of cheese in a year from one cow, or 2 lbs. of butter by the day through the summer—the calves are of a thrifty nature, the veal of a fine grain, and weighs from 24 to 40 lbs. per quarter, at six or nine weeks old. The cows when fatted weigh from 9 to 12 score the quarter, sometimes from 15 to 16. Oxen from 14 to 18 or 20 score the quarter. They have thin hides, and the weight is proportioned to the size of the animal. There is a smaller breed of cattle in Herefordshire, which seems to be crossed with some of the coarser Welsh breeds, that have a much harder and heavier hide than the larger sort, which shows their excellence in nothing so much as in having a fine soft skin and small bone. Seven or eight years back a good cow and calf was worth from 12 to 15 guineas, which at present would fetch from 18 to 25. A pair of steers, or young oxen for work, then worth £28 now fetch £38, and such oxen from the yoke that were worth £18 each, will now produce from £20 to £30, or more.

What Is Pure Blood?

The following remarks were made by President Welch, ef the Iowa Agricultural College, at the recent Short-Horn Breeders' Convention:

While coming here to-day I was thinking of the important subject, how long shall a thoroughbred animal be bred by crossing with a scrub before becoming pure blood? The English rule is, to cross four times with the female, and five times with the male. We take a half-blood and cross with a a pure-blood, and we have a quarter-blood, and at the fifth cross we have an animal that has thirty-one parts pure blood to one part scrub—that is, if we compute the crosses arithmetically—but when we take into consideration the fact that the pure blooded animal is prepotent over the scrub, then the animal has but a minute portion of scrub blood. When a pure blooded Short-Horn bull is crossed with a scrub cow the result cannot be computed arithmetically, for the prepotence of the thoroughbred animal over the scrub, controls to a greater or less degree the value of the progeny. The future beef and mutton of this country depend on the value of crossing. I crossed a common cow, a poor milker, with an Ayrshire bull, and the result was an Ayrshire calf resembling his male parent, and with not one perceptable point in favor of its mother; thus the scrub was almost entirely lost. It is impossible to say that a certain number of crosses will produce arithmetical results. The Short-Horn bull is the most prepotent animal on earth, not only particularly but generally; and for example we will take the Seventeens: Suppose there have been nineteen crosses since the importation of 1817, at the present time there would be one two-thousand part of scrub blood in a straight Seventeen; that is, if it was computed arithmetically, but when you take into consideration the prepotence of the pure blood over the scrub you would have an animal as near perfection as it is possible to get. What are the excellences of the Short-Horn but his merit and power to transmit that excellence and merit to his progeny? I recognize, also, the value of strains of families. The value of a strain is that that particular family produces the best Short-Horns. We often find that, by reversion, a very homely or inferior bull, if he be of a good family, will breed back to some of his ancestors and produce them. The principle that like begets like seems to be the true doctrine.

Special Feeding for Butter.

I am in favor of high feeding for butter-making, but the only way in which high feeding increases the quantity of butter is by increasing the quantity of milk. I have read Mr. Stewart's article carefully, and do not find any decided opposition to this view. He advocates special feeding for special purposes; for example, the feeding of roots, cooking of food, feeding liberally with grain, etc., to make the winter's food equal to grass, the "proper and normal food of the cow," during the summer. All of these practices are calculated to increase the quantity of milk, and of course, the quantity of butter. But when he comes to consider the question, "Does quality of food effect the quality of milk?" he answered affirmatively, "with a qualification." "He had taken a cow which gave milk requiring 28 pounds to make a pound of butter, and in two years, by special feeding, he had been able to get a pound of butter

from twenty-three pounds of her milk. It is a slow process, and the results are limited."

That we can improve the quality of milk by breeding a race of cattle I freely admit, but that we can enrich the quality of milk in the individual I very much doubt. If a certain system of feeding increases the percentage of cheese, we can change the natural characteristics of our cattle at will,—it being only a question of time. One cow has a natural tendency to turn the food she consumes into milk, another on the same diet gives little milk, but lays on flesh and fat. Can we change this tendency in the individual? Can man control the physological actions of the various organs of the cow's body, causing them to prepare a milk richer or poorer in certain ingredients at pleasure? To my mind we could change the quality of the bone, flesh, or fat formed just as soon. But if it be true that cows' milk can be made richer in butter by special feeding, what are the means of securing it?—*Cor. Pract. Farmer.*

Diseases of Animals.

At the annual meeting of the Devon Chamber of Agriculture, Dr. Blyth, the county analyst, read a paper on foot-and-mouth diseases. He said that study showed the great predominance among animals of parasitic diseases—life feeding upon life. Whilst in human disease this class was subordinate; in animal plagues the parasitic class held the first place. Sheep died from flukes, horses from worms floating in the blood itself, fowls were suffocated by living red threads in the windpipe, and the strongest and most robust animals were constantly falling a prey to despicable creatures immeasurably below them in the scale of creation, but which were enabled in some mysterious way to prey on the very centers of life. The predominance of parasitic diseases was due almost to the common neglect to provide a fairly pure supply of water. He did not mean an absolute chemical purity, but water free from weeds and mud, and protected from the pollution of the cattle themselves. Many people seemed to imagine that any filthy shallow pool was quite good enough for cattle, and would use as an argument the fact that horses frequently turned from a clear running stream and drank out of a turbid pond. The explanation of this was mainly the temperature of the two, horses preferring water of a moderate temperature, however polluted, to water that was extremely cold. Liver-rot in sheep was a parasitic disease, and its origin was the opalina, a little animal which could only live in impure water, but when drank up by sheep it by a series of marvellous transformations, developed into the fluke, which infected the liver of the sheep and caused death. Another thing due to cattle drinking impure water was the existence of little cysts, the existence of which necessitated in India in 1868 and 1869 the destruction of 17,500 pounds of ration beef, for these cysts if swallowed by man, developed into tapeworms. The almost unchecked disastrous diseases which swept the face of the country from time to time showed the utter neglect of veterinary hygiene. Let them look, too, at the dark, humid, unventilated stables attached to nine-tenths of the inns in Devonshire. Then again look at the farms. There were two methods of farming—in one the farmyard was neat and clean, and there was found nothing in any way offensive or repulsive, whilst in another kind of farm might be found an immense cess-pit in which pigs and cattle, ducks and dogs wallowed, a pit into which every drain emptied, and which, in short, was full of filth unmentionable. One or the other of these systems must be wrong—which? It would hardly be suggested that this was a good condition of things for the health of man, and there was abundance of fact to show that conditions which operated unfavorably on men had a similar operation on animals, and that judicious sanitary improvements which prolonged the life of the former also prolonged the life of the latter. The same effect that was seen in the eyelids of children kept in a crowded and unventilated school room was developed in the eyelids of pigs kept in close filthy styes; and when they come to kill the animrl they found, as the effect of such keeping, that the flesh of the was more watery, it was flabby, and less nutritious than that of pigs kept under healthier conditions. Mice were infected in a more intense manner by skin disease caused by fungus; this was caught by the cat feeding on its prey, and from the cat was propagated to children, becoming in them that loathsome disease—the honeycomb ringworm. To complete the outline of the bearings which veterinary sanitation had upon the human race, it only remained for him to allude to the well-known serious influence which diseased meat had upon the health of men—tapeworm from eating meat affected with cysts, and trichinosis from eating that affected with trichina, a little worm which multiplied in the muscles of the human body, and not unfrequently caused death.

Shorthorns not Suited for all Places.

Dr. E. D. Moss, of St, Louis, an ex-editor of acknowledged ability, thus expresses his opinion on the shorthorn mania in Colman's *Rural World*:—

While the shorthorn fancy has put money into the pockets of wealthy breeders, its effects have been disastrous or unsatisfactory in too many instances. Farmers like to be in the fashion; they are naturally ambitious to improve their cattle by means of the magnificent shorthorns so much admired by every one; they take in the fashionable idea that they must have big cattle. If they inquire, "What improved breed of cattle shall I get?" the chances are that they will be told, "Get the shorthorns by all means; there is nothing like them." In some cases the advice is good; in more it is bad. If the object is to raise cattle for any other purpose than beef, the shorthorn is not the best. If the farmer is not willing or prepared to give them the high feeding and careful attention to which they have been accustomed, they will dwindle, and he would do better to take cattle better fitted for shifting for themselves. If he live in a hilly or mountainous region, he will have indifferent or bad success with shorthorns in nine cases out of ten. Elm, sycamore, cottonwood and black walnut trees grow to magnificent proportions on rich bottom lands—their natural home; they are not natural to lean, hungry soils, and cannot be made to attain the same perfection in them. It is so with the shorthorns; to undertake to breed and rear these mammoth-framed cattle on poor soils and steep hillsides, is to attempt what is contrary to nature and the fitness of things, and making an exaction which nature will not endure. Yet it is done yearly, and will probably continue to be done until bitter experience teaches them better.

What to do with Sheep.

There is some anxiety among sheep breeders to know what course to take with their sheep. What shall we do with them? ask they. Our answer is, take a conservative, steady course, pursue it steadily, do not be carried away with the cry of cheap wool, but aim to keep a flock of sheep on your farm. There are many considerations in favor of keeping a few sheep on every farm. They are good fertilizers, they afford some variety to farm life, they are a food-producing animal; their wool always sells for cash at some price, and they are easily handled and their product cheaply marketed. It is in June that about $2,000,000 will be paid to farmers of this State for their wool. This is just the season they want money to commence their harvesting. At this season they are busy; they have a few days to market their wool and get a little money, and this gives them capital for the summer's campaign. No crop can fill or take the place of the wool crop. We understand that there will be a disposition to sacrifice sheep on account of the low price of wool. We recollect the scare of 1869, and we also recollect that those who held on to wool production made the money, and we apprehend this will again be the case.

We do most earnestly recommend that wool-growers cull their flocks and turn off all inferior, non-productive sheep, but let no one imagine that the bottom is about to fall out of the business. There are altogether too many shearing two and one-half to three pounds of wool. No sheep should be retained that sheers less than four pounds of wool; turn off all this low kind of trash, and the best time to test their value is at the time of shearing. Then mark every sheep for the shambles that does not come up to the standard. It is time the wool-growers of Michigan got entirely through with the use of scrub rams and scrub ewes. It is time that all half-breed bucks were sent to the shambles, and there should be a loud call for the best thoroughbred rams. There should be an advance along the centre line of sheep-breeding. We wish our voice could reach every flock-master in the State with such potency as would compel, this season, the slaughter of every scrub ram in the borders of the State. The best flocks are the ones that are going to pay. It is with sheep as it is with swine or with cattle—there must be selections, flocks must be culled—some pains must be taken with breeding stock. All we can say is, let the man who has a good flock of sheep keep making it better. Resolve to add one pound of wool toeach fleece.—*Michigan Farmer.*

Lung Power in Horses.

How shall a colt be treated in order to develop in him the highest degree of speed? We will take an animal at two years of age, let us say, and inquire into the best method of cultivating the faculty and power of rapid motion.

The first thing to attend to, be it observed by all, is the lungs. Lung power is the best kind of power a horse can possibly have, because it alone can make other kinds of power of avail; muscular power is very desirable, but muscles can never bring a horse to the wire in time, unless his lungs are good. Nervous force is excellent; but no amount of vital energy will hold a horse up through the wear and tear of a four-mile race. A perfect bone structure is admirable; but what are bones, if the breathing apparatus is inadequate? The first point, therefore, that a breeder or owner of a lively colt should consider, is this matter of lung development. The great question with him should be, "how can I expand and enlarge his lungs?"

To begin with, then, let it be remarked that colts need a great deal of exercise. By nature they were made for rapid movement. Like young birds, they develop in motion. The number of miles a colt of high breeding, and in good condition, will go when at pasture, each day, is something surprising.

Now, no sensible man will turn a colt of fine promise loose in the pasture after the second year; and we do not after the first. A good colt is too valuable to risk in that foolish manner, especially if he be a horse colt. He should be kept in a large, roomy stall, where he can be attended to and trained day by day. But do not forget his need of daily exercise. Do not think that a box-stall will suffice. You might as well teach an eaglet to fly in a large cage as to give the needed discipline to a colt's legs, heart and lungs, in a box-stall. Many most promising youngsters are fatally checked in the development of their powers, by lack of needed exercise in their second and third years. We hold that a colt needs a great deal of exercise; not to the halter, which is good for nothing but to sweat out a lazy groom; but sharp, quick exercise, in the taking of which every muscle is brought into play, every joint tested, and every vein, however small, swelled taut with rapid blood, as is the case when allowed the liberty of hill and plain, and to follow the promptings of nature.—*Rural World.*

How to Tell a Horse's Age.

A well-known journal tells how to know the age of a horse, as follows:—The colt is born with twelve grinders; when the four front teeth have made their appearance, the colt is twelve days old, and when the next four come forth, it is four weeks old. When the corner teeth appear, the colt is eight months old; wnen the latter have attained to the height of the front teeth it is one year old. The two-year old colt has the kernel (the substance in the middle of the tooth's crown) ground out in all the front teeth. In the third year the middle front teeth are being shifted, and when three years old these are substituted by the horse teeth. The next four teeth are shifted in the fourth year, and the corner teeth in the fifth. At six years the kernel is worn out of the lower middle front teeth, and the bridle teeth have now attained their full growth. At seven years a hook has been formed in the corner teeth of the upper jaw, the kernel of the next teeth at the middle is worn out, and the bridle teeth begin to wear off. At eight years the kernel is worn out of the lower front teeth, and begins to decrease in the middle upper front. In the ninth year the kernel has wholly disappeared from the upper middle front teeth; the hook on the corner has increased in size, and the bridle teeth lose their points. In the tenth year the kernel is worn out of the teeth next to the middle front of the upper jaw, and in the eleventh year the kernel has entirely vanished from the corner teeth of the same jaw. At twelve years old the crown of all the front teeth in the lower jaw has become triangular, and the bridle teeth are much worn down. As the horse ad-

vances in age the gums shrink away from the teeth, which, consequently, receive a long narrow appearance, and their kernels have become metamorphosed into a darkish point, grey hairs increase in the forehead and over the eyes, and the chin assumes the form of an angle.

Australian Beef in English Markets.

Heretofore the surplus of fresh meats in the Australian markets has been sent to England in the shape of "canned goods." But time and experience has demonstrated that it will not pay. It costs time and money to put large quantities of fresh meat into tin cans, and when put up in this shape it meets with slow sale. Even the poorest classes dislike it, no matter how cheaply it is offered. Under these circumstances it is proposed to freeze the carcasses, and ship them in that condition to England. Australia is a long way off, and it is difficult to devise means for keeping the carcasses frozen during the entire voyage; but, at an expense of $50,000 an apparatus for the purpose has been perfected that, while it has not been subject to test off shore, will, it is believed, accomplish the task, and $125,000 have been raised for constructing one on shipboard, and making a trial hipment of 500 tons of frozen meat from Sydney to London. We have no doubt the thing can be done, but whether it will pay or not is another question. The carcass can be preserved fresh and sweet for months while frozen, but when the frost is drawn out of it, on exposure in the markets, it would not be surprising if it should fail in quality too rapidly for the butchers to handle it. We believe the fresh meat sent out from New York in refrigerator compartments reaches the English markets without being frozen, and we suspect that when it comes to the importation of dead meat, England will be compelled to look to America instead of Australia for her supplies.

Discovery of Salt in Keppel.

A few days ago, while Mr. Franklin Pearce was boring for water on his farm, lot 18, 23rd concession of Keppel, at a depth of fifty feet he struck a vein of salt water, which immediately spouted up to within a few feet of the surface. No proper test of the strength of the brine has yet been made, but Mr. Pearce boiled down a couple of teacupfuls of a substance resembling salt, but much stronger than any ordinary salt. The indications are that it will prove a valuable salt well. It is within two miles of the village of Oxenden, at which place indications of salt have long been noticed.

Visit to Mr. Wm. Harris' Farm, Mount Elgin, Oxford Co.

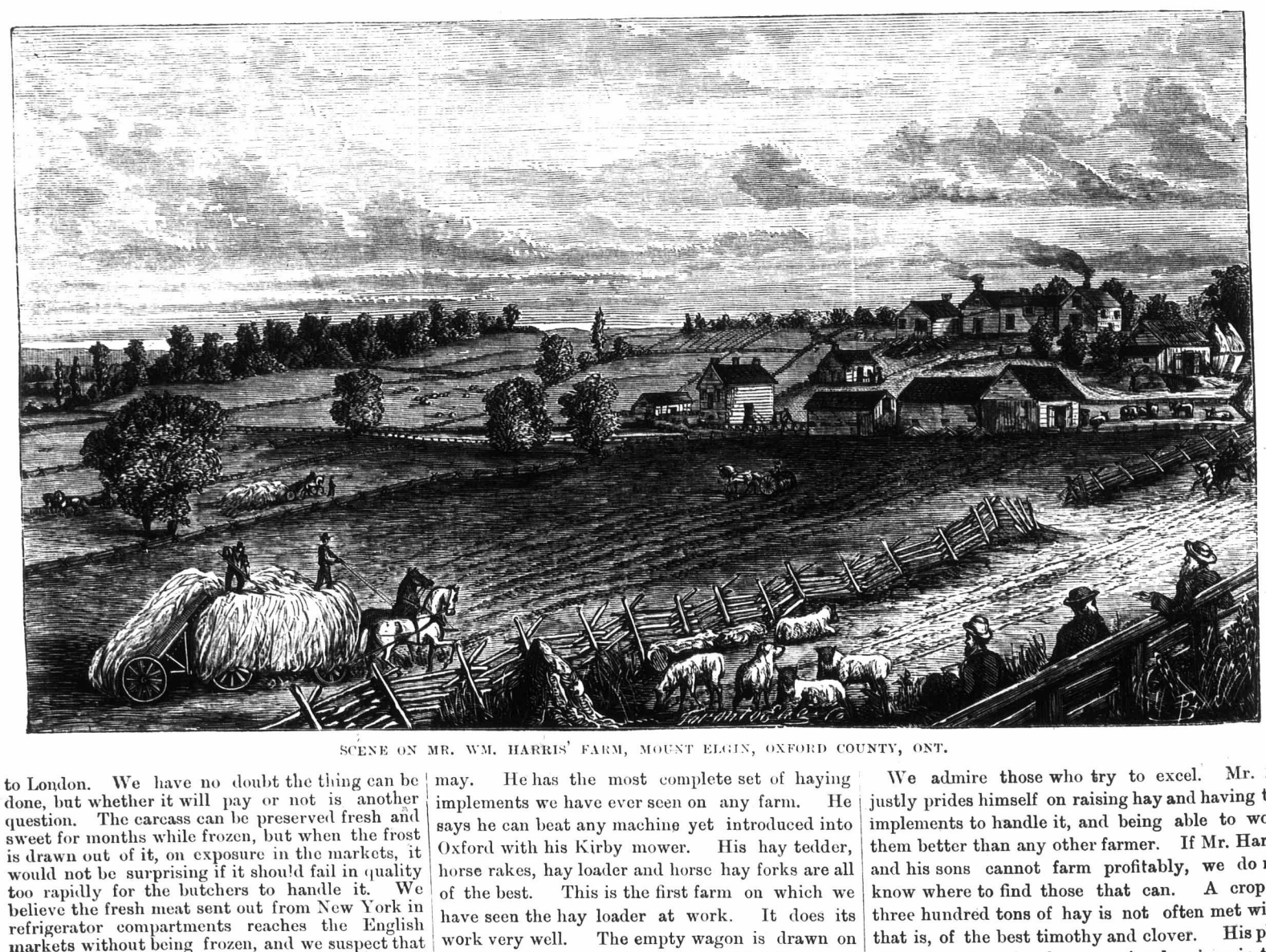
After our visit to the Centennial and New York, on our way home we went into one of our best dairy townships, namely, Dereham, in the county of Oxford. We paid a visit to Mr. W. Harris's farm, and took our artist with us. We think it proper to show some of the practical results of some of our successful farmers.

