THE

FARMER'S ADVOCATE.

"PERSEVERE AND SUCCEED."

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Wood Ashes as Farm and Garden Manure.

One of the waifs that has come into our possession is a fragment of a report from the Fishery Overseer of the great Northwest. These little waifs that are borne to us on many tides we have sufficient curiosity to peer into, though it may be at our busiest moment. A little twig, once part of a basket enclosing fruit brought from Smyrna, fell into the hands of an Englishman, who, too, had a more than oommon share of curiosity to know something of the unknown. The little twig he planted, and it became the parent of all the Weeping Willows in the British Isles.

The waif we have now got hold of is not of so much importance, but it is a good subject for a moment's reflection on what our agriculture has been, and what we hope it will be before many years have sped their course.

The inhabitants of the Northwest, we are told, have hitherto been planting on the banks of the Assinniboine river, and as no man ever thought of manuring his fields, they built their cattle houses on the banks of the rivers and streams, or on the slopes immediately above the banks, and they depended on the spring floods for carrying it down to Lake Winnipeg.

No greater value seems to have been placed on manure some years ago in Ontario than in Manitoba. The writer knew, not a score of years since, a ~~bee~~ to be assembled to cast away a large heap of manure, the accumulation of many years, that had increased so from time to time that it had become an obstruction to every movement, whether of men or cattle, in the old barnyard.

Farmers have of late begun to think somewhat more of their manure, but we have some doubts of some of them appreciating it at its true value. One of the grounds of this opinion is the low estimate in which one of the most valuable manures is held. Why are not the ashes from our wood fires preserved more carefully, and why are they traded away for bars of soap or peddlars' wares? Every day we see them gathered in town, or brought in from the country, while the farms and gardens to which they should be applied would pay well for every pound of manure given to them.

Some farmers have even expressed doubts of the value of ashes as a manure. Whenever such a doubt could have originated is to us a mystery.—Wood ashes are very rich in the mineral constituents of plant food, and are in the best condition to be available for their support and nutrition. In wood ashes we have a large supply of potash, a constituent of food required by all the plants we cultivate with such care and labor, whether in the field or garden; for some, as, for instance, the potato, it is an element of absolute necessity. Is it desirable to add to our soil phosphate of lime, carbonic acid, and magnesia, we have them in the heap of ashes carefully preserved from our hearth. So it is with other elements of fertilization, as phosphoric acid, silicia, oxide of iron, oxide of magnesia. All these have been proved by careful analysis to be stored in the bucket of ashes given away so carelessly, as if for it we had no use.

That wood ashes are rich in the constituents of the best and most easily attainable food for plants, a moment's thought will convince the most sceptical. The tree from which these ashes have been immediately drawn drew from the soil and atmosphere all those constituents that nourished it and built it up from year to year. These constituents remained with it as absorbed by it during its growth. They were part of it when growing, when grown, when fallen before the woodman's axe, when burning, and when burned they remained in its ashes. They were not lost. Nothing in nature is lost. They remain in the ashes to nourish other plants, if used for that purpose; it may be for the growth of other trees, of vines to make glad the heart of man, of cereals or of grasses—for all they are available.

For many years have I seen the good effects of applying the ashes not only of wood, but also of other vegetable matter—of peat, and even, also, of earth, and I have never known an instance in which they were not of very great benefit to the crops for which they were applied. On a lawn that had become mossy they extirpated the moss, and its place was filled with white clover. Applied to meadows the yield of hay was increased fifty per cent. Fruit trees mulched with ashes bore more fruit, larger and improved in flavor; and for a potato crop there is no better manure.

Even when leached, they are valuable as a manure, but to preserve all their nutritive properties till they give them to the growing plant, they should be kept carefully under cover, or rain would wash away from them much that forms part of their great value. When thrown out uncovered under the rain, they become in a measure leached, and though still valuable, they are less so than if properly preserved.

The Fall Crop of the United States.

Now, as we look back at the winter through which we have passed, we feel some anxiety to know how the long months of hard frost, more protracted and penetrating to a greater depth than in ordinary winters, has affected the fall crops. We can now form some estimate of our prospects for the season. The yield of our crops, it is true, may be lighter or heavier than present appearances indicate; we cannot know what the future may have in store for us; but we can judge what present appearances are, and from them form some opinion of the promises at least, if we cannot speak definitely of their fulfilment.

From the Report of the Agricultural Department of the United States we learn what are the prospects at present of the winter wheat crop in that country. To us Canadians the report is of no little moment, as the markets for breadstuffs throughout the world are of necessity more or less affected by the yield of the crops in each grain-bearing country, and in the United States the area under grain crops is at all times so great compared to her population, that from her more than any other grain is most largely shipped to the English markets.

In this U. S. Report there are great complaints of failures and of partial failures. It is always so at the departure of winter, but the complaints are, it seems, more than in other seasons; however, though there are doubtless failures of crops, with bare fields to be seeded anew, we do not lose heart. Before our subscribers read these lines, many a field, now partly bare and dusky, will have revived from the refreshing influence of the genial showers and light and heat of May. Some fields will have been seeded anew, but though at some loss, they will, it is to be hoped, pay their expense when the harvest sheaves are gathered home.

The fall wheat has, no doubt, passed through a trying ordeal in a winter more than usually severe, and some of it has perished. In some places, the Western States especially, it has perished or has stood the winter badly. On the prairie lands there was no shelter, no wind-break to keep the snow from being blown off the exposed wheat fields. The Canadian knows the value of the snow as a mulching for his wheat crop.

The report gives the area sown with wheat last Fall, as about nine per cent. above the Fall of 1873, being an increase of 1,500,000 acres. This increased area will increase the general produce of the country fully as much as any partial deficiency in yield would bring it below the increase of the previous year. The condition of crop is not favorable on the whole. In some sections the young plant has been badly winter-killed, the latter frosts especially doing much injury. Though the frost was not more intense than in Canada, there was more alternate thawing and freezing, and the ground was not so well covered with snow in the Northern States. The condition as reported in April was below an average, and far below that of last year. In the South the condition gives good promise. In both Northern and Southern States there were exceptions to these general conditions. Making all allowance we are told, for the possible improvements in the North and Northwest, it seems certain that the aggregate winter crop will be materially reduced. Those sections in which drouth prevented early seeding, and sufficient root development before winter set in have been the great sufferers.

The lesson brought before us so frequently, is again presented to us this season. We note especially the destination of the crop—wherever water has been allowed to remain on the fields. Where patches were long covered within the very roots were killed. Furrows well cleaned and water cuts opened where needed; are indespensible in farming. When the farmer has sown and covered his seed he should not leave the field till he has with plow and shovel removed away every obstacle to the running off the water freely.

Every where the superiority of wheat seeded with the drill, and the great advantage of this mode over broadcast are conspicuously apparent.

Plant trees for winter-breaks. Carry off water that would stagnate on your fields. Use the seed drill.

Barley for Feeding—Bere or Bigg.

REPLY TO QUERIES BY A. S., FRONTENAC.

Our subscriber A. S., has, ere now, seen in the FARMER'S ADVOCATE of May a reply to some of the queries we have since then had from him on the prospect of growing barley instead of spring wheat. It is even now too late to enter more fully into the subject, and, unless as a guide for future years, it would be wholly out of season to make the sowing of barley the subject of further comment in our journal. The principal, we might say the only objection to the sowing of barley more extensively in the country is the uncertain prospects of a good demand with paying prices when it would be ready for the market. Not being an article of such general necessity as wheat, it is doubted by

some if the grower can rely on so steady a market at all times for it as for that grain that is above all others the breadstuff of civilized nations. There may, it is thought, be a brisk demand with a fair price for barley; for wheat, let the crop be heavy or light, and the price high or low, there is at all times a ready market.