Eighteen years ago Mr. Harris had a claim on a farm of 100 acres, but through endorsing was obliged put it out of his hands; but he still continued farming and succeeded in redeeming his land. By persevering industry and good management, he now owns 500 acres. The land is of excellent quality, being of a loamy clay and having a clay subsoil. The farm appeared to us far better than any we had seen on our journey, that is, in regard to the luxuriant growth of the crops. He has 120 acres of hay, and we presume no farmer in America has a finer crop; we should judge it would yield between two and three tons per acre. Mr. Harris prides himself in his hay crop, and well he may. He has the most complete set of haying implements we have ever seen on any farm. He says he can beat any machine yet introduced into Oxford with his Kirby mower. His hay tedder, horse rakes, hay loader and horse hay forks are all of the best. This is the first farm on which we have seen the hay loader at work. It does its work very well. The empty wagon is drawn on the field, the loader is hooked on behind the wagon by means of revolving teeth and a light carrier; and the hay is put on the wagon as fast as two men can load it; the additional draft is hardly perceptible. The loader will pay for itself in one or two days where there is hay enough to use it.

Mr. Harris has 120 acres of wood, 120 of pasture, and 140 cultivated; he keeps 60 cows, and has a cheese factory, but does not take milk from other farmers. He has a tramway from the milking house to the factory, which may be seen in the illustration.

He raised 6,000 bushels of grain last year; he does not raise turnips, carrots or mangels, as he prefers grain for his stock. He has 14 acres of corn for soiling; he feeds it off, using a revolving fence, which is very convenient and cheap. He prefers this to cutting; he says cuttting and carrying soiling food and raising root crops will not pay as well as his plan.

Mr. Harris formerly resided in the States. He considers that no part of the States surpasses Canada in climate and soil for farming. His buildings have been erected as necessity and means would allow him. In the present illustration you see the buildings as they are, or nearly so, allowing the artist a little privilege in placing them in view, as there is a pond of water near the factory, and the factory is on rather lower ground than it appears to be. The land is not all fenced with board fences, yet the buildings were erected before the 25-feet posts were used. In a few years we may see this farm as much of a model farm for buildings as it now stands for successful management at the present time, and as the burnt child dreads the fire, we presume you will catch a weasel asleep when Mr. H. next endorses for any one.



SCENE ON MR. WM. HARRIS' FARM, MOUNT ELGIN, OXFORD COUNTY, ONT.

We admire those who try to excel. Mr. H. justly prides himself on raising hay and having the implements to handle it, and being able to work them better than any other farmer. If Mr. Harris and his sons cannot farm profitably, we do not know where to find those that can. A crop of three hundred tons of hay is not often met with, that is, of the best timothy and clover. His plan of seeding down has been previously given in this paper, and we have yet to hear of it if there is a better plan. Look at your back numbers and learn his plan. He attributes a great part of his success to his mode of seeding his meadows.

Wm. E. Hunt, a farmer of the township of Westminister, has been fined $10 and costs for allowing Canada thistles to grow on his farm contrary to statute. The complainant was the overseer of highways, and now Hunt has brought a charge against the overseer for neglecting his duty in not enforcing the law everywhere in this locality.

Bailing Hay.

Canada has this year the largest crop of hay we have ever raised—far more than is required for home consumption. The great question will arise with many farmers, shall we keep the hay for a year or two, or sell it to the best advantage; and what is the best way to dispose of it? The large cities will require large quantities. We presume farmers will purchase hay presses and travel through the country as they do with threshing machines, in localities where hay is made a staple article. The present illustration shows the latest and best hay press made. The presses appear to us rather high, costing as much as a threshing machine; but there is no hay press made in our Dominion that we are aware of.

The advantages claimed for the Dodge Excelsior Hay Press are that they are moveable, and not as liable to break as the old presses; that they can be worked by one man or by a gang of men, with either horse or steam power; that the dust is removed and the bales are more saleable, as they cannot put bad hay in the centre; that the bales are more easily handled, and the hay is more easily taken from the bale; that less wire is required to secure the bales.

The hay is thrown loosely on the feed table, or troughs, in front of the press, whence iron teeth carry it right into the open mouth of the machine. In its passage over the slotted troughs, the hay is completely cleaned from dust, and when it reaches the mouth of the presss it is seized by the revolving cones in the head piece and drawn in from the feed-table in two continuous streams, and built up into a bale 26 inches diameter.

It has two rates of speed, and it can be operated at will by two, four, six or eight horses, and on the fast or slow motion, as may be most desirable.

After the bale is built such length as desired, the action of the compress Screw is brought into play by simply seifting one cog-wheel. The power of this screw is enormous, but the press is built immensely strong, and hence, in a few seconds the bale is easily compressed endwise, and shortened about from one-fourth to one-fifth in length, without increasing its diameter in the slightest degree.

While the compression is going on, the two men attending the Press are passing around the two wires, and consequently losing no time by using the compress. When this is done, the pressure is released, the bale dropped out, and the press set for snother bale. Bales can be easily turned out in from three to five minutes each, according to the skill of the attendants.

The press is warranted to bale densely enough to put ten tons in an ordinary box car, say 23 feet x 8 feet x 6½ feet.

Where the quantity of hay baled per day is of no particular object, one man alone can operate the press.

When the press is placed alongside the loose hay only two men are needed to attend the press, in supplying hay to the feed table and in wiring the bales when made. Of course when the press is fed faster, and more power applied, to turn out ten or twelve tons a day, more help will be required to remove the bales as rapidly as made.

The horse power is made with two rates of speed, and so built that two, four, six or eight horses can be used.

With two horses working on the slow speed, the press will average about seven tons a day. Operated with four or more horses, at an ordinary gait, with tumbling-rod on fast speed, the Press will turn out from ten to twelve tons per day of ten hours in the hands of ordinary attendants, and it is claimed by the makers that in the hands of experts trained to the work it is capable of doing fifty per cent. more work in a day, which is from 15 to 18 tons per day.

THE DODGE EXCELSIOR HAY PRESS AT WORK IN THE FIELD.

How to Manage Cuttings.

In reply to a correspondent, the *Floral Cabinet* gives the following directions in regard to the making and managing of plant cuttings :

In selecting a cutting, a great deal depends upon a judicious choice; if the slip is too young and full of fresh sap, it will fade away from too much evaporation; if it is too old—hard and woody—it will take a great while to strike root.

You must take a cutting that is perfectly ripened and is from a vigorous shoot, yet a little hardened at the base. It is also essential to have a bud or joint at or near the end of the cutting, as all roots strike from it, and the nearer it is to the base, the greater your chance of success.

Plant your cuttings in common red pots, filled half full of rich loam and two inches of sand on top (scouring sand will do, but not sea sand); wet this thoroughly, and put the cuttings close around the edge of the pot, for if the bud or joint comes in contact with the surface of the pot, it seems to strike root more quickly. Pull off the lower leaves before you plant the cutting. Press the wet sand tightly about the tiny stem, for a great deal of your success in raising the cutting depends upon the close contact of the sand with the stem. When the cuttings are firmly planted, cover them with a glass shade if possible, as it will greatly promote the growth of the plant.

Moisture, light and heat are the three essentials to plant life; without them no cutting will start. Shade for two or three days from the sunlight, but don't let the sand become dry; then give all the sun you can obtain, keep up a good supply of moisture, and you can hardly fail to root most of your cuttings.

Grasshoppers in Minnesota.

A person who had travelled through a portion of Northern Minnesota, writes to a St. Paul paper about the grasshoppers. He says:—I travelled forty-five miles on Monday, and all the time among the most destructive army of pests I ever witnessed, or any one else, for they were so thick I could with difficulty get my team along, and where they had been only one day and night there was not a bit of grass left. Oster Tail county is nearly all cleared out. I came down through Clitherall, Nedross, Eagle Lake, Leaf Mountains and Millerville townships, and all the entire way, sixty miles, they were thick. A few miles along by Chippewa Village they were not so thick, but down in Ida, Douglas county, the fields are just black with them, and the fences and fence posts are so thick with them that you could not put the point of a pin down for them. One cannot find language to half tell the story. Only seeing will give any one an idea. A swarm of bees when they are swarming is something like the sight.

Growing Tuberoses.

To cultivate the tuberose, that most beautiful of all plants, put the bulbs in six-inch pots, three in each, and use a mixture of equal parts of turfy loam, peat and leaf mold, and place it a pit. Give very little water at first, and as they commence to grow freely, increase it and keep near the glass. When they begin to push up their flower spikes, they will, of necessity, require to be placed where they will have sufficient space for the proper development of the tall spikes. These will come into bloom from August to October, when they will require a temperature raging from sixty to seventy degrees, the latter being preferable. If wanted to bloom earlier, the pots should be placed in a warm pit and on a hot-bed, the temperature of which is about fifty degrees, to start them into growth more quickly.

Agriculture.

Mulching.

This subject, which is gaining additional prominence every year, owes much of its unpopularity to the abuse of its application. I have in my mind's eye an instance that illustrates the damage done the system, simply by employing workmen who were not conversant with the principles involved. What could ever induce a rational being to cover the surface of an orchard two feet deep with straw, is more than the majority of fruit growers could possibly guess, and yet such was the fact. Of course it injured the trees, soured the soil, and made a capital home for all manner of injurious insects, besides whole villages of mice. The advantages to be derived from the use of mulching material may be summed up somewhat as follows:—

First, the desire to keep the soil moderately moist and cool. Secondly, to prevent the surface from baking hard through the combined influences of the rays of the sun and the high winds. Thirdly, as a preventative from weeds. For newly planted trees all of these are necessities; the mulch preserves the surface moist and cool, and this is precisely the condition under which young fibres are formed. It keeps the soil open and porous, another *sine qua non* for the formation and growth of young roots. That it smothers out the numerous weeds that would invariably start was the surface not protected, is a self-evident fact.

For three or four seasons past we in the Middle States have suffered terribly from the severity of the droughts, and had it not been for the beneficial effects of mulching, in many instances the losses would have been frightful. Paradoxical as it may appear, water applied as we will does not answer the purpose altogether. We need something more; shade is absolutely essential, together with an equable temperature. Nature sets us an example in this respect in the fall of snow. It is not so much the moisture contained in the covering that falls so lightly and covers up our plants so evenly; not at all. It is the adequate protection afforded the roots, that no matter how severe the succeeding weather may be, these are preserved cool and unchangeable so long as the snow shall last. I know not of a more beautiful illustration in horticulture than this lesson that nature vouchsafes to teach us.

The material that should compose our mulch differs with the plants to be protected, as well as with the season when it is applied. We may rest satisfied, however, that all green or unfermented substances are deleterious in their nature, and not unfrequently do more harm than good. We occasionally hear of instances, however, where such have been used with good effect, as, for example, the use of turnip-tops for mulching strawberry beds; still the principle is bad and should be discouraged. Heat and moisture engender decomposition in green vegetable tissue, and the heat consequent upon rapid decomposition is very injurious to plant life, when placed in immediate juxtaposition therewith. It calls into active life innumerable forms of fungoid structure, many of which are the forerunners of disease, and all are deleterious in the effect upon the health of the higher orders of vegetation. It forms a proper hot-bed for the propagation and dissemination of millions of insects, the greater portion of which damage the roots and bark of our trees and plants. And, lastly, it imparts a sour and saddened character to the soil beneath, which must affect the well-being of the plant.

What are the best materials to be used is not so easily answered, although there are some things like spent tan-bark that seem really adapted to almost all manner of plants. The healthiest pear trees I ever saw were kept constantly mulched with a good thick coat of this, and each autumn a slight sprinkling of well rotted manure was scattered over the surface. Tan-bark is applicable to most kinds of growing plants, from the largest orchard trees to the strawberry beds in the garden. Straw, not too long, and pliable, cannot well be excelled. It is clean and affords a pleasant shade devoid of any deleterious effects. Hay I do not like, unless very coarse, and green grass kills more than it cures. Manure should never be used in a fresh state, although such is occasionally resorted to around large trees.

Plants in pots, that is, the ordinary varieties usually grown for this purpose, including roses, are greatly benefited by a slight mulch of old hot-bed manure. And conifers, too, show the effect of this fertilizing covering by an increased color and a more vigorous growth. Bright straw is after all the best covering for winter vegetables, such as spinach, lettuce, cabbage, &c. Leaves are excellent for most things, but not around young evergreens. I have seen whole beds of these entirely destroyed by the compact mat which leaves form by spring, and this preventing a free circulation of air, kills the plants in many instances. The subject may be summed up in a few words. After planting, most forms of vegetable growth are benefited by mulching; during dry seasons everything enjoys it to a moderate extent. The number of trees and plants that have been saved by the process is beyond our calculation; then why not apply the remedy more extensively?—*J. H., in N. Y. Tribune.*

Management of the Oat-Stubble.

From a variety of experiments as to the best method of cropping the oat-stubble, we have been driven to the conclusion that the usual plan of sowing winter wheat upon it is not to be preferred. Usually the oat-stubble is plowed as soon as may be convenient after the crop has been harvested, and is then manured, cross-plowed, and sown with wheat or rye. This method favors the propagation of weeds. It is also injurious to the wheat, inasmuch as the self-sown oats spring up with it, and being the more vigorous of the two, smother it, and leave it too weak to resist the heavier frosts of the fall and winter. The dry weather prevalent in July and August is unfavorable to the proper action of the p'ow, and it is rarely that the soil can be brought into the best, or even good condition, for the seed. Of the many plans we have tried to avoid the necessity of following oats with wheat, we have been most favorably impressed with the following, viz.: sowing peas or beans instead of oats; seeding the oat crop with clover to remain two years, the second year's second growth being plowed under for wheat; following oats with peas, beans and early potatoes, or with fodder corn, to be cut green for the cows, or to be cured for winter fodder. In all cases wheat as the final crop. The first method makes it necessary to abandon the oat crop, and is inconvenient in many cases, but when it can be done the pea or bean crop pays better than an average oat crop, and the fodder left by either is fully equal to oat straw—if not better—when well cared for. To seed the oat crop with clover has the disadvantage of extending the rotation to seven years instead of five, and of giving too much meadow for some farmers; but it has the advantage of giving a most acceptable green manuring for the wheat and an excellent condition of the soil for sowing; more especially if the first crop of clover is cut early and the stubble immediately dressed with barn-yard manure or guano. We have had a heavy crop of wheat of the best quality upon a clover aftermath so treated. The third method has given results very much better than those of the usual rotation of wheat after oats; it of course extended the rotation one year, and makes six fields necessary instead of five, but it gives a variety of crops, one valuable to feed either to pigs or sheep, and two to sell. It also leaves the ground in the very best order, that beneath the peas being shaded and enriched, that beneath the beans and potatoes being cultivated and kept free from weeds, and the whole being mellowed and kept moist, so that when plowed it can be brought into the best condition for the seed. A field may be divided suitably for these crops, giving such a portion for each as may be desirable. For those who keep much stock the fodder corn will be found of the greatest value for feed, and of the greatest benefit to the soil, which is shaded, kept cool and moist, and is cleaned and cultivated three or four times while the crop is growing. It is also an easy crop upon the soil, taking but little from it, and if moderately fertilized with guano or superphosphate, leaves the ground better than it found it. We are satisfied that either of these methods will be found more profitable as to yield and more beneficial as to the condition of the soil than the present unsatisfactory one of following oats directly with wheat, a plan that ought to be abandoned wherever it can be done.

What Has Been the Progress of Agriculture in the United States.

In an article in *Moore's Rural New Yorker*—"The Politics of Agriculture," by F. G. Skinner, the writer, speaking of the unsatisfactory results in the average yield of their fields, notwithstanding the wonderful improvements in machinery and implements, says:

The American journals devoted to rural economy are exceedingly numerous, and many of them are conducted with marked ability. Nothing of value to the cause they represent, either abroad or at home, escapes their vigilance. Through their advocacy the powers of steam have been made tributary to agriculture. The reaper and the mower and the tedder and the horse-rake, and many other toil-saving instruments have come into general use, and our advance in all the processes of cultivating the earth has been prodigious; but has the average production per acre advanced in the same ratio? We are compelled to confess it has not. So far from it, we are obliged to acknowledge that the wheat crop has declined within fifty years from an average of twenty bushels to the acre to ten, while in England it has increased in the same ratio. Nor have we anything to boast of in improved crops of the national grain—Indian corn.

The Value of Potatoes as Food.

A Connecticut writer, speaking of the potato as food, says:—

Six per cent. only of the potato is nourishing. The man who eats 100 gets only 6 potatofuls of nourishment and 94 potatofuls of water. For all purposes of well living he might better eat a crust of bread and go in swimming. But somehow, especially in the country, the potato has become very popular, and now that a rival eater of it has appeared, the human effort put forth to keep the field is very great. So the potato-bug is closely followed up, and Paris green, an arsenical poison, is freely scattered about to destroy it. Those who profess to know positively, say that no poison is imparted to the potato itself by the green, and that the plant and its product absorb none of it. Probably they know, but still the arsenic, as they all admit, mingles with the dirt around the vine when it is scattered there. Now it is altogether possible, in the harvesting of the crop, to gather a good deal of dirt too, and every now and then the slip of a hoe makes a deep slit in a potato and drives a layer of dirt into the middle of it. If in the dirt and in the cut potato there is a lot of Paris green, and this gets into the kitchen, there may be some cheerful undertaker speculating in wonder as to the sudden blessings showered on his trade. There are very few chances of such a thing, but there are about 200,000,000 bushels of potatoes raised in the United States every year, and among so many millions there is an opening for all sorts of chances, and in this is the possibility of the bug's entrance into romance.

Dr. Kerzie, of the Michigan State College, replies as follows:—

"I do not propose to notice all the errors of fact and of inference contained in it, but only one:—'Six per cent. only of the potato is nourishing. The man who eats 100 gets only six potatofuls of nourishment and 94 potatofuls of water.'

"Few persons are aware how largely our food is made up of water, the quantity of solid matter as compared with the water they contain being small in most articles of food. We need not wonder at this, when we remember that, aside from the bony skeleton, three-fourths of our bodies consist of water. Every good beefsteak is three-fourths water and only one-fourth solid matter. When a man eats four beefsteaks he gets only one steakful of nourishment and three steakfuls of water.

"But I want to call special attention to the exceedingly watery nature of the potato, as stated in the *Courant*. Such potatoes must have been raised by the farmer who had such wet land that he 'hoed his potatoes with a dipper and dug them with a hook and line.' The potato has been analyzed by a number of chemists. I give the results found by Dr. Letherby:—

Nitrogenous matter	2.1
Starch, Etc	18.8
Sugar	3.2
Fat	0.2
Saline matter	0.7
Water	75.0
	100.0

"We thus find that the proportion of solid matter to water is one to three, just the same as in beefsteak. I do not claim that the potato is as nourishing as beef, but it contains no more water than beef. The attempt to underrate so valuable an article of food as the potato, and one so generally used, by misrepresenting its composition and nutritive value, merely because we fell a disgust at

the potato-bug, is not the way to promote the public health.

"It is a sufficient reply to the sensational part of the article, about the possibility of persons being poisoned by eating the potatoes upon whose vines Paris green has been used to kill the potato-beetle, to state that millions of persons at the west have for years eaten such potatoes, and not a single case is on record of a person being poisoned thereby. As to the danger of poisoning by eating the dirt which contains the Paris green, I can express no positive opinion, because the people out west do not make a practice of eating any dirt with their potatoes."

Agriculture in Europe.

From an address by H. Seymour before the Wisconsin Board of Agriculture.

British Agriculture is almost perfection. Taking the farmers of Great Britain as our instructors, we may derive some valuable hints from their experience. Of the fifty millions of acres under cultivation in the United Kingdom of Great Britain, less than twelve millions of acres are devoted to white crops, or cereals, while over twenty-six millions of acres are kept in permanent pasturage; six millions of acres under clover and rotation grasses, and six millions of acres devoted to turnips and other vegetables. England, Wales, Scotland and Ireland have about two and three-fourths millions of horses, ten millions of cattle, and over thirty millions of sheep. Repetition of white or grain crops is not permitted. Instead of the old process of restoring or resting land by fallowing every fourth year, which was equivalent to the permanent withdrawal of one-quarter of the tillable land from cultivation, the turnip crop, with its broad leaves that shield the soil from the rays of the sun, and with its nutritious roots that are fed, before ripening, to cattle and sheep, is resorted to as the most effectual method of benefitting both land and stock, as biennial plants derive their chief nourishment from the air, and do not exhaust the soil if used before they ripen.

Forty-two in every one-hundred acres in England, and sixty-four in every one hundred acres in Ireland, are pastures. England imports only five per cent. of meats consumed. The capacity of land when kept to its utmost productiveness in densely populated countries of Europe, is demonstrated in the ability of many tillers of English soil, besides paying heavy rents, to support a large family on the products of six acres of land; and in Germany two acres of land have yielded a similar amount of subsistence; while in France, where the long and narrow ribbon-like farms are cultivated almost like gardens, the capacity of land has reached western credulity. The French farmers seem to enjoy great benefit from the culture of the sugar beet, and one farm that is owned by Monsieur de Candaine, situated on the Touraine, valued at 2,000,000 of francs, or about $400,000, with sugar, linen and woollen factories thereon, seems to market annually 1,000 head of fat cattle. The annual income is five hundred thousand francs, or about one hundred thousand dollars. Doubtless, upon investigation, it would be found that beets and oil cake contributed largely to the production of the materials used in the factories, and that grass instead of grain was the commanding crop of that valuable farm.

Farm Drainage.

Every farmer is ready to admit the advantage of drainage when the grounds are too retentive of moisture, but it is one thing to see and believe in that which is right, and another and different thing to put it into practice. In some seasons the land underdrained may yield a pretty fair crop under favorable circumstances and the owner is perhaps inclined to content himself with the old saying that so often checks some useful enterprise—"Let well enough alone." Some admit that lands naturally wet must be the better of underdraining, but the expense of such a work is too high—greater than the additional returns can be expected to repay. We have, in former numbers of this journal, spoken of the advantage of drainage, proved by our own experience and of the experience of others. The following extract from a contribution to the *Ohio Farmer* on this subject, in which he gives a brief account of the expenses sf draining on his own farm, bears strong testimony to the arguments heretofore adduced:—

I have had some experience in this work, having put about 40,000 tiles in 100 acres during the past five years. At the outset my experience cost me rather dearly, as is usually the case, but I do not regret the improvement, notwithstanding the high price and scarcity of labor during my first efforts at underdraining. Now, however, that labor is cheaper and more easily obtained, no farmer who has the means should hesitate to drain his wet land. The first business in order is the proper study of the subject. Let every farmer who contemplates much underdraining obtain and study this work before he commences. Then let him visit a farm where this improvement has been successfully made, and he will be properly prepared to begin a thorough examination of his own farm in order to determine how he can relieve his wet lands of surplus water. It cannot be done without money; neither can any other improvement. Labor is money, and in many cases one's own labor is more costly than hired labor. So that it is better, as a rule, to employ skilled or experienced labor to do this work than to do it one's self. Especially is this the case with tile drainage. The expense of the tile is too great to risk the failure which will usually result from ignorant workmen.

The wet lands of most farms are the best when well underdrained. This has proved the case with mine, and I believe this is the rule. What is to be done with such lands? To work them in their wet, cold condition is not profitable. Such land must be underdrained. There is no profit without it, that is certain. Will it pay to drain such lands? That depends upon the cost of the work and the manner in which the work is done. Generally speaking, it will pay. If the land is naturally good, and open outlets to the main drains can be obtained without extraordinary expense, nearly all lands lying near villages and cities, when too wet for profitable culture without, should be underdrained.

During the present year I have thoroughly underdrained twenty-six acres of land, placing therein 6,361 tiles from two to five inches in diameter—all sole tile, which I prefer to open or round tile if the subsoil is clay, as mine is, and no quicksand. These tile cost me from fifteen to fifty-two dollars per thousand, or, in round numbers, $114. The labor of laying, together with 100 rods of open ditch in one of the boundaries of my farm, 584 rods in all, at twenty cents per rod, cost $112, or $226 to thoroughly underdrain twenty-six acres of land, which, when well seeded, will easily give me from two to two and one-half tons of good hay to the acre, and correspondingly large crops of corn.

As with most farm improvements, so with underdraining. The wiser plan will be to commence with a few acres. This will test the skill of the workmen and give the owner some practical knowledge, and a little experience, which will prove of great advantage in the oversight of future operations. The best time for laying tiles is the open winter months, when labor is cheaper, or in early spring. At this season the springs are full, and one can better judge as to the size of tile required to carry off the water. Besides, a water-level is the best guide to secure perfect grade to the drains, without which the work will prove a failure.

Referring to improvements, among which drainage may be regarded as but one of the frequent requisites to most farms, as well might we call in question the necessity of thorough tillage, or the advisability of a liberal use of fertilizers.

To contend that farming will not admit the quality of thoroughness (and in that term I include drainage when necessary and possible), liberal fertilizing and good tillage, is to admit the leading and most essential occupation of the human family a failure. Such a conclusion would excite only ridicule. It is simply nonsense. Farming is no failure. True, men fail to attain large success in the management of farm property. So they do in every other avocation. But this failure in most cases is due to bad management and want of capital, or inexperience. The mission of the agricultural press is to disseminate knowledge and experience, and the great progress of agriculture in all its departments for the past forty years is chiefly due to its able writers; but those who write cannot be too careful, as experiments are too costly for the average farmer.

Buckwheat for Orchards.

For some reason, buckwheat, which is not much of a crop in itself, is found to be just the thing for growing in orchards. The dense shade afforded by the plan, keeps the ground light and friable, and this tendency is further increased by plowing under the green buckwheat at least once a year. If the orchard is old, it is as well not to try to grow the grain, but keep a succession of growths through the year, to be turned under when in blossom.

Buckwheat is usually cheap, and needs only half a bushel per acre for seed. If allowed to ripen a crop occasionally, what is accidentally scattered will furnish sufficient seeding. This is the cheapest mode of keeping large orchards in good condition, as the grand requisite is to keep the soil, especially the surface soil, loose. Clover injures the growth of young trees, and it takes two years to get a crop ready to plow under.

A new advantage of buckwheat is, that, when rightly managed, it becomes an aid in fighting the codling moth. If the trees are kept smooth and no chance for a lodgment of the worm on the trunk, many will hide in the stalks of the buckwheat. Plowing the ground before winter sets in destroys the enemy, as it winters in the pupa state, and cannot live in contact with moist earth. Where all the loose stuff, weeds and rubbish are plowed under just before freezing, thousands of the codling moths are destroyed, thus greatly lessening the evil the following season. This has been practically tested by apple growers of the Grand Traverse, Mich., region, who find buckwheat the best crop to keep their orchards in good condition.—*N. Y. Times.*

Cheap Gates as a Substitute for Bars.

A writer in the *Rural Home* says:—"I have just made gates to replace some-old-fashioned pairs of bars that I am heartily tired of opening and shutting. They are cheap, durable and very easily made. Each gate is twelve feet in length by four feet in height. Five boards four inches wide are used, besides batten and braces. Battens should be placed on both sides, making three thicknesses to nail through. It does not take more than thirty-three feet of boards, worth perhaps sixty-six cents, to make each gate. Add to that ten cents for nails, and the value of one hour of your time, and you have the whole expense. A gate of this kind will outlast a framed one costing $4, and as no hinges are used, that expense is saved also. It is held in position by means of a stake driven in the ground four or five inches from the post; not in a straight line, but a little more than the thickness of the gate toward the drive-way, so that when opened the gate can be turned half way around and be parallel with the drive-way. It is kept a few inches from the ground by a strip, nailed to both stake and post, on which one end rests when shut, and on which it slides half its length and then swings round as on a pivot when opened. The strip is usually placed under the second board, in a space arranged for it, by cutting away two of the battens. This strip takes the place of hinges. A gate of this kind can be made in much less time and at as little expense as a pair of bars, and is certainly much more convenient."

A New Enemy to the Corn.

The Reading (Penn.) *Times* says:—"A new enemy to the growing crop of corn has been discovered this spring, which is committing considerable destruction of some section of the country. It is a peculiar black worm, which can scarcely be crushed on the loose earty, as it is encased in a suit of armor difficult to break. They operate in the corn hills by eating off the young plants As many as ten or twelve worms are sometimes found in one hill. The cut-worm has hitherto been a great annoyance, but this new pest is said to be even more destructive. In some townships farmers have replanted corn fields that have been thus devastated. Paris green has been found to be as efficacious in exterminating these worms as it is in destroying the potato bug. Powdered white hellebore is also said to be very efficacious.

Turnip Insect.

A new and destructive pest has attacked the turnip crop in some sections of the Province. It is not the fly or flea hopper, which only attacks the plant in its early rudimentary stage. which is now past. A farmer in the township of Blenheim states that as he proceeded to single out his crop lately he found large patches, several yards in length, cut down in drills, apparently as if the root had been eaten across by a cut-worm. These plants are entirely destroyed, and the same effect has been noticed on several other farms.

Correspondence.

As editors are supposed to know everything, and a'so willing to tell all they know, I take the liberty of sending you two heads of wheat, which grew among some Club wheat this year, the seed of which came from a distance. The Club is more than half destroyed by the midge; those bearded heads much less hurt.

Would you please to name the two kinds I send and also give your opinion of their value in the next number of the ADVOCATE?

Last fall I sowed two bushels of Clawson wheat, it stood the winter well and stooled out beautifully, some roots having more than a dozen stalks; it would have yielded, I think, more than forty bushels to the acre if it had not been rusted. The heads are in size tully equal to those shown in the ADVOCATE last year, but the grain is badly shrunken.

A great deal of wheat in this section (South Ontario) is about destroyed between the midge and rust; some farmers have cut their wheat for fodder while very green, intending to use it as hay. The variety generally sown is Fife wheat. I tried an experiment this year and sowed about three acres of wheat on sod fresh plowed. I am fully satisfied and think it will be some time before I try that again. J. H. R

Kinsale, Aug. 10th, 1876.

[The heads of wheat you send resemble the Weeks wheat. By all means sow it again; it may turn out to be a valuable variety. Its comparative safety from the attacks of the midge, while the crop among which it grew indicates a valuable property which future trials may prove it to be possessed of, nomely, being midge proof. We need hardy varieties of wheat to resist the various enemies by which the grain is liable to be attacked. Our reports of the Clawson wheat are generally favorable.—ED.]

The prospects of the harvest which has now commenced are not, so far as our great staple wheats are concerned, so favorable as they were a month ago; and our farmers have to attend to the raising of fat cattle and horses for the supply of the English and French markets more than they have yet done. The Meat Preserving Company, at Sherbrook, Que., was doing an extensive business, but the covetousness of the Eastern Township farmers has over-reached itself. Had they been content with their first moderate profits, the company would never have gone to Chicago, but now they know where to get better cattle at a lower price, they will probably go there again when the state of the weather permits them to resume business; and I fear that if the Grangers are not contented to buy their agricultural implements at reduced prices from the manufacturers, but will persist in establishing a manufacturing company amongst themselves, they will find in the end that they have "gained a loss." The prospects of the crops in the township are favorable. We have not had so much rain as most other townships have had, so that although the hay crop is lighter than it would have been, yet comparatively little damage has been done by the rust or the midge; in fact, owing probably to the comparative coolness of our nights, the result of our proximity to the Georgian Bay, the midge has never been so destructive in this township as it has proved in most other places. The blossoming time is the critical period for the wheat crop, and if heavy rains occur during that time the blossom is washed off and the grain does not fill, and when the rains are accompanied by excessive heat, rust is the inevitable result. Our spring wheat is just passed its blossom, and we have had no heavy showers for some time, so we may expect to have a good sample, and the rust is yet confined to the blade of the wheat, the many cool nights we have had lately seem to have checked the rust, and if the present dry weather continues a week or two longer it will be ready for the reaper. I am informed that in other places the wheat has been cut for fodder, although I should not like to feed my stock on rusty straw, nor if very bad would I like to use it for manure either. When the rust is so bad that the crop is not worth threshing I should prefer to rake the straw into winrows with the horse-rake and burn it on the ground, and this would effectually destroy any Canada thisthles or other weeds that may have been allowed to grow up with it. We have never yet had the Canada Thistle Act enforced in this township, and unless the Act is amended by the addition of a clause rendering it imperative on municipal councils to appoint a paid inspector to enforce the Act, it will remain in most places as at present—a dead letter. Too much of our legislation is merely permissive, and consequently to a great extent inoperative.

C. JULYAN.

FREE TRADE VS. PROTECTION.—SIR,—After all that has already appeared in your columns in favor of Protection, I need not argue that question further, but merely wish to point out the consequence of Free Trade in England. It was not Free Trade, but Protection, that made England rich, and when her manufacturers had by their superior skilled labor and improved machinery attained a position that enabled them to supply the markets of the world, then was heard the selfish cry of Free Trade. At present other countries have under favor of Protection made such advances both in skilled labor and improved machinery that they now undersell the English manufacturers in their own market. American cotton is now sold in the English markets of such superior quality and fine finish as to give general satisfaction, whilst in large towns where new buildings are being erected iron girders from Belgium are used because they are cheaper. Belgian workmen work longer hours and live at a cheaper rate than English workmen either can or will do, and Free Trade enables them to compete successfully with English manufacturers, so that unless English manufacturers can make still greater improvements in their machinery and English workmen should prove willing to return to the old rate of wages, which is rather unlikely, either all nations must adopt Free Trade, which evidently they are not inclined to do, or the English Government must return to Protection principles again, or the decrease in the customs returns will compel the reimposition of the income tax. In whatever locality manufactures spring up an increase of population follows, and consequently a greater demand for the fruits of the field, the orchard and the garden. Whilst admitting that the Americans have carried Protection to the extreme of prohibition, which has had the effect of stimulating production to an extent beyond the wants of the community, and the over supply has caused great loss to the manufacturers, yet the great centres of industry which have been the result of protection still remain, and when the present excess of goods in the market has been worked off a resumption of manufacturing activity will soon be manifest. The more sagacious of their statesmen are beginning to perceive their error, and will probably arrive at a more correct view of their duties in a few years, and if our present rulers follow the American example just so far only as may be cosnistant with the real interests of the country, we may hope for better times than we have at present. SARAWAK.

OUR ENGLISH CORRESPONDENCE.—The following letter from our friend Mr. W., of Battle Abbey, we regret only came to hand after our last issue had gone to press. Even now, a month later, it will be read with interest. Mr. W., it may be seen, is a close observer, and he has the talent of condensing much useful information in few words; as in his comparisons of soils, climates, and modes of cultivation. The first course we have before now written of in the columns of this journal. We hope Mr. W. will favor us with many communications from the Home country:

As I promised to write to you after my tour to Lincolnshire and Northumberland, I take pen in hand to fulfil my promise. I spent a very pleasant ten days in Lincolnshire; and the crops in that county look very well indeed; in Bedfordshire and Herefo dshire they are rather deficient in plant. Between Doncaster and Darlington there is a fine farm district, and the crops look well, but are a month behind those in the south of England. There are some very fine Short-Horns in this district. On the banks of the Tyne, to the westward of Newcastle, there is some good land, and some very good herds of Short-horns. The Northumberland farming is very different to the South of England, they farm on a far coarser system, viz:—1. Seeds mown; 2. seeds fed; 3. oats; 4. turnips; 5. barley. They grow little wheat, as they can grow six quarters of good malting barley to the acre, which pays better than wheat. Most of the farms have fixed steam threshing machines attached to their buildings. They pay high wages in Northumberland; each man is hired by the year in May, and has to find a woman for field work at 1s 3d a day; he has 24s a week, a cottage, six bushels of wheat and eight sacks of potatoes found him; they are a fine set of laborers. Mr. Foster, whom I stayed with, is a white-lead manufacturer, and employs 200 men and 100 women at his works at Farrow, and it is quite a sight to see the weights the latter carry on their heads; he has made £100,000 and has bought an estate which he farms. We came home by Harwich and saw eight of the English lakes. The mountain scenery in Cumberland is grand, and the mountain sheep is delicious mutton; they have black faces with specks of white and black legs. I saw some good farming land on the west coast of Cumberland. I can say that the North of Englland air has quite restored my health. I shall begin harvest in ten days' time; the corn has much improved, but there is deficiency of plant; I grew three tons of clover hay, first cut to the acre; I mended the field with 2 cwt. of fish guano to the acre; the hops have improved, but they will only be half a crop.

We are again obliged, from pressure of matter, to postpone to a future issue a communication in favor of incidental protection, received in June. We hold it in reserve.

VISIT TO THE CENTENNIAL EXHIBITION.—Will you visit Agricultural Hall with me and see what we can find that will interest your readers?