The subject has been taken up by many agricultural writers both in England and America. We have, since writing on it for the ADVOCATE of May, read not a few articles on it, and they advised farmers as we had advised them—to depend less on wheat, and, instead of so much spring wheat, to sow barley in part, and their only objection to this was the uncertainty of the market for the grain when ready for sale.

For good malting barley we have no doubt there will be always a good market. The demand for good malt drink is continuously increasing in Europe and America, and the area in which malting barley can be grown is limited by soil and climate. There is no grain more widely diffused than barley, none more successfully cultivated under so great diversities of climate and soil, but by far the greater part is ranked not as malting, but as feeding barley.

For feeding barley there is and always will be a demand to a greater or less extent, as provender for stock feeding, for which purpose it stands high in the estimation of feeders. Barley flour analyzed has been found to contain, in 1000 lbs., 720 lbs. of starch, 56 lbs. of sugar, 50 lbs. of mucilage, and 36½ lbs. of gluten, and this wealth of nutritive elements, as shown by analysis, is fully borne out by the experience of the many who have used it as cattle food.

Barley hulled and ground makes bread, coarser than wheat and less palatable, though nutritive and strengthening. It is the breadstuff most generally used in some countries of Northern Europe. Bere, or Bigg, which is of the same species, is, however, more generally preferred. It has the advantages of yielding very heavy returns and of being the first grain ripe. It is sown in the fall, is very hardy, ripens first in summer, and yields from 30 to 50 bushels per acre. The meal of bere is used in the same manner as that of oats, and mixed with it or used by itself, is much relished. It is very much used in Scotland, and hence it is known by some as the Scotch Bere.

The Cheese Market.

Some months ago we advised our friends who are engaged in the cheese business to make their cheese of a less size than many of them had been in the habit of doing. We were not singular in the opinion we expressed on this subject. Similar recommendation was given at the late Convention of the Dairymens' Association. If the Canadian cheesemakers are to maintain the character of this product of the dairy and obtain for it the best prices, they must be scrupulously exact in every particular connected with it. The quality of the cows, their food, the purity of the water they drink, the cleanness and ventilation of milk houses and factories—all must be attended to with the utmost care and unremitting attention. And not least in order to secure good prices—it must be sent to market in such size, form and manner as are in most demand by purchasers.

The Oxford *Tribune*, referring to this subject, regrets that more attention has not been paid by factorymen to the advice given in regard to the size of the cheese, having only heard of a few who have made the alteration. The purchasers desire a 14 or 14½ inch cheese, weighing 52 to 58 pounds, and in this the cheesemakers must act accordingly if they study their own interest. Our American neighbors, who are always awake to what concerns their pecuniary interest, generally make their cheese of the size so much desired by buyers, and have the benefit; and there is no reason for us persisting in making our cheese of a size not popular among purchasers. We hope our readers will profit by the advice given, and they will find on closing their year's accounts a good balance on the credit side.

Provender for the Winter.

The only well grounded cause of complaint against the climate of Canada is the long winter. The summer's heat, though grumblers sometimes find fault with it, has advantages more than enough to outweigh any evil or inconvenience from the heat of the dog days; and the winter's cold in its greatest extreme is a positive benefit to the country. But the winter, we must admit, is long, and while it drags out its weary length of five months, we feel the loss it entails on us in the great quantity of provender used up by our stock. Hence the greater necessity of making timely provision for the winter, such as may leave us not losers even in our winter feeding.

Farmers have learned the value of the root-crop for feeding. Wherever we have a stock large enough in proportion to the area cultivated, we have found the absolute necessity of turnips and mangolds to bring them in fair condition from November till May. With such a supply added to our hay and straw, our stock may be turned out in May in at least as good condition as when housed for the winter. But it is necessary to have provided the dry as well as the succulent food—to have a store of hay as well as turnips. And of the one, as well as of the other, there is too often a scarcity on the farm. The season may have been unfavorable for the early growth of grass, or there may be a more than usual drought, and the consequence is seen in the diminished size of our hayricks. To meet such cases of deficiency in our usual hay crops, and the lightness of straw, if such there be, either millet or Hungarian grass should be sown. Both are sure, when more generally known, to be appreciated. Between the two there is very little difference in quality or produce. Mr. T., in the vicinity of this town, saved at the rate of six tons per acre of hay from Hungarian grass in 1873. This was a more than ordinary yield, but the yield is always heavy.

For Hungarian grass or for millet the soil should be well tilled, and this is the more necessary as the seed is small and tender. It should be sown in June. This lateness of the sowing is advantageous to the farmer, as he is then less hurried in his farm operations. The quantity sown is one bushel or more per acre. If only one bushel be sown, the straw is apt to be too coarse, especially on a rank soil, and when fine it is better for feeding, whether as green food or hay. It is better mowed before seed or stalk is ripe; while yet green its nutritive quality is much greater than if cut dry, and this nutritive quality it retains throughout the winter. In this state, cut green and well saved, it is greatly relished by stock of every description, and is good, wholesome, nourishing food for horned stock especially.

Some farmers find it profitable to grow it for the seed, and by this means realize a good profit from its cultivation. The quantity raised per acre is said to average 30 bushels, and a much higher yield is said to be sometimes obtained. We have heard of 80 bushels per acre. We recommend it, however, not for the profit to be made by it as a seed crop, but as a crop for soiling and hay. Millet especially is known to rank very high as a forage plant. It is said to be second to no other of the grasses for feeding cows and adding to the profits of the dairy by increasing the quantity and improving the quality of milk, and keeping stock in good health and condition.

Corn and other grain crops may some seasons be destroyed or so much injured from frost or other causes as not be worth the ground they occupy. In such instances Millet or Hungarian grass is especially valuable to fill up the waste places and give a second crop scarcely, if at all, inferior to any other on the farm.

The Colorado Potato Beetle.

From a letter from C. Julyan we take the following extract on the method used by him for the preservation of his potato crop from the potato-beetles, and also an article on the dangers incurred by the use of Paris green, the remedy so generally used. We referred to the subject in our last number, and though we have ere now treated it pretty fully, we have dwelt no more on it than the importance of the subject demands. It is one that calls for our most serious consideration. If to apply to it in all its force the old adage—"Death is the pot," no more serious consideration ever forced itself on us. C. J. writes as follows:

We cannot afford to dispense with our potatoes, although until the parasites which prey on the Colorado Potato Beetle shall have increased to such an extent as to effectually check its depredations, farmers at a distance from market should content themselves with raising enough for their own use, and save them by hand-picking, the readiest way of doing which is to walk between the drills with a tin half full of water or ashes in one hand and a short stick in the other, and knock the beetles off the plants into the tin, not a very difficult matter, as they do not adhere very firmly; those which fall on the ground should be picked up and thrown into the tin. They do not readily bite, but when they do the best way to prevent any ill effects is said to be to apply a leaf of tobacco moistened in water to the bitten part for a short time, which will neutralize the poison. One of my neighbors has crushed them to pieces in his hand without feeling any ill effects, but I think, had there been any abrasion in the skin of his hand, he would have smarted for his temerity.

I was last spring thinning out some early cabbages in my hot bed, and amongst them I found a potato beetle; as it presented a peculiar appearance I placed it on the palm of my hand and found the peculiar appearance was caused by a great number of very small beetles, which left the old one and commenced running about my hand, which, of course, I closed and consigned the whole brood to the stove. This seems to prove that they can produce their young alive, and may account for their being so very numerous in the spring, before the early potatoes afford them a supply of food and a convenient place of deposit for their eggs.

C. J.

USING POISON ON PLANTS.

The scientific and other papers are discussing the subject of the danger attending the use of Paris green and other poisons in destroying insects on plants. The matter is one of great importance, and is deserving of the careful attention of all cultivators who are tempted to resort to desperate remedies for parasitic pests. The *Scientific American* says:

"The question of whether the use of Paris green (arseniate or aceto-arseniate of copper) upon potato plants as a means of destroying the bugs, will tend to poison the soil, and thus render it unfit to produce vegetation, receives a definite answer from Professor Le Conte, in his paper recently read before the Academy of Sciences. The opinion, advanced and concurred in by such high authority as Professors Silliman and Alexander and Mr. Mitchell, affirms unequivocally that arsenic and copper are poisons which act with equal energy upon plants and animals. It is merely a matter of time, if the poison is used at repeated periods, before the soil is poisoned so as to prevent the growth of all vegetation.

"Professor Le Conte enters an earnest protest against the present loose, yet enormous use of this fearful poison in the hands of uneducated men. It is ordered by the western druggists literally by the ton, and repeated deaths have resulted among farmers through its careless employment. The death of several persons in a single dwelling in this

city from eating pickles upon which some Paris green had been blown by the wind, occurred quite recently. It is well settled that arsenic is dangerous even externally, and experiments have proved that its poisonous effects are developed by a smaller amount inserted in a wound than when taken into the stomach."

In the *Journal of Applied Chemistry* for September, 1874, is a case from Dr. Doremus. "Deaths from Paris green," says the *Journal*, "are becoming quite too numerous and frequent. Three persons who partook of lemonade and chow-chow pickle at No. 17, West Fifty-seventh street, New York, on the 19th of July, were soon after taken ill, and on the 21st, one of them, named John Powers, died. His sister died the next day, and Ellen Burbie, the cook, died on the 24th. Portions of the stomach and intestines of each were sent to Dr. Doremus for analysis, and in each case he detected the presence of arsenic and copper; he was therefore of the opinion that death was caused by arsenite of copper, commonly known as Paris green. In reply to a question by the coroner as to how much Paris green would cause death, he said that a very small quantity would be sufficient. A juror asked him whether he thought a grain would kill a man. He said he did, and that he would recommend the jury to warn the public against its use. Professor Doremus also said that he would take that opportunity to earnestly request that the members of the press who were present would impress upon the public the extreme danger of using so violent a poison. As an instance of the danger of using Paris green in any way about dwellings, he cited the case of the poisoning of the whole family of an eminent physician in London by a single loaf of bread, which the baker had placed, while warm, on a shelf that had been painted with Paris green. If a single grain of this poison (the 480th part of an ounce) is sufficient to cause death, it will be seen that a very little of the dust received into the system from time to time is fraught with the most fearful danger to health and life."—*N. Y. Observer.*

There is undoubtedly no little danger in the use of Paris green by persons inexperienced, and many of them, thoughtless of the risks incurred, and all would protest against the present loose use of this fearful poison. But we see no good or sufficient grounds for reversing the opinion given in the April number of the FARMER'S ADVOCATE. We repeat we have now had trial of it for some years, without any injurious results from its use. The potatoes have not been thereby rendered injurious to the health of those using them daily, nor has the soil on which they were grown shown the slightest premonitory symptoms of having been poisoned so as to prevent the growth of all vegetation, and experience is no doubtful guide. Professor Croft, well known as no mean authority in science, has examined stalks and tubers, and not the slightest trace of arsenic in the tubers could be detected in either of three trials. This we pointed out in our last issue, in reply to enquiries from "Old Subscriber," in Wellington Co. The minute traces of arsenic detected on or in the stalks may indicate a danger to cattle eating them. This should be guarded against, but their eating potato stalks is of very rare occurrence, and their having access to them under any circumstances should be prevented, irrespective of the use or non-use of any poison, as they are not merely useless but injurious as food.

Paris green, if to be still used for this purpose, should be bought as pure as possible, and mixed with either plaster, flour or water; if with plaster, 1 lb. to not less than 30; if with flour, 1 to 16. Plaster has the advantages of being lower in price than flour, and beneficial to the crop. Flour is preferred by some, as adhering to the plant more tenaciously than plaster. The method said by many who have tried it to be the best for applying it, is by mixing it in water, 2 tablespoonfuls of arsenic to an ordinary pail of water, and sprinkling on the plants.

In the use of Paris green we cannot be too cautious. The fatal results of even slight contact with it, though not in contending with the Colorado potato beetle, prove the great danger in using it without the greatest care. —S.

Products of a New Brunswick Farm.

From the "Colonial Farmer" we take abridged the following letter of Mr. Thompson, of Sheffield House, N. B., giving some reports of the products of his farm of thirty-eight and a half acres. While differing from Mr. Thompson's system of farming in some particulars, as, for instance, in cutting hay four years in succession off his land without top-dressing, we must admit his success in raising large produce from his farm. His letter leads us to the conclusion that he leaves the aftergrass on the meadow where it grew, uncut and uneaten. If this were so, it, of itself, forms no little substitute for top-dressing, and as a mulching, lying on the ground during the winter, it is of the greatest service to soil and grass, preserving during the winter a moderate warmth, and nourishing in the early spring the young tender grasses, when such nourishment is most necessary and of the very greatest advantage. In the rich fattening pasture lands of England and Ireland this is fully appreciated by stock feeders. The fattening fields are never pastured bare in the autumn, and after the fattened beeves are early in the season sold off or housed for stall feeding, the long rich grass is left remaining on the land for this purpose of manuring and mulching; so when the stock of the ensuing season is turned into the pastures about the 12th of May, there is an abundance of the most nutritious food. If Mr. Thompson left his three feet of aftergrass as a mulch on his mowed land, this would account in some measure for the crops of hay not falling off during the successive years of mowing.

From the good yield of his root crops we learn another cause of the general good yield of the farm. The preparation for the root crops must, to produce such results, have been thorough, and the good cultivation and manuring tell their own story in the future crops.

You will think me very remiss in not writing you before this to give you the amount of hay from the field you saw when on my farm in 1873. I had the hay put in a mow—twenty-three tons, eighteen hundred and seventy pounds. The field was raked with a horse rake after the hay was hauled in, and probably I had one ton more of hay, which I did not put with the rest, it not of course being so pure as the other. The field measured eight acres one rod, fourteen poles and seventeen yards. The yield from this would be about three tons to the acre, including the rakings. I must say I felt a little disappointed. I thought I should have had more, as you will remember it looked first rate. I have come to the conclusion that many of the big hay crops we read about, if they were weighed and an account kept, would fall short of the estimate. My crop in 1874 was about the same. This makes four years cutting without any top-dressing, and last fall the aftergrass was three feet deep. Five years ago I laid the field down in oats, and from the yield threshed seventy bushels to the acre, and sold two tons of straw to the acre. The crop of turnips and carrots you saw turned out very well. I had on three acres, two rods and one pole, twelve hundred bushels of turnips and six hundred bushels of carrots, besides the quantity consumed by my four horses and two cows. My hay crop turned out (taking the farm altogether) very well. I sold fifty-five tons, and fed the animals before mentioned. In oats two hundred and eighty-seven bushels, and sold six tons of straw, and retained an abundance for my own use for bedding, &c.