Entering on the south we see on our right the familiar productions of Canada here as in Machinery Hall allotted a very favorable lacation. The display of agricultural implements, though not large, is creditable to the country. The tasteful selection of woods used in construction and the display of their grain, is especially noticeable.

Do you see that machine to the left that looks like a portable engine? It is the Aveling & Porter road locomotive. There are two or three on exhibition. It has a competitor in an engine manufactured in Brooklyn, N. Y. The Aveling & Porter engene has two driving wheels, while the Brooklyn has a large roller, on which a large proportion of the weight bears. This appeared to give it an advantage in drawing heavier loads and in passing over a yielding ground, while perhaps it may be disadvantageous in turning. It is turned by steam power, while the Aveling & Porter is turned by the hand of the engineer.

We cannot expect to see a great display of agricultural implements from Great Britain, for the market is not open to them here, besides there has not been so great a demand in the old countries for labor-saving implements.

It is quite evident that we need not go across the sea for models of labor-saving implements in agriculture; indeed, with an abundance of the best materials for manufacturing, and skilled artisans from every country in the world, the people of this continent may hopefully expect to export increased quantities of implements to Europe.

On the left of the aisle and on the north of the aisle running east and west, are the productions of the several countries—from Canada west are the machines and implements of agriculture. The display of agricultural engines is divided between this and Machinery Hall, and is therefore not as imposing as it would be if together.

Nearly all the mower and reaper manufacturers are represented here, and the display is very interesting. Very much has been expended for the sake of making a display. Mowers and reapers made of white ash and black walnut, oil finished and silver plated, occupy spaces covered with handsome carpets, all presenting a very beautiful appearance.

There are a number of machines with binders attached that use wire for binding. Here are seed drills in endless variety; yonder is one looking out of place among its polished companions, but we will say nothing worse in regard to it, for it bears a placard saying, "I have been in use 20 years."

Just look at the plows! One needs to understand agriculture as practised in different parts of the country, the mode of cultivating different crops, to understand the design and use of these plows. Each one is for an especial purpose. Among the many there are a few designed especially to attract attention. There, for instance, is a nodel, gold-finished, costing $1,200, I am told; it is under a glass case and slowly revolving. There are others full sized, highly finished, better fitted for a show case than a stubble field. In striking contrast to these beautiful specimens of scientific study and mechanical skill, is the old wooden

mold-board plow, one of which may be seen among the plows, and another is said to be Daniel Webster's plow, in the department of Massachusetts, on the north of east and west avenue. They present in a very forcible manner the great improvement made in plows within the memory of the "oldest inhabitant." How little of this display of agricultural machines and implements could have been made fifty years ago? It is astonishing how much of the work of the farm may now be done by machinery, and by machines in this building.

Look at that sulky plow, with its comfortable seat and canopy to protect from the sun; with a handsome pair of bays it would make a beautiful turn out?

Now we may be helped to rise in the morning by a patent alarm clock tilting bed. The pretty milk-maid has given up the business to the hired man, who milks thirty cows at a time with our patent milker. We take a morning ride on our beautiful harvester, with a man to take care of the machine, ride over a ten acre lot and leave it cut and bound. We ride on the sulky plow, and the furrows slide beneath us like flowing water. Our poor grandfather had to hold on to the handles and walk with one leg on the second furrow and one on the land, to keep himself from turning a forced hand-spring. We cut our grass, spread it, rake it, load it, unload and mow away by machinery. We thresh and clean our grain, cut food for stock, cut our wood, and can shear our sheep. That's so! I saw the hair cut from a fellow's head by a machine in a way that must have been startling to any squatters in that locality. Who would not be a farmer? I must stop, and have no time to close gracefully. G. S. T.

[Mr. T. will excuse us for slightly abridging his very graphic Centennial communication, as our space is limited.—Ed.]

The communication from our Leeds correspondent we have been obliged to hold till the present issue of the Advocate. The mode of laying down to grass here described by Mr. Squires differs from that of Mr. Harris. Both methods if carefully followed have proved successful:

Sir,—I see by the Advocate you wish to have your subscribers' opinion on seeding down land for meadows or pastures. Now I would like to know what bed this seed has to be in, for I consider it of the utmost importance that the land should be thoroughly plowed and harrowed, and pulverized, not only to kill the weeds, but to level the ground to let the seed fall regularly; for nothing can look worse to the eye of a farmer than to see the seed of any sort come up irregularly, and I am sure all your subscribers will see the necessity of sowing grass seed in the first grain crop, after potatoes or turnips, or any other green crop, for land cannot attain a good sole of grass in any other way, both to keep the land clear of weeds and to remunerate the farmer. But this much is my opinion, and long experience confirms it, that what would add greatly to the benefit both of the grain crop and the crop of grasses would be a slight coat of lime mixed up with some old earth dug out from any old corner or headland. I never saw the effects of lime more pointedly than I have in their manner, always supposing that the green crop lately spoken of was fairly manured with dung, for I will not speak with confidence of any patent manures, not having had much experience in that line. Now I will say something about the seeding as to quantity: I think it impossible for any one to say, for you, sir, have spread the Advocate over nearly half of this Continent and as needs must be every kind of soil and climate, and how is an essayist to reconcile his judgment to the satisfaction of all parties? For my part I will tell you as well as I am able my experience and observations for the last 60 years, and also state the quantity of seed sown in Devonshire, and the comparison of here and there. In England,—timothy, one and one-half gallons, or three gallons of rye grass; red clover, five lbs.; white clover, three lbs; trefoil, two lbs. for one acre. In Lower Canada, or Province of Quebec,—The first seeding out, on clearing the bush: Timothy, two gallons; red clover, three lbs; and at that time the strong virgin soil would give an excellent crop of hay for several years. Now, since that same land has been stumped and plowed, it takes as much seed per acre as in England. Now, you will ask me by what gauge I go by to know exactly when seeded enough. Simply this, if you have deep, heavy soil, give a trifle less than the English quota; if light and sandy, a trifle more, according to the judgment of the farmer. And now I shall give you the test by which I have always gone. It is this: about a month after the seed is sown and also in the fall, after the grain crop is off, inspect your field narrowly, and if any of your grasses should look small and spiry regulate it the next year, and you will soon find out the true proportion of seeding. For my part, I would rather seed of any kind a trifle thin than too thick. This is my plan, and I think it will hold good as far as you have sent the Advocate. Some one may ask why I did not throw in some other grasses into my seed. I can only say, ever since the first sowing of grass seed, that I know the grasses I have named have stood with a character unblemished, and from north, east, south and west they are allowed to be the best fattening grasses. Why then should we pollute our soil with a mongrel breed while we can get the pure and beautiful. Observe, I don't condemn all other grasses. The Alfalfa, the Orchard, the red top and others will answer some land well, but some one will say the clover will run out in a few years; granted, and then is the time to set the plow on it again, which is far better than to let it get overrun by grasses of a wild sort, such as broad grass or sedge, and many others which the cattle will eat if necessity compels them, when young and tender, but the growing or fattening qualities are not there; therefore, I say sow the best seed, and you will get the best herbage. If for meadow, don't forget the top dressing; if for pasture, it is not much needed. And be sure and not let your clover get too ripe; cut it as soon as you see the first blossoms.

P. S.—I had almost forgotten to tell you my most approved plan of putting the seed in the land. After the grain seed is harrowed to your satisfaction, then sow your grass seed and harrow as light as possible, and roll with the harvest roller; and as soon as possible after the plowing, particularly in hot, dry weather, when the plow will fetch up a freshness; and rolling the last thing with a heavy roller keeps it from getting very dry, and greatly adds to the germination of these tender seeds, which is the subject of the present enquiry.

F. S.

Poultry Yard.

Fancy vs. Table Poultry.

The London *Field* says:—"Let us take a few of the varieties as they are now shown, and ask ourselves what have been the results of breeding them for show purposes only. Old fanciers remember when a Spanish without red in his face was never seen, and when the earlobes of the prize birds were not a quarter the extent they are now. Can anybody who is not an eligible candidate for Earlswood Asylum imagine that the new leggy, large-faced birds are as good egg-producers or useful as table fowl? If so, let them send a consignment to the markets and see what they will realize. The old breed were shorter on the leg, larger in the body, and much more prolific as layers than those in which everything has been sacrificed to face and earlobe. Even the useful red-faced Minorca has come under the influence of exhibitors, who have bred them with monstrous useless combs, and tried to degrade them into fancy fowls. The old Dorking—short-legged, square-bodied and small-boned, with every aptitude to lay on white fat under a thin, fine, white skin—has been changed into a long-legged, heavy, big-boned bird, that shows in every point his descent from the coarse Indian cock, from which he descended. Hamburghs have been bred for feather only; Polish for crest, and the white-crested have been so inter-bred that roupiness and humped backs appear to be the normal characteristics. The old Surry and Sussex fowls, that still supply our best poultry for the London markets, are never seen at shows. Almost the only breed that has been improved by the high-class poultry fancy is that of Aylesbury ducks, which have certainly increased greatly in weight. Show geese have also had their size greatly augmented; but what about the fertility of the overgrown monsters?

Chicken Cholera.

We have heard from several breeders in Canada who lost quite a number of valuable birds by cholera. We have also lost quite a number ourselves, and have tried thoroughly the remedies given in former numbers of this journal, but without the least good result. The only thing I find, that has checked it in my yards, is feeding on dry food (wheat and corn), giving water but once a day with a lump of alum in it.

If any of our readers have discovered any sure remedy, we hope they will make it known through the *Journal*.—*Poultry Journal.*

Remedies for Chicken Diseases.

Walker Byers, of Caneyville, Ky., communicates the following as the results of his experience in keeping fowls, to the *Weekly Courier-Journal*:

For chigre, mix pulverized sulphur withe the food and drink of the chickens, and put sulphur in the dust where they wallow. Remove all the old nests, poles, litter, &c., from the hen house, then shut up the hen house tight and burn tobacco stems and sulphur in it till all the insects are suffocated. Then place in new poles of sassafras for the chickens to roost on. Scatter sassafras bark all over the bottom of the house.

Hints.

We would impress upon the minds of our readers the great importance of keeping the poultry house well cleaned. In the warm months of summer the droppings and refuse matter that accumulates rapidly in poultry honses soon begins to decompose, and disease of various kinds are generated. See to it now that your roosting rooms are cleaned at least twice a week during the hot months. You cannot safely neglect this very important hygienic measure without endangering the health of your fowls, and incurring the risk of loosing them by disease. If you do not attend to this mrtter, when you find your flock being rapidly diminished in numbers by an epidemic you can have the satisfaction (?) of reflecting that it is the result of your own culpaple neglect.

By this time the early chicks are left by the mother hen to "scratch for themselves," and they need extra care and feed while growing. If you want choice specimens for the show pens next winter, you must not neglect them now. Asiatics should not be allowed to roost on a perch until they are three or four months old. They are less likely to have crooked breast bones if they are kept on the ground. Soft hay or straw should be provided for them on which to roost. It should be changed every few days. The chicks must have plenty of fresh water—have it pure. Clean out the drinking vessels frequently, and add occasionally to each gallon of water two tablespoonfuls of tincture of iron. Ground bone may be fed with great advantage. It will prevent leg weakness and will assist materially in making a strong, healthy fowl. Grass runs should be provided for the chicks. They will grow faster and be all the healthier and hardier for having plenty of grass.

A young lady in Bethel, Pa., during the year 1874, kept a strict account of all the expenditures for feed, &c., for her yard of fowls; at the regular market price for fowls and chickens she cleared above all expences $360, besides having more stock on hand than she started with.

"Vulture hocks" is the name given to stiff feathers that project below the knee of the fowl. They occur in all the Asiatic breeds, and are unsightly and objectionable.

In purchasing Buff Cochins, bear in mind that a clear, even buff, without penciling of black in the neck or body, is essential to a first-class bird.

A despatch from St. Paul, Minnesota, says:—The damage done by the grass-hoppers on the north-western, western and south-western borders of the State is incalculable, but the amount of crops destroyed so far is inconsiderable, counted as a whole, although hundreds of industrious, hard-working settlers have lost their all and have nothing to live upon. The *Pioneer Press* concluded an editorial article on saying that "a great part of the region west of and including Jackson County to Eastern Dakota and south through Western Iowa, is covered with devouring hosts, and our reports indicate that the entire crops are being swept away, and that many of the discouraged settlers are temporarily leaving. We record the sad fact as a matter of news which it would be useless folly to attempt to conceal, for it might well be understood now, that the North-western States have to fight these grass-hoppers to death and get rid of them at any cost, or they will make a desert of the whole region west of Lake Michigan before many years."

Garden, Orchard and Forest.

The Rose—The Queen of Flowers.

If you should choose a Queen of flowers,
The Rose that Queen should be;
The ornament of summer bowers,
The pride of earth is she.

The epithet queen of flowers is fully as applicable to this flower now and in Canada as it was when written over two thousand years ago in the bright, sunny land of Greece. Were we to be denied the luxury of having more than one variety of flower in our garden, the flower of our selection would be the rose. We cannot without much difficulty have in our grounds some of the more rare roses of more southern climes. Some of our old favorites we are not able to produce were in perfection. The delightful moss rose, as it grew in our old-fashioned gardens, is not much grown here. We have, however, roses in the greatest profusion if not of the grandest and rarest sorts. An amature florist complains of the failure of his endeavors to grow this lovely flower in his grounds. This failure has most probably arisen from his endeavoring to grow only those *in fashion* (for there are fashions in flowers). These are the more tender and most difficult of propagation. A rose even of the commonest sort is worthy of cultivation, even the wild rose has been transplanted into the garden and planted among shade trees and is highly ornamental; it improves by cultivation, and a bouquet of its buds is an object of beauty and fragrance.

Many roses, the commonest and hardier kinds, are easily propagated from the suckers; others by more scientific methods, as by layers, grafting and budding.

Lady Baker, in her "Letters from South Africa," written from Marietburg, Natal, gives us the following charming description of the Queen of Flowers:

"But the feature of this garden was roses—roses on each side whichever way you turned, and I should think of at least a hundred sorts. Not the stiff, standard rose tree of an English garden, with its few precious blossoms, to be looked at from a distance and admired with respectful gravity. No; in this garden the roses grew as they might have grown in Eden—untrained, unprunned, in enormous bushes covered entirely by magnificent blossoms, each bloom of which would have won a prize at a rose show. There was one Cloth of Gold rosebush that I shall never forget—its size, its fragrance, its wealth of creamy, yellowish blossoms. A few yards off stood a still bigger and more luxuriant pyramid, some ten feet high, covered with the large, delicate and regular pink bloom of the *Souvenir de Malmaison*. When I talk of a bush, I only mean one especial bush which caught my eye. I suppose there were fifty cloth-of-gold and fifty souvenir rosebushes in that garden. Red roses, white roses, tea roses, blush roses, moss roses, and last, not least, the dear, old-fashioned, homely cabbage rose, sweetest and most sturdy of all. You could wander for acres and acres among fruit trees and plantations of oaks and willows and other trees, but you never got away from the roses. There they were, beautiful delicious things at every turn—hedges of them, screens of them, and giant bushes of them on either hand.

Hints on Fruit Culture.

Fruit culture for profit has had to contend with over abundant crops the past year or two, and the trees in such cases are weakened. Now, this may be remedied by thinning out fruit in infancy. This prevents a glut, gives finer fruit and saves the trees.

Besides thinning the fruit, we should thin the young branches. Handsome forms are as desirable in fruit as in ornamental trees. No winter prunning will do this exclusively. It may furnish the skeleton—but it is summer pinching which clothes the bones with beauty. A strong shoot soon draws all its nourishment to itself. Never allow one shoot to grow that wants to be bigger than others. Equality must be insisted on. Pinch out always as soon as they appear, such as would push too strong ahead—and keep doing so until the new buds seem no stronger than the others. Thus the food gets equally distributed.

Fruit growing primarily for pleasure, to follow with plenty of good fruit, has been much encouraged by the greater success of the grape of late years. There is much more interest in having collections of varities than there used to be.

As to the best system of prunning grapes, there are several "schools" all contending that their views are decidedly best. In such cases, we have generally found much to admire in them all—situations and peculiar circumstances deciding the point in each individual instance. There are a few points incontrovertible to insure success, and it matters little what system of pruning is followed, so that they are secured. First, a healthy set of roots of the previous year's growth is essential to produce a vigorous start of growth the year following. Secondly, after starting, these roots can only be kept vigorous by encouraging an abundance of healthy foliage, to be retained on the vine as long as possible. Thirdly, the leaves of the first growth are at least of double the value to the plant than those from secondary or lateral shoots; they should, therefore, be carefully guarded from injury. Fourthly, checking the strong growing shoots strengthens the weaker ones, equalizes the flow of sap to every part of the vine, and ensures regular and harmonious action between all the parts. Any system that secures this does all that is necessary for the general health and vigor of the vine; and where some special objects are desirable, such as drawfng, particularly early bearing, productiveness at the expense of longevity, special means must be employed to bring them about.—*Gardners' Monthly.*

Canadian Fruit and Report of the Entomological Society at the Centennial Exhibition.

The correspondent of the *Michigan Farmer* has received the report of the Fruit Growers' Association of Ontario, and that of the Entomological Society, and says:—These reports are of great interest to Michigan, because Canada is a near neighbor, although a foreign country, and efforts made in the Dominion may well afford useful comparisons with those of Michigan. The report is illustrated with two lithrographs, colored, of two valuable Canadian raspberries.

One is called the Arnold and is a light yellow or straw-colored berry of large size, and the other is Saunders' Hybrid, being a cross between the Philadelphia and Doolittle. It is a purple berry showing qualities of the two berries even in color, and as color generally indicates quality, it is probable the excellent qualities of both these valuable berries are transmitted, and a very valuable Hybrid is the result.

ENTOMOLOGY.

The exhibit of the Entomological Society of Ontario is very extensive and valuable. There is no finer collection of insects at the Centennial that I have yet discovered than the one in the Canadian Department of Agricultural Hall. The insects are all nicely arranged and labelled in glass cases, and several specimens of each kind, making a very beautiful as well as interesting exhibit. The report shows, however, that this is quite a young society, and that it has branches in various parts of the Province, and many of the members are very young students in the science of Entomology, but, notwithstanding this, they are good at collecting specimens and making intelligent reports on the habits of the insects. Members sometimes make excursions of several weeks in pursuit of their favorite game, and then make reports of the result and form their specimens in rows and in proper for the assistance of fruit growers and farmers.

Canada has done herself credit in her numerous exhibits in several departments of the Centennial, but in nothing has she done better than in her contributions to Entomology.

Bark Louse on Fruit Trees.

Most of the experiments made for destroying this insect appear to have been rather unsuccessful. At a late meeting of the Pennsylvania Horticultural Society it was a subject of consideration. T. M. Harvey said, however, that he had succeeded by placing pieces of whale-oil soap in the tops of the trees, from which the dissolved matter ran over branches and trunk. J. H. Bartram had cleaned the trees by washing with a strong potash solution in winter. Mr. Sprout had put his trees in fine order by placing a bag of the following mixture in the forks of the trees, namely: two pounds copperas, one-half pound blue vitriol, one-fourth pound of saltpetre, four pounds hard soap, four pounds common salt. Others recommended whitewashing, soap and sand applied with a cloth, fish oil, &c.