It gives a person a better idea of the productiveness of a farm by stating what is raised on it and sold, and what stock is fed on it. There is then not so much wild guessing at random. The farm contains thirty-eight and a half acres; about thirty-five in crops, the remainder in garden, shrubbery, buildings, roads, &c. I succeeded in importing three first class men from England for draining, and have finished all up. I laid sixteen thousand feet of drain pipe from four to five feet deep, and twenty-five feet apart. This gives me about ten miles of draining. I find plowing in the fall about eight inches deep, and subsoiling two inches more, makes a first rate job, much better than too much plowing in the spring. I cross plow, harrow well, then go over the ground with a Nishwitz pulverizing harrow, then grub with one of Howard's (English) grubbers. This makes the field like a garden and I get good crops, which I think pays for all the extra labor. I have got work for the drainers for two years to come. I hope to have the pleasure of seeing you in St. John this summer, and I will take you to one of my neighbors, where the drainers will be at work, and I know you would be pleased at the thorough and expeditious way they put their work through. Excuse me for taxing you with so long a letter, but believing you to feel a deep interest in the subject is my excuse for it.

RICHARD THOMPSON.

Conversations with Farmers.

Wm. Goble, of Dorchester, has given us a sample of potatoes raised from the seed balls of the Excelsior in the year 1872. He has now two bushels of them. Out of the many kinds raised in the seed bed, this was the only variety he preserved. The others he considered not worth propagating.

They have a great resemblance to the Early Rose, but are somewhat darker in color and the eyes a little deeper indented. They are, he says, earlier by a few days than the Early Rose, and he has found them more productive, while they are equally good for the table. We expect to be able to state their real worth next season, as we have given them to reliable parties to plant them on different soils, and they will be able to state how far they will maintain the character they have the present year.

DIFFERENCE OF VALUE OF MANURES.

Mr. W., of Westminster, says he, some years since, manured a field of 12 acres, part with good manure from the stable, made with proper care; the remainder with manure that had been exposed to the weather and then scraped together carelessly. The field he then plowed and sowed in wheat. It was equal in quality throughout, and was cultivated alike. The crop on that part to which the well-saved manure had been applied was through its whole growth so far superior to the remainder of the field that it was frequently the subject of remark to passers by during the season. The field was sown in oats the next season, and there was fully as great a difference in the crop in its appearance throughout its growth and in its produce from the cradle and threshing machine, as there had been in the wheat crop.

Of hen manure he entertains a high opinion, having had proof of its value as a fertilizer. In manuring a field he applied to a small part of it some manure from the fowl yard very light, while the remainder of the field he manured heavily. That part to which the fowl manure was applied was after the dressing much richer than any other part of the field—almost too rank, he said. "I am quite of your opinion," he added, "that very much of the value of manure depends on our care and treatment of it, and also that the food of cattle greatly affects the value of their excretions. Rich food improves not only the stock fed, but also the value of the manure heap."

BRITISH COLUMBIA.

We have had a visit from Mr. Adam Innes, now a British Columbian. He has been four years an owner of property in that young but prosperous colony. He took up 480 acres of land in 1871. It is, he says, good fertile land, with clay bottom. The climate is very mild. His plow was only stopped by frost twice in the four years. Root crops are much heavier than in Ontario. Oats yield large crops and do not lodge; the produce is 60 to 80 bushels per acre; of wheat 45 bushels. There is no wind-storm, so that the oats is not broken down; it is not subject to lodge, yet it cannot be reaped with the reaping machine, it is so very tall. Finds pork raising a most profitable

branch of farming. Prefers British Columbia to Ontario. Settlers are entitled to free grants of 160 acres of good land. There are good prospects in it for a poor man. His journey from that place to his former home at St. Mary's, Ont., took 15 days, and the expense of travelling was $150. Freight from Canada to San Francisco is $3.50 per 100 lbs.; from San Francisco to British Columbia $2.50. He is taking with him on his return garden and farm seeds and implements. Seeds can be purchased there, but he thinks a change of seed is needed.—The climate is, he says, very healthy, and he is altogether pleased with the country.

Mr. St. John, Cainstown, says: "I have read with pleasure and profit your articles on clover, timothy and grass, and as regards leached ashes, I have found them the best dressing for apple trees to prevent borers and to produce fruit."

Canadian Agricultural Progress.

In every branch of business where money is to be made, men of energy, spirit and ability strive hard to obtain it. Capitalists will advance money whenever they see a good prospect of making a good interest for money invested.

Immense sums are annually expended on the importation and feeding of stock. Some have made money by it; others have lost. We have the names of the successful ones constantly before us; the losers drop down and are heard of no more. It is the same in every other business. A great deal has been made by manufacturers of all the wares we use, but in every business there have been those who gain and those who lose. Great profits increase competition, until some are sure to lose.

Agricultural implement manufacturers have been perhaps as successful as any. Farmers have paid high prices for many of their implements, and do so now for some. Large manufacturers must be men of business and ability; they can command money as long as they can show to the bankers and capitalists that more than common interest can be made. The reaping and mowing machine business has been very profitable to manufacturers; immense establishments have been built up in various parts of America for their construction.

We presume Mr. W. N. Whiteley, of Springfield, Ohio, stands foremost at the present time as inventor, patentee and manufacturer of reaping and mowing machines. He invented the Champion reaper and mower. It is claimed that this machine will do its work better than any other in standing and lodged grain, that it is of lighter draft, more durable, less liable to get out of order, and is the most perfect harvester and mower in the world. Thirty-two thousand of these machines are being made in the States this year.

The Champion reapers are also constructed in Oshawa by the Joseph Hall Manufacturing Company. Mr. F. W. Glen, the present manager of this company, took us through this large establishment, which we consider the king of Canadian agricultural implement manufactories. Four hundred men are now employed in this establishment. The great work now in progress is the construction of the Champion mowers and reapers. We were shown the process from the making of the wrought iron frames to the finishing touches of the painters. The hands, as we passed through, were not only fitting, but in two places had the works put into running order to be sure of their being right. At the last place the whole machine was fitted and run by steam power at double speed to have it fairly tested in all its parts. Even the wood was imported from Ohio, as they could not procure it here of sufficient strength to suit them. The greatest care appears to be bestowed on their construction and on the material used.

This company is now constructing from 25 to 30 machines per day. At the time we were there—May 13th—600 had been shipped, and orders were in for over 700 more. This company intends manufacturing 2000 this year; they only manufactured 250 last year, but the reports of the great satisfaction they give ensures their sale this season. They intend making 4000 next year, and devoting their whole force and energies on these machines; they are already making their preparations.

We approve of specialties, and believe that better implements can be got up at cheaper rates when a person or firm devote their whole attention to a specialty.

They have disposed of their hay rake, seed drill and broadcast seeder patterns and interest to a new company formed in Oshawa, under the name of the Mason Manufacturing Company, with a capital of $100,000. The new company has now purchased the hat factory for its works.

Mr. Glen has fortunately secured the good will and aid of Mr. Whiteley, the inventor of the Champion and the owner of the most valuable reaper and mower patents in the States, Canada and Europe; Mr. Whitely stands among manufacturers as Mr. Barnum does among showmen—minus Barnum's humbug. He has also secured the good will and aid of Mr. L. H. Lee, a most experienced manufacturer. Thus he feels doubly safe in his great undertaking.

We must congratulate the inhabitants of Oshawa on the acquisition gained in securing Mr. Whiteley's aid and capital; this will tend to make Oshawa the Sheffield of Canada, and greatly add to the prosperity of this already prosperous place. No town we know of shows greater signs of prosperity; at 12 and 6 o'clock the streets are almost black with mechanics, resembling bees at swarming time as they come from the various factories. Other large works are also to be established at this place.

Free Grant Lands.

To "A Correspondent" who wishes for some information in the FARMER'S ADVOCATE respecting the Free Grant lands in Canada, we would premise that whatever information he can receive, it will be well, we may say necessary, for him to spy out the lands himself, to examine the soil, location and present and expected means of access, before he take up his homestead in what must be to him an unknown country.

Not having official information on the subject, we give a brief sketch derived from what we believe reliable sources. There are two principal localities in Peterborough and Ontario counties to which especially emigration is chiefly directed. The first is north and east of the village of Minden, and includes the townships of Minden, Stanhope, Anson, Hindon and Glamorgan. The route is the Toronto and Nipissing Railway to Coboconk, 88 miles, and thence by stage 20 or 30 miles. The Toronto and Nipissing Railway is gradually extending northward and will soon reach these townships.

The other locality is north-east of Baysville, and includes the townships of Ridout and Franklin in Victoria County, and Sherbourne and McClintock in Peterborough County. The route is the Northern Railway from Toronto to Bracebridge, 120 miles, and thence on foot 10 miles to Baysville. The surrounding country is good and nearly all unsettled. An excellent belt of land stretches across the north of Ridout and Sherbourne. Some of it is not more than five miles from Baysville, and lies on or near the Colonization Road.

A writer in the Montreal *Witness* thus describes the soil and produce and the terms on which the land is granted.

The surface of the country in the Free Grant district is generally rough and hilly, but fully two-thirds of it is good arable land, rolling, but not so much so as seriously to interfere with tillage and the gathering of the crops, with some loose stone scattered over it, and timbered with hard wood and a few pines. The remaining one-third is rocky and broken, good for pasture and to leave for wood, as it is nearly as well timbered as the best. The soil is a clay loam, with some sand and gravel intermixed, and resting on a gravelly or clay subsoil. It dries and becomes fit to work very quickly after rain. Lime exists in very small quantities, if at all. The water is very pure and as soft as rainfall. The deficiency of lime would indicate that the growing of wheat could not be very extensively followed; excellent crops, however, both of winter and spring wheat, are grown, and a sample from Muskoka was awarded the first prize at the Ontario Provincial Fair in 1873. For oats, grasses and other crops useful for stock raising and dairying, the soil is equal to any in the Dominion. The climate is very healthy; ague and other malarious diseases are unknown. The length and temperature of winter are about the same as at Montreal. The cold is rather more severe than in Southern Ontario, but its steadiness and the protection of the forest render it much less disagreeable. Frost generally comes early in October; last fall on the 14th. All the fruits grown in Ontario, except peaches, will succeed there. I know of but one orchard in the district that has been planted long enough to bear, and that is doing well. The greatest depth of snow in winter is from two to four and a half feet. Drought is very rare.

The prices of produce depend on local demand, as the distance and the roughness of the roads render exportation impossible; but the influx of new settlers and lumbermen made a good market for all the surplus products of the country. Freight from Toronto to Baysville costs about $1 per cwt.

The settlement around Trading Lake will probably find an outlet within three or four years by the Toronto and Nipissing Railway, or by a railway connecting Ottawa with Parry Sound, which was surveyed last summer.

Every head of a family containing children under 18 years of age, may receive as a free grant 200 acres and an additional 100 acres for every child over that age. Every person of either sex, not the head of a family, is entitled to 100 acres. No one can purchase government land without having previously located a free grant, and no one can locate a free grant except on condition of becoming an actual settler within three or four years, and he must commence his improvements within one year after location. The settler should by all means avoid haste in the selection of his land. The transitions from smooth to rocky are so frequent and unexpected that he can never judge of the value of a lot by a partial examination.

The amount of money required by the settler depends on his previous habits and experience. A man of a family with from $200 to $400, and possessing a fair share of prudence and energy, could not fail to succeed. He will scarcely suffer greater hardships and privations even during the first three years than the majority of those in cities and towns who are dependent on their daily labor for subsistence.

We expect to resume the subject in future numbers, and give brief descriptions of such lands as may be open to settlers, with the soil and agricultural resources.

The Season and the Crops.

The winter wheat was much damaged by late frosts; about one-third of the plant was killed. Some few pieces have been plowed under, but the majority stand for a crop. The present prospects would cause us to expect a two-third crop. The spring has been very cold and backward; seeding on clay soils is very late, and this may shorten the crop, as it caused much to be sown in poor order. The peaches and grapes are injured; otherwise we believe the prospects are fair for a moderate crop of fruit.

THE first cheese market was held in Ingersoll on the 12th of May. A good number of cheeses were offered, considering the earliness of the holding of the market. No sales were effected, as the producers did not like to accept the reduced prices offered by dealers. Many dealers paid too much last year, and intend dealing more cautiously. The middlemen were the losers, and the farmers the gainers both in butter and cheese.

Stock Sales.

On the 17th inst., Seth Heacock, of Kettleby P. O., will offer for sale about 20 head of short-horns of Bates and Booth blood, comprising cows, heifers, bulls and calves. The above stock are well deserving the attention of intending purchasers.

LINCOLN SHEEP FOR JAPAN FROM CANADA.—Mr. R. Gibson, of London Township, sold twenty-four Lincoln sheep to Mr. R. B. Copren, the American gentleman who is engaged by the Japanese Government to impart agricultural knowledge to that country.

Messrs. Simon Beattie, W. M. Millar and Hon. M. H. Cochrane will hold a united sale of short-horns, horses, sheep and swine in Toronto, on Wednesday, June 16th. About 50 short-horns will be offered.

Hon. D. Christie will offer between 40 and 50 head of short-horns at public auction, on Wednesday, the 23rd of June.

The Messrs. Dawes, of Lachine, near Montreal, will offer for sale 35 head of Ayrshires, on Thursday, June 17th.

The Executor's Sale of stock of the late John Bellwood, of Willow Lodge, Newcastle, will take place on Thursday, the 17th of June. This sale will be without reserve. Thirty head of short-horns, Cotswold sheep, Berkshire swine and draught horses will be sold.

J. R. Martin, of Cayuga, on Thursday, June 3rd, will sell about 30 head of short-horns; also, Berkshires, Cotswolds, &c.

W. Douglas, of Seneca, has a sale of 40 short-horn cattle on Wednesday, the 2nd of June.

Agricultural Mutual Insurance Co.

This company, established in this city by Mr. Alex. McDonald as Manager, and Mr. C. Willson as President, has been a most beneficial institution for the farmers. The business has been conducted in the most honorable manner, plainly, openly and for the benefit of farmers. We feel quite safe in saying that this institution has saved the farmers of Canada hundreds of thousands of dollars. The benefits accruing from it, not only in the payments of losses sustained by fire (they have paid such honorably and promptly where incendiarism and dishonesty were not practiced), but great good has been done by this society in keeping down extortionate rates which would otherwise have been charged, as other companies have often tried to induce this Board to raise their rates to enable the profits to be increased.

The farmers have all the benefits in this company. The business is directed by farmers; no large salaries are paid; every one has to work for the pay he receives. Of course a great many are employed to attend to the business, as between 40,000, and 50,000 policies are in force, and these are distributed over the whole of Canada. The clerks are under the Board, which is composed of farmers; the Board have no profits from it except their pay for attending monthly meetings, which is only enough to defray their time and expenses. The travelling agents only get their small percentage, which is no more than sufficient to pay them.

Again, this company has in a great measure kept out many of the insurance companies whose sole interest is to make money for the stockholders.