Referring to the Pear Blight.

B. J., whose communication to the *Country Gentleman* we gave in the last number of the Advocate (p. 125), in another communication, says:—"If the last pruning and the amendments herein recommended were done and applied after September, and before the frost sets in, the result would be likely to be more advantageous than if deferred till Spring, since, and for the reason that the new material would have had time to settle closely about the old, and be ready to feed the young rootlets at their earliest start the following Spring."

After further reasoning in support of the proposed remedy, he writes:—"I suppose it has been as clearly demonstrated that a peculiar fungus accompanies or follows an exhibition of pear blight as that of rust in wheat or other small grains is due to the development of a special fungus. The development of both is stimulated by the same kind of weather, and on soils where pear blight is worst there also rust is most certain to appear and take the small grain crop. Is there, or is there not, a striking similarity in the development of all fungus growths, for the reason that they are all attributable to the same or similar causes, namely, an excess of nitrogen and atmospheric food and stimulants, and a corresponding deficiency of available mineral food material."

We bring this proposed remedy before our readers prominently, hoping that it may be put to trial by several and approved, if found a failure, condemned. The remedy is a very feasible one, the root-pruning checking the over-luxuriant growth of the young wood, and the supply of mineral food inducing a greater hardiness. The method is one we had practised for some time with our currant bushes, and we have never failed in securing an abundant crop of good fruit.

The Timber Supply Question of the Dominion of Canada and the United States of America.

Mr. James Little, of Montreal, alarmed at the rapid destruction of the forests of Canada, as well as of the entire North American continent, has published a valuable pamphlet bearing the title given above. We have in this journal frequently drawn attention to the improvident destruction of this great source of the wealth of the Dominion. For the supply of a present revenue we have been recklessly wasting the property that by judicious care would for many future generations meet all the demands of the country for timber for agricultural and economic purposes, and also bring in a certain unfailing income,

From the present annual consumption of the timber of Canada we can conceive some idea of its value, even now when it is so abundant in the market. Mr. Little shows that not less than $126,233 worth of timber was exported from Canada during the last five years, while the whole consumption was fully equal in value to that exported. The value of our shipments of timber was much greater than that of the grain during the same period. Besides the return for the timber shipped, the Provinces of Quebec and Victoria each derived half a million from timber dues, rents, &c. From Mr. Little's calculations it is apparent that if the cutting down of our forests proceeds at the same headlong rate of "spoilation and waste," as he characterizes the proceeding, "we will not have a foot left this side of the Rocky Mountains of the commercial woods which yield us such sums and supply our home consumption for the short period of a dozen years at the outside." But this wholesale destruction must have an end, if not from a more provident use of the wealth to which we have been inheritors, than in a few years from the utter exhaustion of the supply that so lately seemed inexhaustible.

From Mr. Little's very carefully preparted article we take a few brief extracts, referring those who may desire to obtain full information on the subject to the work itself:—

"British Columbia," Mr. Little asserts, "though it has a valuable supply of timber, it is at such a distance from the world's market that it can in no way be generally utilized until there is a railway to move it into the Saskatchewan Valley, where there is only a small quantity, The woods northeast of the Rocky Mountains are too far away to be of use to us in the East; there is an enormous prairie territory, as large as a dozen States. Manitoba has little timber worth mentioning. The northwest extremity of Ontario, once unsurpassed on the globe for its timber wealth of pine, oak, wal-

nut, ash, elm and white wood, is now depleted. The woods are all but gone, hardly any can now be seen west of the Northern Railway. The Muskoka country is undergoing the same rapid process of denudation; the hardwood is being burned to make way for the plough, and the pine is fast disappearing under the axe for the insatiable sawmill. The Valley of the Ottawa, the only pine region we have worth giving a moment's consideration to, will have its resources exhausted in a single decade." And so Mr. Little goes on to show that the supplies along the St. Lawrence to the Gulf, the St. Maurice, in the Eastern Townships, Nova Scotia and New Brunswick, have all been "run over" and ransacked, both for local consumption and foreign demand. Not alone do these remarks apply to pine, but to spruce and other available woods, and our informant adds that "in five years neither pine timber or spruce deals, except it may the best clear pine, which is indispensable for many purposes to the people in Great Britain, and for which they will have to pay excessive prices, will be shipped from the port of Quebec. In five years I look for lumber to be shipped from the Ottawa to supply Michigan and the Prairie States of the West, and in a dozen years from now the commercial woods of the United States and Canada will have totally vanished, and instead of our running abroad to find markets on which to force and sacrifice the products of our forests, we shall have to search for supplies for our home consumption."

Canadian Fruit at the Centennial.

THE REPORTS TO CENTENNIAL COMMISSION.

The first report says:—

The Fruit Growers' Society of Ontario made a remarkably fine exhibit, chiefly of currants and gooseberries. Of gooseberries there were forty-five plates, thirty-one of currants, five kinds of cherries and one of Indian cherry (*Amelanchier botryopinm*). The gooseberries were largely of the European race, showing how well, in comparison with the United States, Canada is suited to this class. There were, however, many dishes of American varieties, notably Houghton, Downing and American Cluster, and those rather larger than are usually grown on the continent of America. Among those were some plates of the original American gooseberry (*Ribes rotundifolia*), showing how surprisingly the American sort has been improved. The currants were above the average of American grown currents in size, the black varieties especially. One plate had berries three-quarters of an inch in diameter. The raspberries had all spoiled by their long journey, except one plate of Arnold's Seedling No. 7, and this was somewhat decayed. So far as we could judge, we incline to regard it as a variety of high promise. It is represented to have been, in the first place, a cross between the common White Cap and some red variety, and this again crossed with the Hornet, giving this seedling as the result. We wish to make honorable mention of this superior collection.

W. L. SCHAFFER, | JOSIAH HOOPES,
A. W. HARRISON, | THOS. MEEHAN,
Judges of Special Pomological Products.

A later report says:—During the past week the Fruit Growers' Society of Ontario have added to their already admirable collection 14 plates of raspberries, 37 of currants, 15 of gooseberries, 14 of cherries, and 4 of apples. The whole is by far the best exhibit of small fruits made so far, and, when the superior quality of many of the products is considered, deserves the highest commendation.

Pruning Fruit Trees.

When is the best time to prune fruit trees? This is a question very often asked, and the answer given is, "Prune when the knife and saw are sharp." We would answer: Never prune unless the tools are sharp, and never use the saw unless to remove an old orchard, the time for pruning depending upon the object which we wish to accomplish.

Pruning may be done for three purposes: First, and the most important, to give the tree a good form; second, to increase growth; third, to increase fruitfulness.

Take the young tree from the nursery where it has been drawn up by close planting, so that the branches are several feet from the ground. With trees well grown we have several branches starting from nearly the same height. Now, at transplanting, we should remove a portion of the buds to restore the balance between the top and mutilated roots. Much can be done at this time to give the tree a good from, by cutting out those branches which, if allowed to grow, would give the tree an imperfect shape. This must be followed up with pinching out the terminal bud of those shoots that tend to outgrow their neighbors to the injury of the symmetry of the tree. With proper care at planting, and the free use of the thumb and forefinger during the growing season, very little use for the saw will be found. Had this been the treatment of most of our large orchards, they might now be in a healthy condition and giving large crops of fruit.

It is doubtful if we can improve upon nature's method in this matter. A tree growing out in the open field, fully exposed to the sunlight and air, naturally takes a fine form, and if in good soil, grows vigorously and bears abundantly. Most of our orchards are planted too close in the first place; then to let in the sunlight and air, large branches are cut out from the centre, and the wounds made, left exposed, decay in a few years. This practice of cutting out the central branches to let in the light is all wrong. Branches grow best in the centre of the tree, because here they find the most congenial shelter from the sun's rays. Cut away the branches, with their foliage which shelters these roots, and they cease to grow, and the long, bare branches exposed to the scorching sun during the summer, and continued freezing and thawing in winter, become much injured. If the time now expended in the annual pruning were devoted to the care and cultivation of the soil, our orchards would be much more productive and healthy.

Pruning while the trees are in a dormant state has the tendancy to increase growth. Trees often make a stunted growth from the improper manner of planting, from allowing grass to grow about their roots or overbearing. Now, if one-half of the buds be removed, those remaining will be better supplied with plant food from the roots which remain perfect, new roots formed from the new wood and vigor imparted to the tree.

If cutting must be done, let it be at the ends of the branches rather than from the centre of the tree. What matters it if a few branches do cross one another and even rub together, they will not be injured, and the end shoots will certainly take their proper place in giving good form to the tree.

Pruning may also be done to produce fruitfulness by checking the growth of the tree. Trees are sometimes planted in very rich soil, where they grow vigorously, but bear no fruit.

It is one of the laws of plant growth, that anything which injures the plant or checks its growth, will cause it to make an effort to perpetuate its kind by the production of seed. Now, if a portion of the foliage be removed, the perfect development of all parts of the plant depending upon the foliage, its growth will be checked and fruitfulness be produced. But while there may be some instances where the soil is so rich as to cause the tree to run to wood and produce no fruit. there are many more where some element of the food required for the production of fruit is not found in the soil, and summer pruning would do no good. The better way would be to check the growth by cropping the land and adding potash or phosphoric acid. Root pruning would also check the overproduction of wood.

Then we would say in closing, prune when the trees are young, use the knife and thumb and finger only to give the tree a good form, and devote the time usually given to this work to the cultivation of the soil. If we must cut away branches, let it be done late in the winter or very early in the spring, as the wounds heal over more readily at this season than at any other. All wounds must be covered with shellac, wax or common paint. Use the saw, if necessary, to renovate old orchards, but depend largely upon the cultivation and improvement of the soil for increased growth and fruitfulness.—*Rural World.*

Cider.

A New York journal in the following article on cider offers to agricultural societies a good practical suggestion, applicable to Canada as well as to those for whom it was written:—

There never has been sufficient attention given to the manufacture and preservation of the juice of the apple. Individual instances there are which might be hunted up showing how good, pure cider has been made and,preserved for a length of time. But those instances are few and not known to the mass of farmers who have orchards and actually make a few barrels of cider. The manufacture of cider and how to preserve it so as to be an acceptable beverage, should become one of the industries of the country. Our American cider, when carefully made, is a beverage far preferable to the red and white wines of France and Germany, From time to time our agricultural journals have given instructions and related individual experimeants in cider making, and these have often been copied in the country press; some of which were good, and much ought never to have received the dignity of printed matter. The American Institute, State fairs and county fairs might well offer premiums covering the subject. As most fairs are usually held in the month of September, or early October, and before cider making begins with the farmers, the consideration of the question as to how cider is best preserved would hardly be discussed over cider but a few days or weeks old. Those agricultural societies which hold Winter meets could test cider made the previous Fall, and all agricultural societies at their annual Fall meetings can offer premiums for cider one year old. We can foresee the possibility how certain makers of a bogus stuff sold over bars for cider might try for an indorsement of their compounds by entering into competitions for premiums offered by the average managers of our county fairs. But our State Agricultural Society and the American Institute would not be likely to suffer from imposition. They have the means, as we suppose, to make the proper chemical tests. If a tolerably sure method for preserving cider one year or two years in casks, and at a trifling cost, could be discovered, the demand would be greatly increased, and with a corresponding profit to the owner of apple orchards.—*Schohalie (N. Y.) Republican.*

Grow More Currants.

We have often alluded to the healthfulness of the currant, and urged its more extensive and careful cultivation. Almost every farm house, to be sure, has a few old bushes, but they are as a general rule neglected and far less productive than they ought to be, and the fruit is smaller than it would be under good cultivation. During the sultry days of August, when the appetite fails for the ordinary articles of food, the currant, with its peculiar acid, toned down by a little sugar, becomes very agreeable to the palate. It is valuable because it can be used in so many ways, and it lasts so long on the bushes. No fruit will give better returns for the labor bestowed on its cultivation. A plantation once properly made is good for ten or fifteen years, and we have known bushes to bear well for more than twenty years. New plants can be raised so easily from cuttings that it would be better to reset the ground, or rather select a new field on which to plant them, as often as once in ten years. The old Red Dutch has always been a favorite sort, but of late years La Versaillaise, Cherry, Fertile of Angers and some others have taken the lead among the red varieties, while the Dana's Transparent and White Grape are regarded as the most valuable among the white sorts. The Cherry is one of the large sorts, too acid for most palates, but if perfectly ripe it will go well with plenty of sugar. It is very easily picked.—*Mass. Plowman.*

The Currant Worm.

Of late the usual number of inquiries have appeared in the papers asking for a remedy for this pest. The prescription more frequently recommended is powdered hellebore. This is affective, but too costly for those who have many bushes.

After trying many remedies we have settled down to the application of a decoction of the common Indian poke root. This is as effective as hellebore, and costs much less money, an item of some importance these hard times.

How weak a solution will kill the pests we don't know, still, if they are taken in hand when very small, and an application of the decoction made weekly, a bushel of the mashed roots will be sufficient to make seventy-five pails of the solution. After the worms attain a larger growth, a stronger solution will be necessary. This should be applied on a dry day; the decoction then dries on the leaves and remains a standing preventive for several days unless rain falls.

The Story.

A Proud Wife.

A STORY IN TWO PARTS—PART THE FIRST.

THE YOUNG COUPLE.

We were scarcely more than boy and girl when Gilbert and I made up our minds to be married. Friends laughed at us after the usual fashion—a few condescended to advise us, I remember—but we thought that we knew our own minds better than they did who sought to influence us, and we became man and wife. We were not children, though we had begun life early. Gilbert was alone in the world, and I had only a mother to study, whose wishes went with my own, and who relied too much on my judgment.

Gilbert and I were what the world called a clever couple. We commenced life with fair prospects ahead, and I thought that we should both have the patience to wait for fortune, and courage to strive through the usual difficulties to obtain it. Gilbert was only one-and-twenty when he married me, and I was seventeen; but he was strong, self-reliant and energetic I believed, and I felt that his perseverance would make him his name in good time. He was neither weak nor vain. He saw the struggle with the crowd before the race was won, and he asked me very gravely whether I could be content for years with a modest income and a little house, knowing that contentment would ever be with him, and not with his surroundings. He had chosen engineering for his profession. He had genius; he had passed his examination with that high honor which I was assured he would do; and before he was three-and-twenty years of age he had obtained a post of importance that was likely to lead to something great one day. Gilbert's income was not large at first. He was to work up to greatness by degrees, and there was a small addition of seventy-five pounds a year on my side to back us in our first start together.

I had begun to write for the magazines, following at a distance in the footsteps of a father who had killed himself by editor's work it was said, and in my way earned a few pounds occasionally, almost against my husband's wishes. He would grow eloquent at times on the folly of my aspirations, demonstrate to me plainly enough how impossible it was that I could ever be more than a literary drudge, an "outsider" as he termed it, and how it militated against his dignity, and lowered himself as "lord and master," to see me working with himself for home.

Had we been blessed with children, I might have reasoned with him in those dark days of which I treat—those days of early struggles toge her, at which I look back longingly, and see how happy they were—but I knew how proud a man he was; and as he advanced slowly in his profession, so I drew him back from mine—if I could ever call it mine—and let him work for both of us.

Yes, they were happy struggles after all. Our little household embarrassments were also pleasant jesting when our hearts were young, and our friends were of our own seeking. We made no profession of being better off than we were; the few to whom we were well known understood our position, and believed in our advancement. We were ambitious, perhaps, but we kept our ambition to ourselves. I was the happier of the two possibly, for I was more easily contented, and I loved him better, I think that still, for all my great mistake. Had we remained poor all our lives, I should not have experienced one regret at linking myself with Gilbert Graham, unless his looks or words had been significant of his own disappointment. I say that now as fearlessly as I said it to him long ago, when were rising in the world.

It was when we were beginning to rise that we encountered the first shadow, and this is how it came about:—

Gilbert, before he was four-and-twenty, had attracted the attention of the scientific public to a new theory of his own as regarded the construction of railway-bridges—a theory that drew attention to his name, and gained him some reputation amongst those whom in his career it nas necessary to study.

We rose from that period. Gilbert's fame extended; men well known in the profession sought him out; old friends reappeared, and fresh friends started up—or rather those acquaintances whom society calls friends. Let me mention one man in particular as the unwitting cause of my trouble—a man who meant well in his way, and who, after a fashion, liked and even respected my husband; but who, before I had cause for one reproach, cost me many a heart pang. Young wives will understand me, though only a few men will see fair reason for my first grief, when I say that he was my husband's friend more than he was mine. He sought Gilbert out, and—here is the secret—he took him away too much from home. He had been a schoolfellow of my husband's; he had risen in the world very rapidly, and was a rich man at six-and-twenty—rich, not by his own exertions, but by those of his uncle, who had died rich, and bequeathed to him the savings of long years. When Charles Ewell was a poor young man, I liked him better; it was his sudden wealth that seemed to set me against him, even before he stepped between Gilbert and me. It was not envy at his sudden rise that disturbed me, for no one congratulated him more from the heart than Gilbert and I; it was his new manners, which Gilbert did not see, or would not see, but which I was certain he had assumed with the greater dignity which his higher position had entailed upon him. Society knows these men—these youths who have not been born rich, but have had riches thrust upon them—and not like them much, for all the court it pays them. Wealth had not spoilt Charles Ewell more than it would have spoiled most men; it had altered his character, and given a new turn to his thoughts, and it had rendered him very objectionable to me. It has always been a mystery to me that Gilbert was in this matter less clear-sighted than myself; that with all his shrewdness and his genius he was so easily blinded by the showy manners of his friend. He was the last man to be affected by them in any way prejudicial to his interest, but they changed him for all that, and they sowed the seeds of discontent within him.

Charles Ewell married very well in the new sphere to which he had been raised and we hired a brougham for the occasion, and went to his wedding, where his friends turned up their eyes at our horses, and laughed at our hack conveyance; as well they might, perhaps, for there was a great deal to laugh at, and we had had some fun out of it ourselves driving to Hanover Square. We went, also, to Mr. Ewell's grand home in May Fair, in due course, to stately dinners and still more stately balls, where the ladies looked disparagingly at my toilette, and Charles Ewell informed my husband what everything had cost in the room—what he had given for his pictures, what he was going to give for his new carriage. It was this parvenu habit, this common trait of the upstart, which irritated me most, because it impressed my husband a great deal, although he was not slow to smile at this restless vanity of his friend.

"I hope, Gilbert, your friend's grandeur will not set you against our little home," I said to him one night when we were returning in a cab from one of Charles Ewell's dinner parties.

He had been looking very thoughtfully over my head until my voice aroused him, then he started and laughed pleasantly.

"Oh, no, Ellen. His grandeur will not disturb my philosophy, though I would not mind changing houses with him."

"And wives?"

"No. I would take my wife to the big house, and she should shed more gladness around me there."

"Is there not gladness enough in the old home," I asked somewhat anxiously.

"To be sure there is. I am not envious—I am the last man to covet my neighbour's goods," he said lightly, "or to wish that little Charley's luck had fallen to my share. He is a good fellow, who deserves to succeed in the world. How welcome he made us, Ellen.

"Yes, very welcome, certainly."

"I think that he paid us more court than he did the rest of his guests."

"Yes, he seemed anxious to show that our position in life made no difference to him,"

"Ah! you speak satirically, Nell," he said. "You don't like Charles; and it is his grand home that seems to cast a shadow upon yours. You must not wish that we were better off yet awhile—presently we shall spread our wings, girl, and have a soul above our shabby little crib in the Wandsworth Road; and if we never have quite so many silver spoons and forks as Charley Ewell, still we will drop the electro-plate, and soar upwards."

This was only turning my weapons against myself, and I could only smile at him, till the satire that the couched in his last words more forcibly suggested the new truth.

"I don't despise wealth, Nell," he continued, to my surprise, beginning again in his old soothing manner towards me, and ending with the old bitterness towards a something or other that was not apparent. "I hope to grow rich in good time; to have as good a house and keep as good a table as half those people whom we have met to-night, and whose only claim at Charley's place was the money that they had made in the city. By Jove! there was not an intellectual man or woman amongst them—they were a well-off lot, that's all. When my turn comes, see what friends I will have; the worst of it is, it can't come very soon."

I fancied that he sighed then; that it was his first sigh of regret at the position he occupied. We spoke of our own future the rest of the way home, and forgot Charles Ewell's rise to fortune. We spoke of our patience to wait, and courage to fight the battle of life, with an undivided love to keep us strong; and when our small maid-servant opened the door, we contrasted her with Charles Ewell's plush-clad lackey, and had one jest at the odious com arison.

But this was, after all, the beginning of trouble. I date still all restless discontent, all cruel mistakes and misconceptions, from that night when the first sign was made that he was dissatisfied with the progress he had made in life, despite all the success he had achieved. He did not appear to have that confidence in his own genius which carries a man so forward into his future that he mentally rises above his present obscurity; and there ensued periods of re-action, when he fancied that he was going back in the race, and that fame and honour were never to come to his side. We had our cares when he had become known to the profession as a man of no common order of intellect. Fame comes before money, as a rule, and I have said that Gilbert made many friends. Gilbert's income might have been three hundred a year, not more, when we were still a young couple, and had changed, for the sake of position, into a larger house further west. Here we entertained, in a humble way at first, those friends who we thought valued us more for ourselves than for the entertainment we could afford them; or those friends, again, whom Gilbert asserted it was necessary to keep up with, even at a loss to ourselves, which was a theory I never wholly understood. And we did not save money; indeed, had a hard struggle at times not to fall back into debt.

This was a greater struggle than Gilbert ever knew: for I concealed from him in every way that I could all the petty household cares which rose to the surface occasionally. I knew how much they would have disturbed him from his studies, and vexed him for days afterwards; and I did my best with our income, gratified by the knowledge that he was generally ignorant that at any period of a past week there had been a sharp corner to turn. Men, I suppose, never give us credit for all the efforts we make to keep down the housekeeping expenses. They are engrossed with their business, and believe that there is no trouble in paying a few tradesmen's bills. Now and then there was a little contretemps to face, and an extra demand to make upon his purse; and then Gilbert would do his best with me to stem the tide, and would decline invitations, and work hard at home until our heads rose above water once more. Once I fell ill—at an inopportune period, when I should have been at my strongest and best—and there were nurses to hire, and a physician to consult. I recovered to find that all things had fallen into arrear, and that there were formidable bills to confront. Still we lived down difficulties, worked hard, and were after all tolerably happy in our way. There were only a few up-hill years to surmount, I told him, and then we could smile at our past trials, and that happiness we had ever found in their midst, cheered by the love that had never grown less between us. He would grow eloquent in his turn then, paint his future as I had never dared to paint it for him, speak of me as his best adviser and truest friend, until Charles Ewell, or men like him, whom I need not introduce here, confronted him once more.

It was at my own house that the greatest blow fell at last. Mr. Ewell and his wife were there, and a few friends had been summoned to meet them. Gilbert had been inclined at first to extravagance in his ideas for our party, and I had had to combat his high notions, and to remind him that we were not yet rich enough to launch forth. It had been a successful little party in its way, though we had dispensed with a French cook and the highest-priced wines. I was a young wife, and proud of my home and my husband, and it vexed me to know that Gilbert would half apologise to his friend Ewell for his small establishment and the general appurtances around him, whenever this grand young man favored us with his company. On that night I detested him. I was a woman, not a heroine, and words that he uttered, and that I heard by chance, set my heart against him for ever.

"You don't come to see me, Charley, for my splendid dinner or my old brands," Gilbert was saying as I passed him, "but for the sake of that old friendship which dates from the school-form."

"And for the sake of that friend's genius, which is so surely working its way, Gilbert—which we all see and respect," was the courteous answer enough.

Then my husband's saturnine mood asserted itself, and I could see his face shadow and his brow contract as he confessed to his friend all the opposition that was still in his way, just as he had confessed to me many times before, and been reasoned out of by my brighter prophecies. When I returned five minutes afterward, Gilbert had just concluded his long catalogue of the difficulties in the way of a man rising to independence in that profession which he had chosen for himself. Charles Ewell's reply I heard and never forgave.

"Ah! but you don't think, Gilbert," he said, "how you have risen in comparison with the nine hundred and ninety-nine men of your own age and profession. Risen in the face of every obstacle, with a house to keep up, and a wife to support, at an age when no man in your position, as a rule, thinks of taking such expenses on himself."

Gilbert should have spoken warmly here, for indirectly it had been implied that I was the barrier in the way of his advancement.

"Yes, I married early enough, Charley, but—I don't regret it," he added, after a pause, as though most men in his circumstances would have done so.

"As a single man, your income would have been ample for your wants," Ewell continued. "You could have travelled, and thus have benefited by the experience of all lands, instead of clinging to your own insular prejudices, and at thirty-five you might have chosen your wife from the first families in the land."

"I should have chosen Ellen," he said laughingly, and as I stole away I said Heaven bless him for that answer.

I was wretched for the remainder of the time Gilbert and Charles Ewell sat together. I could think only of my husband, and see on his gloomy brow, as I watched him from the distance, the shadow of the dangerous thoughts his friend had placed there. They sat and talked together in a low tone, forgetful of the company around them, and my nervous fancies, if they were merely nervous fancies, suggested that Gilbert's face grew darker every instant, and that he nodded his head more than once to the insidious reasoning of his friend.

Later in the night, when our guests had gone, and we were alone together, the gloom still lingered on my husband's face, and no effort of my own could dissipate it.

'Has anything occurred, Gilbert, to annoy you this evening?" I asked.

"Nothing, Nell; it has been a very pleasant evening."

"I thought Charles Ewell might have said something to vex you," I said quietly.

"He is too good a fellow for that. What a pity it is, Nell, that you do not like him much. No man would do more to help me rise in the world than he."

"Or to render you discontented with the present, from which you would escape."

Then I told him of the chance words that I had heard, and of the mortification that I had experienced in hearing them, till I broke down, like the sensitive woman that I was then. His arms were around me, and he drew me to his side to reason with me—to assure me that he was not dissatisfied with his success in life; on the contrary, very grateful for it, and that he was content to wait with me patiently for the better fortunes that he thought were on their way to us.

"Yes, but he spoke of your early marriage as a mistake," I said pertinaciously; "of me as a clog upon your industry and is to hang around your neck for many years, and be always a something that you must drag upwards with yourself.

"No, he did not speak so forcibly as that, Nell," he answered. "You never do Charley justice—you never will. If he said that it would be easier to for me to have saved money as I single man than as a Benedict, why, there was no great harm, and a little truth in the assertion."

"Yes, and that assertion implied the hindrance that I had been to you. Oh, Gilbert! and you think that too—you see that without me you might have been a richer man, and nearer the mark at which you aim."

"What does it matter? I am satisfied, Ellen. I have nothing to regret. I have been lucky in my profession, and in the wife who supports me in my efforts."

So we became reconciled to the present again, and I believed all that he had told me for a few days—a few weeks, until a new change came over him, which I did not comprehend, and yet which I could but guess was connected with myself.

There was the heavy lock upon his face that I had seen on the night Charles Ewell dined with us, and spoke of me as Gilbert's dead weight, and I connected it truly enough with the man who called himself my husband's friend. It was in taxing Gilbert with the change in him that the truth escaped.

"You have seen Mr. Ewell lately, Gilbert," I said.

"Yes; how did you know that?"

"I fancied that you must have met him, for, forgive me for the thought, I fancy that you are never your old self afterwards."

"It is an ungenerous thought, Ellen."

"He has spoken of me again. Perhaps he has——"

"Pardon me, but he has not mentioned your name," said Gilbert quickly. "See how you leap to conclusions that are unworthy of you, in your new and strange dislike to him. He has offered me, Ellen, a post abroad."

"Indeed, and you——"

(To be Continued.)

Minnie May's Department.

Two Pictures.

An old farm house with meadows wide,
And sweet with clover on each side;
A bright-eyed boy who looks from out
The door with woodbine wreathed about,
And wishes his one thought all day:
"Oh! if I could but fly away
From this dull spot the world to see,
How happy, happy, happy,
How happy I would be!"

Amid the city's constant din
A man who round the world had been
Is thinking, thinking all day long:
"Oh! if I could only trace once more
The field-path to the farm-house door,
The old green meadows could I see,
How happy, happy, happy,
How happy I would be!"

My dear Nieces,—It affords me much pleasure to receive so many nice letters this month, and I am happy to know my labors are so well appreciated. I thank you all for the many recipes you have sent me, which I know will be useful to some of our readers. Our Niece, Mrs. P——, has favored us with her recipe for making elderberry wine, which she thinks is preferable to the one inserted in our last issue; however, you may have your choice, there is no test like trying, and experience is the best teacher. Minnie May.

My Dear Nieces,—No doubt many of you have a taste for decorating your homes with the elegancies which can be made from our grasses, mosses, ferns and leaves; such as boquets, wreaths, picture frames, brackets, etc. All these can be made with very little expense, excluding your own labor and time. Of course it requires patience, but I think the most of you have a good amount of patience, particularly in the nice autumn weather, and in the long evenings it is so pleasant to work at something which looks pretty. Perhaps some of you who have experimented in pressing and preserving autumn leaves by means of varnishing, ironing, etc., are aware of your work proving unsatisfactory, from the fact of their changing color, becoming spotted, curling at edges, etc. I find old books the best as a receptacle for drying. It is a good plan, as soon as the trees begin to change their livery in the autumn, to begin making collections of all the various colors and shades of color, as the leaves gathered early retain their color the longest. Commence placing the leaves at the back part of the book, laying each one smoothly and never allowing them to touch each other, turn five or six pages upon these and place another layer, continuing this until the book is full, then place in a cool place to dry under a heavy pressure for twenty-four hours. Remove them the following day into dry books and again place under pressure. This change is made three times, allowing them to remain several days the last time, when they will be found in beautiful condition and ready to arrange.

The best time to gather ferns for winter use is September and October, as then the frost turns them white, and you can get them from deepest green to almost white, and they add so much to winter decoration. Also collect all kinds of wild grasses, of which you will find a great variety, and quantities of autumn berries. A person of taste can think of many ways to arrange these bright treasures of autumn. Minnie May.

Dear Minnie May,—I take much pleasure in writing you a few lines. The reason of my long silence is owing to being away on a visit some distance from home. I was much pleased with H. J. Warren's recipes for making blanc mange, and floating island. Will enclose my recipe for making an easy dessert, and for preparing quinces.

I remain, your niece, J. D. Hughes.

DELICATE DESSERT.

Lay a dozen crackers in a tureen; pour on enough boiling water to cover them. In a few moments they will be swoolen to three or four times their original size. Then grate a little nutmeg and sprinkle some white sugar on them. Eat with cream, and you will have a simple and and delicious dessert.

QUINCES FOR THE TEA-TABLE.

Bake ripe quinces thoroughly; when cold strip off the skins; place them in a glass dish, and sprinkle with white sugar, and serve with cream. They make a fine-looking dish for the tea-table, and a more luscious and unexpensive one than the fruit made into sweetmeats.

Dear Minnie May,—I send you a recipe for dying ladies' gloves, ribbons, silks or cottons. It will dye from a pale straw to a deep orange color. The sun will not fade, nor boiling move it:

Boil two quarts of rain water; dissolve in it a piece of alum the size of a hickory nut. While hot, steep in it one or more leaves of horseraddish, according to the depth of color required. Rinse the article dyed in rain water and dry.

Mrs. W. Brougton.

CLEAN A CARPET.

Shake and beat it well; lay it on the floor and tack it firmly; then, with a clean flannel, wash it over with one quart of bullock's gall mixed with three quarts of soft cold water, and rub it off with a clean flannel or house cloth. Any particularly dirty spot should be rubbed with pure gall.

House Girl.

STEAMED PUDDING.

Three eggs; one teacup sweet milk; a pinch of salt; one teaspoonful cream tartar; one-half ditto soda; a little sugar, if preferred; one cup of fruit of any kind, and flour to make a stiff batter. Steam one hour, and eat with cream and sugar. Very nice; try it. H. C. Abbott.

OFFENSIVE BREATH.

Take from six to ten drops of the concentrated solution of chloride of soda in a wineglassful of pure spring water. Taken immediately after the ablutions of the morning are completed will sweeten the breath by disinfecting the stomach, which, far from being injured, will be benefited by the medicine. In some cases the odour from carious teeth is combined with that of the stomach. If the mouth is well rinsed with a teaspoonful of the solution of alum in a tumbler of water, the bad odor of the teeth will be removed. Mrs. J. P.

ELDERBERRY WINE.

1 gallon of elderberries, and 1 gallon of water. Put them in a copper cold; let them boil one hour; then strain through a seive; press the berries, and to 9 gallons of liquor add 28 pounds of Lisbon sugar, one-quarter of a pound of ginger, one-quarter pound of allspice, one-quarter pound of cloves; then put them in a clean copper; let them boil one-half hour; then strain it again and set it to work in a tub while warm. One-half tablespoonful of good yeast is enough for this quantity. Put in a cask when done working. Mrs. J. P.

ACID UPON CLOTHING.

When acid his been dropped on any article of clothing, apply liquid ammonia to kill the acid: then apply chloriform to restore the color.

LEMON CHEESE CAKES.

Pare two lemons very thin and put the rind to soak in half a pint of water; put into an enamelled sauce-pan one pound loaf sugar, six ounces butter, six eggs, a little beaten, and the water in which the rind soaked; keep this mixture well stirred untill it becomes as thick as honey; pour into a jar, and it will keep for weeks. Line dishes with puff paste and bake. Claire.

MARLBOROUGH PUDDING.

Beat one-quarter of a pound of butter to a cream; add a quarter of a pound of white sugar; beat well four eggs and add to the rest; mix well together; line a dish with puff paste, spread over it a layer of raspberry jam; then pour in the mixture, and bake nearly three quarters of an hour. This pudding is to be eaten cold. Claire.

HANDKERCHIEF FLIRTATIONS.

Drawing across lips—desire of acquaintance.
Drawing across eyes—I am sorry.
Drawing across cheek—I love you.
Drawing across forehead—we are watched.
Taking it by centre—you are too willing.
Twirling in both hands—Indifference.
Twirling in the right hand—I love another.
Twirling in the left hand—I wish to get rid of you.
Drawing it over the shoulder—follow me.
Folding it—I wish to speak to you.
Dropping it—we are friends.
Letting it rest on the right cheek—yes.
Letting it rest on the left cheek—no.
Holding over the right ear—you are changed.
Letting it remain on the eyes—you are cruel.
Winding it on the fourth finger—engaged.
Winding it on the third finger—I am.
Opposite corners in both hands—wait for me.

Uncle Tom's Department.

Dear Uncle Tom,—I am going to tell you about a very pleasant evening I spent a short time ago. It was in the country. The school teacher was about leaving and his pupils presented him with a beautiful writing desk. The pupils and their parents all assembled together at the school house, which was beautifully decorated with flowers and bushes. B. W. Crawford was nominated Chairman, then the pupils, with their teacher, were called up on the platform, then one little girl, Maggie Muterer, read the address, and another, Jessie Gerrie, presented the writing desk, for which their teacher thanked them very kindly. After that there was a general rush for the good things provided, which they had in abundance. I fancy, Uncle Tom, you would have liked to have been there about this time. As soon as all were satisfied, two of the pupils went upon the platform and read the address, which was in poetry and was very nice; they each had a wreath of flowers on their head. Professor Johnson then sang some very nice pieces, assisted by the pupils of the school; he is also a ventriloquist, and amused us very much for awhile; then we had several speeches by some of the gentlemen that were present. It was getting very late by this time, so the pupils bid their teacher farewell and all dispersed to their homes feeling that they had spent a very enjoyable evening.

I am ever your affectionate niece,
Hattie Haviland.

Some of our nephews and nieces might aid the circulation of the Advocate and make more money than in any other way if they only have the ability and perseverance to take an agency. For particulars, address W. Weld, Farmer's Advocate Office. Apply before the territory is taken.

103.—CROSS WORD ENIGMA.

My first is in captain, but not in mate;
My second in love, but not in hate;
My third in rain, but not in hail;
My fourth in mast, but not in sail;
My fifth in wet, but not in dry;
My sixth in June, but not in July;
My seventh in seat, but not in chair;
My eighth in storm, but not in fair;
My ninth in wheat, but not in hay;
My tenth in rent, but not in pay.;
My eleventh in flat, but not in round;
My whole but few have found.
—Edith H. C.

104.—¼ of mock, ¼ of lock,
And then ⅛ of row,
¼ of zinc, ¼ of rink,
An article will show.
—A. J. I.

105.—DIAMOND PUZZLE.

My first is a consonant,
My second is an adjective,
My third is a boy's name,
My fourth is a precious stone,
My fifth is a foolish person,
My sixth is a person's name,
My seventh is trusting,
My eighth is what many young ladies wish,
My ninth is a kind of grain,
My tenth is good to eat,
My eleventh is a consonant.
—G. G. Enigh.

106.—DOUBLE ACROSTIC.

A shrub, a woman's name, a kind of play, unfinished, a Spanish coin, a musical instrument, a man's name, a prognostick. The initials name a great battle and the finals one of the commanders.
J. M. Frazer.

107.—ENIGMA NUMERICAL.

I am composed of twenty-four letters.
My 10, 7, 2, 3, 13, 22, 16, 20 is a city.
My 23, 4, 17, 3 is a town in Canada.
My 1, 11, 24, 10, 12, 22 is a village in Ontario.
My 11, 9, 15, 5, 16 is a river.
My 8, 19, 13, 2 is a kind of grain.
My 15, 18, 6, 14, 21, 12 is a pendent.
My whole is a popular Canadian Institution.
—E. E.