From the economical way in which the Society is carried on, small salaries and no profits to be divided among shareholders, this company is able to insure at rates called impossible by competing rivals.

The business of the Company is scattered over the whole Dominion.

We say to our subscribers, if you have not joined a township insurance company and wish to insure your buildings, that we know of no better, safer or cheaper company to insure in than this one.

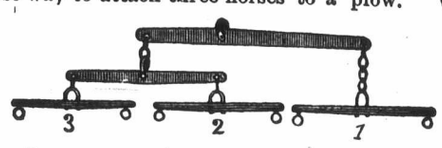
PRIZES.—When subscribers are entitled to a prize they should state so in their letters, and what prize they choose, otherwise no prizes are forwarded, as we cannot possibly be judges of subscribers' preferences.

GRANGES.—Several communications regarding the Granges and their operations have reluctantly been laid over till next issue, when we hope to give a review of the Order, which will embrace answers to our correspondents.

The Patrons of Husbandry hold a picnic at Port Stanley, on the 2nd of June. We believe the farmers of Middlesex also intend holding their annual picnic at the same place on the same day.

A meeting of the London Division Grange will be held on the day following, (June 3rd,) in Morrill Temple Rooms, London.

A subscriber asks us to give a description of the best way to attach three horses to a plow. We



give the accompanying cut as as good a guide as we know of.

We have much pleasure in thanking thousands of our subscribers for the prompt manner in which they have remitted their annual subscription, for their kind words of praise, and their many valuable suggestions. There are some—more we think than there should be—who are still in arrears. From these we will be delighted to receive a remittance as soon as possible. We are advocating the cash principle; our Granges are doing the same, and we depend on our subscribers to carry out the principles advocated.

Subscribers who wish to discontinue will oblige us exceedingly by remitting arrears and giving us the proper notice.

The Apiary.

A. C. ATWOOD - - EDITOR.

Questions About Bee-Keeping.

A reader of the *Witness* requests us to publish the recent meeting of the North-eastern Bee-Keeper's Association at Utica, N. Y., as follows:

The *Herald* of that city says one of the most interesting exercises of the convention was the "question drawer," which was expounded by Mr. Van Deuzen, with the aid of Capt. Hetherington and Mr. L. C. Root. These questions and replies are of such particular value to the bee-keeper that we print this part of the proceedings *verbatim*.

Question. Is there any profit in buckwheat flour? Answer. Yes.

Q. Can broods be raised successfully in March and April? A. It is best to have no brood started until the weather is sufficiently warm and settled to enable them to start a full brood. The presence of a sufficient amount of pollen must be assured.

Q. What effect has the shape and size of the hive on freezing or on the amount of honey stored? A. Very little, provided they have plenty of accessible room and the proper temperature is maintained in the hive.

Q. The best mode of caring for bees after they are sent out in spring and before the honey harvest? A. Feed and keep warm.

Q. Will bees store enough more honey in boxes with communications from box to box to pay the extra trouble, than to have the boxes separate? A. Yes, in small boxes, but not in large.

Q. How many swarms should be kept in one yard? A. This depends upon the quantity of honey-producing plants; from fifty to a hundred swarms.

Q. What is the best size of the brood department? A. Let it vary according to the quantity of bees.

Q. About what amount of honey is sold in New York city, yearly? A. About 400,000 pounds.

Q. What is the most suitable package to put extracted honey in for market? A. This depends upon the market in which it is to be sold. In some cases it sells best in bulk or by the pound net weight; in other cases in glass jars.

Q. What is the proper thickness for a single box? A. Two to two and a fourth inches.

Q. How near to the ground ought hives to be placed during the summer? A. Four or five inches.

Q. Will using the extractor on comb containing eggs and larvæ produce any injury; if so, at what time most? A. There is no injury, unless larvæ are thrown from their cells by too rapid motion.

Q. Is it advizable to undertake to Italianize your apiary when you are surrounded by black bees? A. It certainly is, if in a locality that produces much white honey.

Q. How long from the time the egg is deposited in a worker cell before it cannot be changed to a queen cell? A. Would not use it older than the third day after hatching.

Q. If a queen's wing is clipped about half off by a trusty, experienced hand, is there any injury; if any, what, and in what way? A. There is no injury.

Q. Making an examination of my stocks in January, I found some stocks from which the honey was leaking. What is the reason? A. This condition is found only in hives that have been so exposed to the cold as to crack the combs with frost, or in hives that are so poorly ventilated as to retain the moisture and sour the honey.

IN swarming, the queen is not always foremost; it is frequently, or rather generally, not till after the departure of a considerable number of workers that she makes her appearance; and when she does come, it is with a timid, irresolute air, as if she were borne along, almost against her will, by the torrent that streams out of the hive—for she often turns on the threshold, as about to re-enter, and in fact frequently does so, but cannot long resist the opposing crowd.—*Feburier.*

BEE STINGS.—If a person is stung while among bees he rarely escapes with one sting. The first sting is but the signal for attack. It does not remain a personal matter between the offending party and any particular bee; the whole community are "eager for the fray." This general attack, if any, is variously accounted for. Some assert that a person who is not scared while among bees is not likely to be stung at all by them; that fright provokes stinging, and that even one sting from some offended bee producing fright, other members of the hive sting because he is frightened. A celebrated bee-keeper, who has closely observed the character of the bees, declares that when one of the hive has deposited his sting the rest, smelling the poison of the sting, go and follow suit, prompted by some mysterious concert of action, without regard to the offence of party or the frightened state.

EXPERIMENTING TO SOME PURPOSE.—G. W. Lloyd, the architect, desired some fire-proof brick the other day for the floor of a new barn, but when he learned the cost per thousand he determined to experiment a little with some common brick. He procured a few hundred and had them delivered on the vacant lot on Michigan Avenue, between Third and Fourth Streets, where they were placed in a large vat, such as the pavers use in which to heat their tar, and allowed to absorb the hot tar for four hours. In that length of time the bricks were as black as the tar itself, and soaked full of it, and when allowed to cool off it was found that their solidity had been greatly increased. A reporter of the *Free Press* struck one of the bricks eight or ten hard blows before he could even break a piece off, and to strike one with a hammer is like striking a rock. Subjected to the same tests as the regular fire-proof bricks, the tar-soaked brick came out finely. To determine their fire-proof qualities, a number of the bricks were passed into a blazing furnace, and, after a severe test, they came out without a flaw or a crack; in fact, they were rendered stronger and tougher for the baking, and it was almost impossible to break one. Mr. Lloyd will use the brick thus prepared for the stables, and will then, if the Council grants permission, lay enough of them at some prominent crossing to test their merits for street paving.

Notes of the Garden and Farm.

ORIGINAL AND SELECTED.

MULCHING.—The past winter has removed, every doubt, if any such had still existed, of the necessity of mulching in the fall all lately planted trees. Wherever this most important work was neglected, the trees have invariably perished. We have ourselves experienced the advantages of mulching. The mulching we have used for some years for fruit trees and all trees not more than a year planted, we can recommend to others. It has never failed us. Cover the surface round each tree with a sod, the grass turned under. In the fall we invariably pursue this method. In the fall of 1874 we mulched fruit and shade trees of twenty different varieties, and now, after the winter, one of continuous severity for an unusually long period, not one tree has been frost-killed or frost-injured. The mulching I fork into the ground in the spring. Strawberries covered with leaves of trees have come out all right.

ZIZANIA AQUATICA, known in this country as Canada Rice, is coming into use for the making of paper. It grows in vast quantities on the shores of Lakes Erie, Ontario, St. Clair and others. From the great quantity grown on Rice Lake the lake has got its name. It is said that a supply of 100,000 tons annually can be obtained from these sources. The grain is largely used for food by the Indians, and in flavor is superior to most other cereals. It grows in shallow streams, swamps and ponds, where it attains a heighth of 7 to 8, and even sometimes of 12 to 14 feet.

THE *Mark Lane Express* speaks in this wise of farm-yard manure:—"Year by year we are more than ever convinced of the superiority of farm-yard dung to any other manure for grass land.—Guano, bone-dust, nitrate of soda and other similar fertilizers sometimes produce very valuable results, but they also often fail in consequence either of unfavorable weather after they have been sown, or from their not being adapted to the soil, or from some other circumstances, whilst on the other hand we never knew an instance where the first named had not a perceptibly good effect. We wish more care were taken with the manure heap."

A GOOD YIELD OF OATS.—The harvest of 1874 was noted for the large yield of oats, in the north of Britain especially. Its average weight was 41 to 43 pounds per bushel. One of the best returns of which we heard was 11 quarters, 6 bushels, the produce of an acre and a half (Scotch m.,) and this though the crop, before being cut, appeared to contain a large portion of green stalks.

THE TOAD.—The *American Garden*, or its editor, at least, has a lingering fondness for the toad, and this is the way he talks about him: The toad—almost universally despised and upbraided for his ugliness—is, yet, a useful, good-natured, quiet fellow, who recognizes his friends and those who are kind to him. We have some half dozen of them in our small garden, and among them one old patriarch who, when we are digging or hoeing, will sit winking and blinking at us with his pretty eyes, and often compel us to lift or drive him aside to get him out of harm's way. He will stay by us for hours, evidently feeling that he need fear no hurt. Like the sparrow, the toad has been considered a nuisance, and in some sections exterminated; but the exterminators have been only too glad, afterwards, to get him back by the expenditure of large sums of money. So useful are toads in gardens that they are sold in France by the dozen, for the purpose of stocking gardens to free them from many injurious insects. The toad lives almost entirely on winged insects, and never does harm to the plant.

CLOVER TURNED UNDER.—Mr. J. Gregory, a few years ago, moved from Tennessee and bought a plantation in Murray county, Georgia. The land at the time he purchased it, with a good season, would produce ten bushels of wheat per acre. In October Mr. Gregory sowed broadcast fifteen acres of white Boughton wheat, one bushel to the acre, and in February following he sowed the same ground in red clover, sowing broadcast in two ways, one bushel to eight acres. He harvested ten bushels of wheat per acre, and cut a fine crop of hay the same season. The next year he mowed two crops of good clover hay, averaging two tons per acre. The third crop grew up from four to eight inches high, and in October he plowed the clover under, plowing deep and subsoiling; sowed one bushel of white Boughton wheat per acre. The result was an average of thirty and one-half bushels of choice wheat per acre. Thus, you will see, that the only manure used to improve the land and get thirty and one-half bushels of wheat where he could only raise ten, was to plow under deep a good crop of clover and subsoil. *Rural Southland.*

DAIRY PRODUCTS FOR NEW YORK.—From an article on the subject, in the *Tribune*, we learn that during the season the New York and Oswego Railroad ran one train per week loaded with butter and cheese, besides a few cars daily on other trains; 300,000 pounds of cheese and 200,000 pounds of butter were the load on that train. About 150,000 pounds of butter were daily received from Chicago and the far west, by way of the Pittsburgh and Western Railway refrigerator cars. By way of the Erie Railway, forty cheese cars and seven to ten butter cars were received daily, carrying about 1,000,000 pounds of cheese and 200,000 pounds of butter. The Delaware, Lackawana and Western Railroad brought in daily about 15,000 pounds of butter from Sussex County, N. J. Nearly all that came by the three first mentioned routes was consigned to wholesale and commission dealers, while that from New Jersey, and large quantities from Northern New York and the upriver counties, went, much of it, into the hands of small traders and retailers. It was found impossible to ascertain, even approximately, the amount of butter and cheese that went directly to consumers or to the small retailers. Large quantities are sold in New York for export, but where it all comes from was not ascertained. None of the butter exported was "extra," the consumptive demand of the city absorbing all the extra butter received.—*Country Gentleman.*

Agricultural.

Farming in Wales—A Good Example.

From the Mark Lane *Express* we copy the following sketch of the farm of Major Hughes, of Ystrad, Wales, who was awarded the silver medal offered by the Agricultural Society.

"The farm of Major Hughes, of Ystrad, is fast becoming a model farm, and after a more practical manner than attaches to most of those which go by this name. There is some extra expense incurred for appearance sake in the buildings near the hall, but the profit and loss sheet is evidently kept well under eye. The farm is a light dry soil, and consists of 343 acres, divided into thirteen fields. 88 acres were in wheat, 33 oats, 25 turnips, 12 mangold wurzel, 2 cabbages, 2 vetches, 30 mowing, 95 clover, and 40 grass, pastured with cattle and sheep. All the crops were remarkably good except the turnips, which had utterly failed through the dry weather, but had been re-sown and were now making a fair start. The stock consisted of 9 farm horses, 24 dairy cows, 40 heifers and bullocks, and 24 calves. The milk of the cows is churned by steam power and made into butter, and from 24 to 30 calves are annually reared on the farm. The sheep flock consists of 250 breeding ewes, supplemented by about 200 wethers, bought in the autumn and sold out in the following spring, 6 breeding sows and about 30 store pigs. House feeding is largely followed with the horned stock. All clover and vetches used green are passed through the chaff-cutter and mixed with brewer's grains, bean meal, oilcake, &c. No hay or straw sold. This system yields a large quantity of manure, and places it where it can be most economically and advantageously dealt with. All the field labor, both team work and manual, is done by the piece, and a bonus is given for success in rearing lambs, poultry, &c. This system is worthy of more thought from farmers than it yet obtains. Wherever it can be applied it must be the fairest way of rewarding skill and industry in the laborer, and of stimulating and sustaining him in his efforts to rise both socially and morally, and by adopting it the farmer must get equal value in labor for his wages; and have his work done more quickly and equally well with proper supervision. Major Hughes says the plan works admirably, but he combines the practical with the theoretical on his farm more than most men, and carries out his plans with all the system and discipline of a soldier. His farming must have a beneficial influence in the neighborhood, in showing both what can be done and how to do it.

Beet Root Sugar Culture.

Our correspondent who asks us to give in the FARMER'S ADVOCATE some information respecting the sugar beet and beet root sugar, will see in the following extract a succinct article on the subject. The sugar, even for stock feeding, is a most profitable crop. It is not exhaustive, as it absorbs a portion of its nourishment from the atmosphere with its broad and very porous leaves, and does not feed, unless when quite young, on the rich surface soil, but sends its long top roots down to a good depth for its mineral food.

The seed, after being soaked in water, is planted by hand or machine, using from 15 pounds to 17 pounds per acre. If planted by hand, the seeds are placed 14 inches apart, and if by machine, 8 inches apart, in rows 20 inches apart. In the latter case 28,500 to 30,000 plants could be raised to the acre. A large space around each plant favors the development of the roots, and is not desirable, for large beets are watery. As soon as the roots have attained a length of from three to four inches, the process of thinning out commences. The soil around the young plant is frequently loosened and the roots kept carefully covered, until the leaves have acquired their proper development in June. There are three distinct periods in the growth of the beet, viz.: the development of the leaves, which closes usually in the first half of June; the formation of the roots, which is accomplished by the middle of September or first part of October; and the production of the seeds, which takes place in the second year. When the outer leaves turn yellow and dry, which in different seasons and localities may vary from the early part of September to the first of October, the harvesting of the sugar beet root commences. The amount of sugar in the sugar beet is largest when the root has just attained its ripeness, as subsequently it diminishes gradually, in consequence of advancing growth. The manufacture of sugar begins usually in the latter part of September, and the beet roots are carried daily from the fields in such quantities as the factory can dispose of. As soon as frost becomes imminent, all the roots are gathered. After the removal of the leaves they are buried in pits without loss of time.