108.—DECAPITATIONS.

Complete, I am one suddenly raised to wealth, honor, etc.; twice beheaded, and I am a motion of terror; once more, and I am what little boys and girls like.

109.—Whole, in me a disunion you'll see;
Twice behead, a similitude then I shall be;
Behead me again, round a nice country village

You'll then see me lay, just ready for tillage ;
Twice more behead, you'll then see at length
That I clearly denote to be of some strength ;
Now transpose me, and then you will quickly find
My end was the first of my sort in mankind.
—PUZZLE BOY.

110.—Whole, I am a purchaser; behead, and I am a wanderer ; behead again, and I am on the other side ; transpose my remainder, and I indicate a minister of the Gospel. —J. E. L.

111.—ENIGMA.

What every man prefers to life,
Fears more than death or deadly strife,
What the contented man deserves,
The poor man has, the rich require,
The miser spends, the spendthrift saves,
And all men carry to the garve.
—NORA.

112.—When my mood is soft I go through the land,
And the leaves by me are gently fanned ;
I waft the scent of the flowers around,
Till the perfume seems to rise from the ground.
The sailor sings gaily the li-elong day,
As I send the bark on her homeward way ;
With studding-sails set she glides o'er the foam,
Each moment I am bringing her nearer his home;
And his heart is light, for he's getting near.
To all on earth he holds most dear.
But I am changed : Ther'e a darkening cloud on high,
And from it a spirit of evil I fly ;
I stir up the waves, and laugh with glee
As the ship goes down in the depths of the sea ;
Then I rush to the land, and the beautiful flowers
Are things of the past like the vanished hours ;
I tear up the trees and where I go
I carry nought but destruction and woe ;
These softening down, a dirge I roam
As I wander around the sailor's home ;
And the watchers within grow pale with fear
As my wild, mournful cadence they chance to hear,
Till soon with remorse I burst forth amain
And turn to my work of destruction again.
—EDMUND.

113.—GEOGRAPHICAL PUZZLE.

114.—ANAGRAMS.

Names of flowers.
1. Waste them, Willie.
2. Eat coal, Charlie.
3. Catherine's hat.
4. The King's a victor.
5. Cannot hear it.
6. Ha ! love till ye fly.

Answers to August Puzzles.

89—Constancy 90—Lighthouse.

91.—Away, away, your flattering arts
May now betray some simpler hearts,
And you will smile at their believing,
And they shall weep at your deceiving.

92—Topertown. 93—A bird in the hand is worth two in the bush. 94—Matrimoney. 95—An unsullied reputation.

96—Of all the papers that go the rounds,
The FARMER'S ADVOCATE them crowns,
For farmers, house-keepers, children and all,
When they get it they never think
Of scolding, drinking tea or playing ball.

97— C
CAP
CAPOT
CAPTAIN
PEACH
SIS
N

98—Croquet. 99—Pen-man-ship. 100—Ingersoll. 101—Salem, Troy, Erie, Endor.

102— 1, Chaste, haste, seat,
2, Wheat, heat, eat,
3, Skate, Kate, ate.

Names of Those Who Have Sent In Correct Answers to August Puzzles.

E. Elliott, Edward A. Binker, Pasty Bolivar, A. J. Taylor, James H. Cross, J. E. Lovekin, Eliza Shier, W. Broughton, M. Rankin, Edith H. Cutlin, Eleanor West, M. Winbiler, J. Shore, G. McKenzie, S. J. Hall, M. Davie, J. Winlow, Isaac Billington, John Bell, W. J. Brown, Andrew Spenser, Stephen Smythe, J. Dart, Henry Smyington, J. M. Taylor, G. E. Enigh, Janet Hartley, Sarah J. Sharpe, James McMak, Robt. Wilson, Isaac Lawarence, A. Hall, Thos. Reynolds, S. Scott, Mrs. McC, Minnie Clash, Jessie Dawson, Jane Winland.

Our Young Friends at the Centennial.

DEAR UNCLE TOM,—The pleasure evinced by you in hearing of the "doings" of your nephews and neices prompts this epistle. The subject of it is, "A three weeks' visit to the Centennial and seaside."

I left Toronto at 2 p.m., by boat, for Lewiston, situated on the Niagara River, six miles from Lake Ontario, passing on our route old Niagara Fort, and Brock's Monument, on Queenston Heights; thence from Lewiston to Suspension Bridge by rail. The track runs close to the river, in some places within two feet of it. The bank is almost perpendicular, and about 40 feet below the wild, impetuous water is rushing along. The scene was too much for our timid passengers, who speedily moved from the river side of the car; indeed, it tested the nerves of some of the strongest. At Suspension Bridge I procured a return ticket to New York, costing $9 in greenbacks. About Niagara Falls I will keep silent; every Canadian has seen them, or should have ere this. We reached Buffalo at 6 p.m., and left at 7.30, taking a sleeping berth to New York. Passengers should arrange their tour so as to leave Buffalo at night; then they have daylight for the finest scenery on the route. What kind of country we passed through till we reached Susquehanna, I'll never tell you, for sleep made me unconscious of the landscape we were passing through. From Susquehanna till near New York the scenery was grand. Its diversity, picturesqueness, and beauty eclipses anything I ever saw. Every short distance something new presents itself, and the eyes enjoy a continuous feast of natural scenery. The country is very mountainous; the tops of some of them cannot be seen from the car window, resembling I presume, somewhat the Highlands of Scotland. Looking out of the end window of the train, it would surprise you to see the sharp curves the railroad makes. For miles it follows the Delaware River, and one could scarcely conceive it possible to run a train safely over such a winding track. Jersey City was reached at noon. I then crossed the Hudson to New York, and spent several hours in it, promenading "down Broadway," up to some of the parks, and "bobbing round" the city. This is certainly *the* American Metropolis. The traffic on the streets is really astonishing. Sometimes it comes to a "dead lock;" so great is it that they have railroads built in the air on truss work to convey passengers ; and nothing strikes a foreigner so much as the street railway overhead. The city was gaily decorated for the 4th; the streets exhibiting, as far as the eye could reach, a profusion of bunting, streamers, banners, and flags of every nationality—the Stars and Stripes predominating. The shipping is enormous; vessels are constantly plying to and fro. There is more "life" and bustle in New York than in Philadelphia with its World's Fair. I re-crossed the river to Jersey City at 7.30 p.m., paid $5 for a return ticket to Philadelphia, and very shortly we were steaming through the State of New Jersey, reaching the Quaker City at 11 p.m., on July 3rd.

I arrived in Philadelphia in time to see the ushering in of the 4th of July. The people seemed to have gone crazy. Old gray-haired men were skipping round like children, with small American flags in their hands, unable to contain themselves. Enthusiasm was at its height. Bells were ringing, guns firing, bands playing, fireworks illuminated the sky, and the whole city was on the *qui vive*. A grand procession, carrying illuminated banners (representing every nationality) marched through the streets, together with blacksmiths, shoemakers, and others, working at their different trades as they passed in line, forming the grandest pageant ever witnessed. But the ceremonies in observance of the American Centennial were more appropriately observed on the 4th of July. The central attraction was at Independence Hall, where, one hundred years before, the Declaration of Independence had been proclaimed. In this Hall the first Congress met ; the chair and desk, used by George Washington, life-sized portraits of former Presidents, and other objects of interest may be seen. In the rear of Independence Hall was erected a platform seating 4000 invited guests, neatly decorated with the national colors. A special stand had been built for the grand orchestra and chorus; and when all were seated, the scintillating glintings of sunlight along the polished surfaces of 250 instruments, the gradually ascending rows of 1200 singers artistically grouped on the stand, formed a picture which well supplemented the brilliant scene near the historic walls of the Old State House. And when the grand opening overture was announced (founded on the national air "Hail Columbia") the orchestra answered with a flood of the richest harmony. This sent the patriotic blood coursing through every heart, and each measured bar of the national hymn, found responses in every soul. After prayer, and a few speeches, the song "Welcome to all Nations" sung by a chorus of 1200 voices, accompanied by the full orchestra rose to the skies in one glorious pæan. Every note could be heard as distinctly as though rung out from some mighty bell, and as the tones rose and swelled with the tune the very air seemed to tremble with musical sweetness. After some speech-making a procession was formed, the U. S. army, trades' unions, societies, and workmen of all kinds taking part in it. But the grand finale was the display of fireworks at night. It was one of the best pyrotechnic exhibitions ever witnessed on the continent. The heavens were made resplendent with a grand profusion of fire-baloons, pyric bouquets, signal rockets, fusilade of bombs, (dropping ruby, purple, emerald, sapphire, gold and siver stars ;) then a pyric piece representing Washington, surrounded by American flags, and the representation of the Old Liberty Bell, concluding with an immense pyric temple, giving an allegorical representation of the rise and progress of America. These lighted up the park like the noon-day sun. But I must stop here, and tell you a little about

THE CENTENNIAL.—It is situated on beautiful lofty ground, overlooking the Schuykill River. A more suitable location could not be found. In the centre is a delightful retreat, appropriately called the "Hunter's Camp." There is nothing artificial about it like other parks, it is just as nature formed it. With nice shade trees, fine living springs, &c.; it is a pleasant place to rest. The squirrels scamper here and there, and on every side your ears are greeted with notes from those noble choristers of nature's great cathedral. To increase the pleasure, a splendid brass band performs in the afternoon. Every convenience is to be found here. For 5 cents you can travel on the cars round the entire grounds. Rolling-chairs can be had cheap, in which you may take your "sweetheart" through the different building, seated as comfortably as if occupying the old arm chair at home. Across the valley, called "The Hunter's Camp," a railway extends to carry passengers, fare 3 cents, thus saving the fatigue of an up-and-down-hill journey. A number of statues, busts, beautiful fountains, &c., are interspersed through the grounds. One New York druggist has a miniature Cologne water fountain in the Main Building, which perfumes the edifice, as well as thousands of pocket handkerchiefs passed under its spray by visitors. In the buildings, seats are placed here and there, and refreshment rooms, toilets, &c., are quite convenient. Caretakers are found in every alley, obliging, and ready to give information—or put you in the lock-up if you don't behave yourself. There is a complete fire brigade, fully equipped, and ready for action, on a moment's notice.

So much for the outside show, but to describe the inside one is impossible. When you enter the Main Building, the eye catches some attractive object; then one more beautiful; another grander, and so on through a succession of wonders, until the end of the building is reached (this took me *only* two days). When finished, you have a confused or *mixed* idea of having seen everything, and nothing definite about anything. But after leaving the Centennial and observing different objects, probably in your own village, it recalls to your memory what you have seen there, and makes you a more competent judge between the excellent and the inferior, for everything here is the best that human art can devise; and no one can visit the Exhibition, I care not what business he follows, without being benefitted by what he has seen.

Machinery Hall is an interesting building to go through. All kinds of machinery is there in operation. Everything is made in it, from "a needle to an anchor." Looms and printing presses take up a large part of the building, and are quite an attraction, especially the latter. Glass blowers are at work here, and draw hosts of on-lookers. The Agricultural Hall exhibit is especially good, and in the Horticultural Hall is to be found tropical plants, fruits and flowers of every variety. But the Art Gallery is the crowning feature of all. Here the work of the great masters in painting, sculpture, mosaic work, &c., is to be seen in perfection. Connoisseurs pronounce it to be the best exhibit ever made in the world. Imagination cannot conceive of how life-like marble can be made to appear. You can almost fancy them breathing, so true are they to nature. In fact, one figure,

made by some mechanical contrivance to exhibit signs of life, such as rolling of the eyes, &c., had to be removed. It is now placed in one of the windows of a store on Chestnnt street, and forms quite an attraction. The art department alone is worth a trip to the Centennial.

The whole world, so to speak, is to be seen here. The Turk, Japanese, Chinese, African, Russian, Persian, Moor, Hebrew, Spaniard, German, French—people of different dialects, habits, and color—are to be met with; also the various products, arts, and handiwork peculiar to these nationalities are here *to be studied*, furnishing food for a life-time's reflection. The Japanese and Moors (from Morocco) have residences erected in their native style—quite a novelty.

Visitors to the Centennial having time on their hands should take a trip to Cape May. It is situated 100 miles from Philadelphia, on the Atlantic Ocean. A steamer runs semi-weekly; fare, $3 for return ticket, good for three days. It is a delightful excursion down the Delaware River and Bay; especially to one coming from an inland city. But I must put my pen aside for the present, reserving my remarks on, "Seaside and Foreign Matters" for another letter. GEORGE H.

Toronto, Aug. 2, 1876.

[N. B.—The above letter reached me a few days too late for August No.—UNCLE TOM.]

The Apiary.

The Bee-keeping Industry.

The honey interest of this country is one of such growing importance as to be attracting the attention of a great many capitalists. Honey promises fair to become a source of national wealth. It is estimated that 70,000 of our people are engaged in apiarian pursuits, some of them sold last year from fifty to one hundred thousand pounds each, the product of their own bees. It is said that the income of I. S. Harbison, the great California honey magnate, derived from the sale of surplus honey, is more than $25,000 per annum, over and above all expenses. In this state, Capt. Hetherington, of Cherry Valley, sold last year 58,000 pounds from his own apiaries. Adam Grim, of Jefferson, Wisconsin, as much more. In fact, we might go on enumerating individual instances of the profitableness of this industry until we filled a whole column. But perhaps a better idea will be conveyed by more general figures. The 70,000 bee-keepers of this country own on an average a little more than 28 hives apiece, or in round numbers two millions in all. Twenty-two pounds of honey to the hive is considered a reasonable yield of surplus, worth 25 cents per pound or $8,800,000 for the crop. The wax produced is estimated at 20,000,000 pounds, worth at least $5,000,000, making the grand total revenue presented us by our industrious little friends, annually, $14,800,000. We annually export $1,200,000 worth of honey and $700,000 worth of beeswax.

The late Mr, Quinby, a most reliable author, in his work on bees, claimed that on an average every acre of ground would yield one pound of honey. The state of New York alone has 300,000,000 acres, yet she has never gathered more than 400,000 pounds. Just think of the loss! Honey being a sort of volatile oil evaporates if not gathered and "wastes its sweetness upon the desert air." Mr. Harbison says that the honey thus lost annually in California is of more value than the gold gathered! The profit realized by the keeping of bees averages from one to two hundred per cent on the capital invested. It is a business any one with limited means can carry on. Students frequently support themselves by keeping bees. Poorly paid ministers have often depended with more confidence for their daily bread upon these little industrious creatures of God than on ther parishoners. There have been but two or three real progressive steps taken in bee culture since the days of Huber. In 1852 the Rev. L. L. Langstroth invented movable comb hives, by which we are able to buy those neat little boxes or caps we see at the grocer's. Later on, came the extracting machine, which throws the honey from the combs by centrifugal force, leaving the combs intact so they can be put back in the hives and refilled by the bees. The greatest inventien, however, has been reserved for this year.

Most every one has noticed how delicately and perfectly formed the honey combs are, so much so that no one ever dreamt they could be successfully imitated. But it has been done. Dr. John Long has constructed a machine that turns the combs out mathematically correct. The editor of "Gleanings in Bee Culture," says in his comments on these combs that "the finest specimens of comb made by the bees look cheap and awkward when compared to them." That our readers may be better able to appreciate the value of this invention, we will say that three-fourths of their time, the bees are busied making their combs, and this, too, in the very honey-harvest time. Only one-fourth of their time is consequently being spent in gathering and storing the honey. Now that the combs are to be furnished them, and this three-fourths of their time saved and devoted to gathering in the wasting honey, the revenue from honey and wax will be enormously increased. Is it any wonder that this little insect has been the chosen symbol of saving industry for years?—*Industrial Motor.*

Agricultural Exhibitions of 1876.

The Provincial Exhibition is appointed to take place at Hamilton on the 18th, 19th, 20th, 21st and 22nd September.

The Western Fair, London, has been appointed to be held on the 25th, 26th, 27, 28th and 29th of September.

The Central Exhibition, Guelph, has been appointed to commence on the 2nd of October.

A Cheese Exhibition, under the auspices of the Dairymen's Association of Ontario, will be held at Ingersoll on Thursday and Friday, September 14th and 15th, 1876.

A Cheese Exhibition, in connection with the North Perth Agricultural Society, will be held at Stratford on the 5th and 6th of October.

The Provincial Exhibition and the Western Fair Directors are making preparations for two good Exhibitions. We have not yet heard from the Secretaries of the Central or Quebec Exhibitions. We were shown a handsome gold medal, presented by Mr. Hugh Miller, of Toronto; it is to be given for the best fat cow at the Western Fair; this is another new prize. A good display is anticipated at both Exhibitions. We propose giving two FARMER'S ADVOCATE Prizes at the Provincial Exhibitions of Ontario and Quebec next year.

Manitoba Provincia Exhibition will be held in Winnipeg on Wednesday and Thursday, October 5th and 6th.

HURRAH FOR OUR GOVERNOR.—We have heard from good authority that Lord Dufferin has been the means of, (through his admiration of the utility and beauty of the horse,) having imported into Canada four Percheron Stallions. This step we look on as being of really more value to our country than all the importations of cattle or sheep that have taken place for years, because we have about as good stock in cattle and sheep as they have in England, but in horses we have been sadly in error by selling our really heavy good breeding mares, and using small light horses. The Percherons are, in our estimation, far superior to any Clyde or English draught horses. We have none ourselves, but, from travel, observation and reading, feel satisfied that our Governor has set a wise aud judicious example that ought to be followed by all leading agricultural bodies, as wealth would accrue to the country from the improvement of our valuable animal the horse. The Blood or Clyde are not the right class to improve our stock. Of course others may differ faom our opinion—if so, they may be heard through the columns of this journal.

THE DAIRY.—Ill health has prevented Mr. J. Seabury from writing his communication this month. Prices of second quality of cheese is low. Some factories have sold as low as $7.50 per hundred; some will not receive that for July make. Dairymen that attempt to ship their second quality will most probably regret the attempt. If you sell inferior quality at home at a loss it will be better than risking a greater loss.

WANTED.—A few good, active young men and young women, to canvass for the ADVOCATE. A good salary is guaranteed to good agents. Apply at once for particulars and territory to W. WELD, FARMER'S ADVOCATE OFFICE, LONDON.

We appreciate no pleasure unless we are occasionally debarred from them. Restraint is the golden rule of enjoyment.

Canadian Horses at the Centennial.

The Centennial Commission have made provision for a display of horses, commencing September 1st and continuing till the 14th. Only 100 American horses have been entered, a number that will be ridiculous in the eyes of foreigners. Canada West has entered 76 horses, and the Eastern Provinces of Quebec and Nova Scotia have promised to make the Dominion exhibit reach 150 head. These animals have already been selected by the Dominion Government and will be typical in their respective classes.

The Flax Crop.

Mr. Honeyman, proprietor of the Embro flax mill, says that the flax crop of 1876 promises to surpass, if possible, the yield of any previous year, and that he expects to commence harvesting it in about ten days. The same gentleman has just returned from a trip through the Western States, and reports the flax and corn crop in Illinois and adjoining States a failure. The enemy which is destroying the corn is a peculiar black worm. It is encased in a suit of armor difficult to break, and operates in the corn hills by eating off the young plants.

Grange Matters.

Grange excursion trips are being arranged for visiting the Centennial Exhibition. Return tickets from London will be $10.

A large Picnic was held at Pelham, where a Guelph editor who formerly opposed the Order in a most bitter manner, desired to become a Granger.

We hear that good accommodation can be had by any persons, whether Grangers or not, at the Grange Encampment near the Centennial Exhibition, at from $1.50 to $2 per day.

We have received no communication for publication about the Order from any one during the past month, except the list from the Secretary.

The Executive Committee will meet in Toronto on Tutsday, September 5th.

NEW GRANGES.

527, Sombra, John Cunningham, Master, Wilkesport; Wm. Fader, Secretary, Bradshaw. 528, Sheffield, S. S. Martin, Master, Warden: C. B. Martin, Secretary, Warden. 529, Hereward, John Cowan, Master, Hereward; Wm. Hamilton, Secretary, Hereward.

Mulching is too generally neglected, especially in young orchards. It is the next best thing to constant cultivation, and if a man will not take pains to cultivate he certainly ought to mulch with something which will help maintain fertility.

The attention of tree-dealers, planters, etc., is called to the advertisement of E. Moody & Sons, Lockport, N. Y. This house is one of the oldest and largest in the nursery trade in the United States.

Parties desiring trees, plants, or bulbs, are referred to Ellwanger & Barry's advertisement, now appearing in our columns. Their establishment is the largest and most reliable in the U. S.

We would call the attention of farmers who desire their sons' advancement to Mr. Curry's advertisement in this paper.

Commercial.

The grain crop of England is now considered below an average, but of excellent quality. The demand for foreign breadstuffs will continue while the supplies from all parts will keep prices low. This is the summary of our advice from England and America.

ENGLISH MARKETS.

Liverpool, Aug. 22.—Breadstuffs steady; corn, new mixed western, 24s. 9d. per quarter; receipts of wheat for the past three days, 54,000 quarters; provisions dull; cheese, 47s. 6d. per cwt. for fine American; bacon, 46s. to 49s. 5d.

AMERICAN MARKETS.

New York, Aug. 23—Wheat market quiet and firm; sales 28,000 bushels, at 85c. to 95c. for No. 3 spring; 90c. to $1.05 for No. 2 Chicago; $1.05 to $1.19 for No. 1 spring; barley and rye quiet; corn, firm at 55c. to 59c. for new western mixed; oats firm, at 34c. to 45c.; butter, 15c. to 30c.

Chicago, Aug. 23.—Wheat, No. 2, 89½c. to 90½c; No. 3, 80c.; barley, scarce and firm, at 72c. to 74½c.; rye, 53c. to 54c.

CANADIAN MARKETS.

Toronto, Aug. 3.—Wheat, 98c. to $1.03; barley, 55c. to 60c. oats, 35c. to 36c.; peas, 68c. to 70c.; rye, 60c.; butter, tub 17c.; rolls. 25c.

London, Aug. 3.—Prices of grain pretty much unchanged; Wheat, Deihl, $1.65 to $1.75; Treadwell, $1.60 to $1.70; red winter, $1.50 to $1.62; spring. $1.50 to $1.65; barley, 95c. to $1.05; peas, $1.10 to $1.15; oats, 90c.; corn, 80c. to $1.05; rye, 80c. to $1; buckwheat, 80c. to $1; cheese, 7½c. to 8c.; butter, key, 15c; roll, 18c. to 22c.

GEO. B. HARRIS & CO.'S LAND OFFICE

Molsons Bank Buildings, Market Square and Dundas St., London, Ont:

ELGIN.

505. South Dorchester, 100 acres; clay loam, 65 acres improved; balance timber, beech, maple, ash, oak and about 4 acres of tamarak on corner of farm; land nicely rolling; good frame house, barn, stable, granary, shed, &c.; 2 acres good orchard. Churches and school 1 mile; a capital farm. $5,600.

447. Malahide, 170 acres; loam on clay, 100 acres improved; timber, beech, maple and elm; a good sugar bush; 3 acres choice orchard; spring creek; 1½ storey frame house, on stone foundation, 7 rooms, &c.; frame barn 30 x 65, 2 other barns 26 x 40 each; shed 100 x 26, &c. Churches and school near; a capital farm on the shore of Lake Erie. $7,500.

387. Malahide, 50 acres, 40 improved; timber, beech and maple; good orchard; soil clay loam on clay; live spring; 1½ storey frame house, 7 rooms, stone cellar; frame barn; stable and cow shed Churches and school ¾ mile; Aylmer 8 miles; cheese factory 1 mile. Price $2.600.

445. Dunwich, 335 acres, 200 improved and free of stumps; balance good solid timber; beech and maple; soil clay loam; 8 acres of choice orchard; large frame house in good order; new frame barn, 72 x 36; shed 60 x 26, sixteen-feet posts, holds 30 tons of hay; stable 26 x 18. This is a first-class homestead, beautifully situated on the shore of Lake Erie. Price, $14,500.

460. South Dorchester, 50 acres; 42 improved and free of stumps; timber, beech and maple; 1 acre orchard; soil clay loam; frame house, 9 rooms; frame barn 30 x 50; shed and stable 22 x 50. Churches and school 1 mile; railway station 2½ miles. Price, $2,900.

468. South Dorchester, 105 acres, 85 improved; timber, beech and maple; a good sugar bush; soil clay loam; about 4 acres of choice orchard; comfortable frame house, frame barn, cow house and stable; a never-failing creek croeses the farm. Churches, school and village near; London 13 miles. Price, $50 an acre.

ESSEX.

492. Tilbury West, 100 acres; clay loam, 40 acres improved; timber, beech, maple, elm, ash and oak; log house and stable. School half a mile; railway station 2½ miles. $3,000.

497. Tilbury West, 50 acres; clay loam, 5 acres improved; timber, beech, maple, oak, ash and hickory; good new log house. Churches and school near; railway station 1½ miles. $1,150; $300 cash, balance as arranged to suit purchaser.

502. Tilbury West, 50 acres; clay loam, 10 acres improved, balance good timber; young orchard; log house and stable. Railway station 3 miles; school one mile. $950.

TOWNSHIP OF MAIDSTONE.

90. S. half of lot 6, E. River Ruscom; 100 acres, 50 acres cleared, balance hard wood; log house, stable and granary; soil clay loam; small orchard; fronts on the River Ruscom; 11 miles from Detroit.

91. N. half lot 6, and part of lot 5, E. River Ruscom; 200 acres, 50 acres cleared, balance hardwood; log house; soil clay loam; fronts on River Ruscom.

HURON.

500. Usborne, 50 acres; clay loam, 45 acres improved; hardwood timber; 1½ acres of orchard; hewed log house, stable, shed and large frame granary. St. Mary's 12 miles. $3,200.

384. Stephen, 50 acres, 40 improved and free of stumps; timber, beech and maple, some hemlock; soil clay loam; live spring and creek; log house, fair order. Churches and school 1½ miles; Centralia 7 miles; Exeter 10 miles. Price, $2,000.

388. Huron, 50 acres, 27 improved; timber, hardwood; soil, clay loam; frame house, log stable. Ripley Station, on the Wellington, Grey & Bruce Railway, 1½ miles. Price, $1,250.

KENT.

494. Orford, 74 acres; black loam, clay subsoil, 40 acres improved; timber, oak, ash, beech and maple; one acre of orchard; log house, stable and new frame granary. Churches and school one mile; market and railway station 6 miles. $30 an acre.

TOWNSHIP OF RALEIGH.

1. N. ½ of lot 14, in 6th; 100 acres, all clear; soil, clay loam; excellent dairy farm; frame house, two frame sheds and stable; orchard and well. $3,600.

2. S. ½ lot 14, in 6th; 100 acres, all clear; soil clay loam; with north half would make an extensive dairy or grazing farm. $3,200.

7. N. E. ¼ of lot 16, in 6th; 50 acres, all under cultivation; soil clay loam; new log house, new frame barn, orchard, wells, &c. $3,000.

9. S. ½ lot 17, in 6th; 100 acres, all under cultivation; soil clay loam; good orchard; log house and frame house, frame barn, log shed, good well, &c. $5,600.

10. N. ½ lot 18, in 6th; 100 acres, 40 acres under cultivation, balance woods—oak and hardwood; soil clay loam. $5,000.

13. N. E. ¼ lot 19, in 6th; 67 acres, 40 acres cleared, balance hardwood; soil clay loam; old log house and stable. $3,500.

21. S. ½ lot 22, in 6th or 3rd; 100 acres, wild land; oak, ash, elm; clay loam. $4,000.

25. N. E. ¼ of lot 23, in the 6th or 3rd Eastern Boundary; 50 acres, 45 acres under cultivation; frame house and log kitchen, frame barn; orchard; clay loam. $3,000.

29. W. ½ of lot 14, in 7th; 100 acres, 50 acres under cultivation, balance wooded; this lot adjoins the Raleigh plains, and is well drained by two new drains; splendid soil. $2,750.

30. E. ½ of lot 14, in 7th; 100 acres, 40 acres under cultivation, 20 acres in pasture, balance wooded; new frame house, kitchen and log shed; this also adjoins the Raleigh plains; is well drained by new drain through the lot; soil clay loam $3,500.

35. W. ½ lot 18, in 7th; 100 acres, 75 acres cultivated, balance woods and pasturage; clay loam; frame house and kitchen, frame barn and shed; good orchard.

37. N. ½ of lot 20, in the 7th; 100 acres, wild land, heavily timbered; oak, ash, elm and hardwood; clay loam; would make a splendid farm.

42. N. ½ of lot 21, in 7th; 100 acres; wild land; heavily timbered—oak, ash, elm and hardwood; clay loam; would make a fine farm. $4,500.

46. N. E. ½ of lot 23, in 7th or 4th, Eastern Boundary; 50 acres, of which 30 acres are under cultivation, baiancc pasture lands and woods; log house and kitchen, frame barn, shed and granary; soil clay loam; orchard, wells, &c. $5,500.

49. Centre part of lot 24, in 7th or 4th, Eastern Boundary; 100 acres, all under cultivation; soil clay loam; brick house, frame kitchen, frame stable, large frame barn and frame sheds, frame granary, hog pens, &c.; large orchard; wells; fronts on Gravel Road between Chatham and Canada Southern Railway; a splendid farm. $8,000.

TOWNSHIP OF HARWICH,

53. S. ½ of lot 1, in 4th; 100 aeres, all under cultivation; new log house, new frame barn, &c., granary; wells; young orchard; a good farm; fronts on the gravel road. $6,500.

TOWNSHIP OF DOVER EAST.

61. W. ½ of lot 12, in 4th range; 100 acres, 30 acrcs under cultivation, 10 acres bush pasture, balance wood land—oak, ash, elm, &c.; log house, frame addition, frame barn, log stable, &c.; soil clay loam $4,500.

62. E. ½ of lot 12, in 4th range; 100 acres, 40 acres under cultivation, balance wood land—oak, ash and elm; frame house and frame barn; soil clay loam. $4,500.

64. E. ½ of lot 13, in 4th range; 100 acres, 35 acres under cultivation, balance heavily wooded with oak, elm, ash, etc.; soil clay loam; log house, frame barn, shed, etc.; orchard, wells, etc. $4,500.

65. W. ½ of lot 14, in 4th range; 100 acres, 25 acres cultivated, balance wild land; timber, oak, ash, elm; soil clay loam; log house, frame kitchen, log stable; well. $4,000.

66. E. ½ of lot 14, in 4th range; 100 acres, 20 acres under cultivation, balance wild land; timber, oak, elm and aah; soil clay loam; log house and stable; well, etc. $4,000.

67. Lot 15, in 4th range; 200 acres wild land; ash, elm and hard wood, oak gone; soil clay loam. $5,000.

76. E. ½ lot 19, in 4th range; 100 acres, 25 acres cleared; balance wood land; timber—oak, elm, ash: soil clay loam. $4,500.

NIAGARA DISTRICT.

TOWNSHIP OF GRIMSBY.

95. Lot 18, in 7th, 100 acres, 60 acres under cultivation; strong loam soil; frame house and frame kitchen, frame stable and frame shed; well, &c.; five miles from the town of Grimsby.

96. Lot 19, in 7th, 100 acres, 60 acres under cultivation; strong loam soil; frame barn and frame shed.

LAMBTON.

476. Enniskillen, 50 acres; clay loam, 15 acres improved, balance good bush; small orchard; log house, stable and shed. Within 2 miles of a railway station; Petrolea 5 miles. $800.

484. Enniskillen, 200 acres; clay loam, 75 acres improved; timber, beech, maple, oak, hickory, elm and ash; frame house, frame barn 40 x 60, log barn, stable, &c. Churches 3 miles; school close; railway station 1 mile; a capital farm on Bear Creek. $6,200.

504. Brooke, 100 acres; heavily timbered, three-fourths hard wood; within 180 rods of the railway station and village of Alvinston; soil, part sandy loam and clay loam on clay; will make a good farm; timber will more than pay for the land; close to saw mill. $2,000.

426. Plympton, 100 acres, 30 improved; small orchard; timber, beech, maple, hickory, oak, black and white ash; soil, clay loam on clay; log house, barn and stable. Churches, school and railway station near. Price, $2,500.

438. Plympton, 50 acres, 35 improved; balance hard wood timber; soil clay loam; small orchard; new frame house, log barn, stable and other buildings. School close; railway station and market two and three miles. Price, $1,800.

MIDDLESEX.

347, London. 50 acres, 40 acres improved; timber, beech and maple; orchard; soil, black loam; new frame house; new frame barn, with stone cellar, 2 granaries, drive house and stone dairy; bounded by River Thames; London, 7 miles. Price, $2,400.

462, Lobo. 50 acres, all improved; loamy soil; small orchard; comfortable frame house, 8 rooms; frame barn, stable, cow house, &c.; churches and school near; close to railway station; London, 10 miles; Price, $2,600.

429, West Williams. 100 acres, 70 improved; balance timber; small orchard; soil, clay loam; spring creek; frame and log houses; good frame barn, shed and stable, and log barn; within 3½ miles of Park Hill. Price, $4,400.

430, Caradoc. 50 acres, 30 improved; small orchard; soil, sandy loam; frame house; frame barn, 30 x 40; granary, cow shed, waggon shed, stable, &c.; also blacksmith shop on the property; school and churches near; railway station, 1½ miles. Price, $1,600.

434, Caradoc. 50 acres, 23 improved; balance timber; smal orchard; soil, sandy loam; frame house, with brick cellar frame barn and shed; churches and school near; railway station, 2 miles. Price, $2,100.

475. Westminster, 5 acres; soil clay loam; frame cottage. barn and stable; small orchard. London, 2 miles. $1,500,

478. London, 100 acres; clay loam, spring creek, 75 acres mproved; timber, beech and maple; 2 acres orchard; frame house, 8 rooms; brick milk house, 2 frame barns, stable and drive house. Churches and school 1 mile. London 11 miles. $6,000.

479. Biddulph, 65 acres: clay loam, creek, 35 acres improved; timber, beech and maple; 2 acres choice orchard; substantial brick house, 13 rooms, cost $3,000; frame barn on stone foundation, drive house, stable, sheds, &c. Churches and school close; railway station ¼ mile. $6,200.

480. Westminster, 100 acres; light loam, spring creek, 70 acres improved, free of stumps; timber, beech, maple, oak, cherry and ash; small orchard; frame house, barn, stable and drive house. Churches and school ½ mile; London 5 mites. $6,000.

483. London, 6½ acres; clay loam, small orchard, live springs; frame house, barn and stable. School half a mile; London 2 miles. $1,400.

495. West Nissouri, 100 acres; light loam on clay, 85 acres improved; timber, beech, maple and ash; spring creek; 2½ acres choice orchard; log house, 2 frame barns 36 x 54 each; stable, drive house and shed. Chnrches and school near; London 11 miles; cheese factory near. $7,000.

503. West Nissouri, 104 acres; clay loam, with the exception of about 14 acres sandy loam; 65 acres improved, spring creek; timber, beech and maple; plenty of rail timber; 3 acres choice orchard; frame house, 7 rooms; barn, stable, drive house, cow house, &c. Churches and school 2 miles. London 13 miles. $6,500.

441. Delaware, 65 acres; clay loam, 45 acres improved; timber, beech and maple; small orchard; two-storey frame house, 6 rooms, barn, drive house and cow stable. Churches and school half a mile; London 10 miles. $55 an acre.

370. Caradoc, 60 acres; clay loam, 45 acres improved; good orchard; frame house, log barn and stable. Near village and railway station. $2,200.

481. Metcalfe, 134 acres, 80 acres rich clay flats; timber, beech, maple, basswood and elm; 2½ acres choice orchard; frame house, barn, &c. Churches and school half a mile; Strathroy 3 miles; a good dairy farm. $4,500.

482. Metcalfe, 200 acres, 160 acres improved, 120 acres clay loam, balance sandy loam; 10 acres of orchard, the very best fruit; frame house, barn, drive house, shed, stable, &c.; brick dairy. Churches and school half a mile; Strathroy 3 miles; a capital stock or dairy farm $9,000.

487. London, 40 acres; light loam; 1½ acres orchard; capital brick house, 9 rooms, &c.; frame barn, stable, coach house, shed, &c. This is a choice country residence within 2 miles of London. $8,000.

489. West Nissouri, 25 acres; clay loam, 17 acres improved, balance timber; thrifty young orchard; new frame house, 8 rooms, stable, granary and shed. School close; London 7 miles. $2,300.

490, Westminster, 140 acres; clay loam, 80 acres improved; timber, beech and maple; live springs; 3 acres good orchard; new frame house, 9 rooms; frame barn, stable, cow shed, ice house, &c. School close; London 4½ miles. $10,000.

390. London, 92½ acres, 50 improved and free of stumps; timber, oak and some pine and cedar; small orchard; soil, gravelly loam; live springs; new frame house, 3 rooms and cellar; good new bank barn, with stable under. Churches and school half a mile; London, 5 miles. Price, $4,163.

389. London, 120 acres, 95 improved and free of stumps; timber, oak, about 2 acres cedar; 2 acres orchard; soil, gravelly loam; live springs; frame house, 7 rooms; stone cellar; 2 frame barns; bank barn with stable. Churches and school, half mile; London, 5 miles. Price, $5,400.

OXFORD.

488. North Oxford, 90 acres; clay loam, 75 acres improved; timber, beech and maple; good supply of water. This is a valuable property immediately adjoining the Town of Ingersoll.

496. West Zorra, 24 acres; clay loam, 23 acres improved. Churches and school ¾ mile; railway station ¾ mile; Woodstock 4½ miles. $1,000.

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