We now come to the question of profits. From Great Britain only an isolated case is furnished. A beet root sugar manufacturer started a factory at a cost of £10,845. The total expenses per annum were estimated at £13,980; the receipts, £20,480. The profits had, at the time of publication, been £6,490, or 27.75 per cent. on the first outlay; 6.5 per cent. of crystallized sugar had been the result; had it been 8 per cent. of sugar, the profit would have been 48 per cent. This is a proof of success. In Germany they get 8 per cent. of crystallized sugar, or 1,520 to 2,270 pounds of sugar per acre. The expense is from $132 to $133, of which the Government takes, in the form of taxes, $45 to $46. In France the average expense per acre is $161 to $162, of which the Government draws for taxes, $50 to $75. The leaves are used for fodder and manure. For the former they are salted down in pits, as in their fresh state they can be fed in small quantities only. The value of this preserved leaf mass per acre is estimated at $6.35, with hay at 100 pounds to the dollar.

From experience in France and Germany, it appears that by proper rotation of crops sugar can be raised on the same lands continuously without reducing their value, and also that the introduction of their culture has acted beneficially upon farming generally. The following may be reckoned the value of the various products of an acre of sugar beets: Sugar, 1,500 lbs, at 7c., $105; molasses, $2.90; press cakes, $13.60; preserved leaf mass, $6.30; manure (about two tons), $3.50. Every cent of increase in the price of sugar would be equal to $15 additional profit per acre, and every half. per cent. increase in the crystallized sugar from every 100 pounds of beet root worked, would add 115 pounds of sugar to the yield, or $8 additional profit per acre.—*Condensed from The Grocer.*

The Best Soil for Potatoes.

Years ago, when the old-fashioned Mercer or Neshannock was the leading market potato, farmers learned that this variety did best on sandy or light gravelly soils. From this fact originated the idea that sand was adapted to potatoes, and the theory was not dispelled when the Peachblow superseded the Mercer. For years the great bulk of potatoes for market was grown on sandy soil. Many city people would not buy potatoes on heavy soil, and I have known farmers on such land to

not grow enough for their own use, and buy a supply of potatoes in the fall. On the same farms within two or three years, thousands of excellent potatoes, equal or superior to any grown on sand, have been produced. We no longer hear anything about the superiority of potatoes on sandy soil, and were I buying for my own use, I should prefer those from rather a heavy loam, not wet, but naturally or artificially drained. This change in popular taste is not a mere freak of fashion, but is founded on substantial reason.

It is a curious fact that varieties of potatoes now most largely grown are the best quality and usually the best yield on heavy soil. This is especially true of the Peerless, which on sand is poor and watery, while it reaches its best quality on a moderately rich loam. For Early Rose the soil cannot well be too rich, but it can for Peerless or Late Rose, or Peachblow. If heavily manured, Peachblows are apt to rot, especially if the season be wet. If my observation of the poor quality of Peerless on sandy ground be correct, what is the cause? May it not be the lack of mineral elements, especially of potash, in which sandy soils are apt to be deficient? Much of our sandy soil is considerably "run" by successive potato crops, and this inferior quality of such potatoes may be due to the absence of potash in the soil. I should like a careful chemical analysis of different qualities of potatoes to show what poor "watery" roots are deficient in. I have heard that potato rot has been arrested sometimes by applications of lime of potash or of gypsum, which last is lime in another form.

If these theories as to the possible cause of potato rot be correct, we ought to be able to control it by increasing the proportion of mineral manures and decreasing those from the barn-yard. Fermenting stable manure causes a watery succulent growth, especially in warm and wet seasons, and if there be a deficiency of any mineral element the quality and healthfulness of the crop is affected. Those varieties which have small tops are less liable to injury than those of coarser growth, for I do not suppose that a good Early Rose has any more potash or lime than a good Peachblow or a good Peerless. The difference in quality seems to result quite as much from the soil as from the variety, and different varieties seem to be adapted to different soils. Is this the result of their origin, or has that anything to do with it? Can we adapt varieties to soils by originating them there? These queries suggest some interesting and possibly profitable experiments.—*W. J. F., in N. Y. Times.*

Preparing Seed Potatoes.

Among the multitude of questions that have puzzled the heads of farmers ever since the time when man was commanded to earn his bread by the sweat of his face, it does seem as if there might be a few questions which would some day be settled, so that this endless discussion might cease. "Deep or shallow ploughing," "spreading manure on the surface, or turning it under," "churning milk or cream," "feeding meal raw and cooked, and wet or dry," "cutting hay early or late, and curing it fast or slow," and many others, it would seem, ought to be settled so they would *stay* settled; but there are other questions which are affected so much by the circumstances connected with them that it hardly seems probable that fixed rules can ever be invariably brought to bear upon them. One of these is the question of planting potatoes whole or cut. Our own practice has been to select from the main crop enough seed potatoes for the next year's planting, of the very largest and smoothest that could be found. These are cut into pieces containing one or two eyes and are planted in drills, one piece in a place, some twelve to fifteen inches apart. The only variety we grow is the Early Rose, except a few new kinds every year for trial. We have planted small seed of late varieties, both whole and cut, with good success, but with early kinds we much prefer to have a large piece of potato with one eye, than a small piece with many eyes. The large pieces furnish abundant food for the sprout when it first starts, and it comes up strong and vigorous, while the small seed, whether whole or cut, furnishes so little strength to the sprouts that they get well on towards maturity before they become large enough to feed from the soil and the fertilizers contained in it. If the variety were of late kinds, this circumstance would have less influence on the crop, as the late potatoes grow a long time before they begin to form new potatoes, and the plants have plenty of time to gain strength of vine before the tubers form, while, in the case of the early sorts, it is "now or never."

Mr. D. A. Compton, in his prize essay on the culture of the potato, recommended cutting the seed into pieces of one or two eyes, but in an article lately published in the N. Y. *Tribune*, he says he has been led to modify the views he formerly expressed. With rare varieties, and in moist seasons, he says, "cutting to single eyes is certainly advisable, but in dry springs I am confident we greatly injure the main crop by cutting the seed too small, or by cutting it at all. In the spring of '74, after the seed had been taken to the field, I cut enough to plant two rows through the centre of the lot; being pressed for time, the rest were planted whole, one medium sized tuber in each hill. Soon after planting, the ground became very dry, and continued so a long time. The cut seed suffered greatly, growing very slowly, while the uncut seed made commendable progress. At the final cultivation there was ten inches difference in the vines in favor of uncut seed, and a great difference remained throughout the season; so much in fact that no one would have supposed both were of one variety. Digging showed a still greater difference in favor of the uncut seed, the tubers of which were at least twice as numerous and of better size. The difference in yield compensated many times over the difference in cost of seed. Had the season been moist, the result would doubtless have been otherwise. But as drought has become the rule, rather than the exception, our only hope, where we cannot irrigate, is to cultivate very deeply, fertilize thoroughly, and plant as if drought were inevitable. Within the last two years more than one cultivator has been forced to the conclusion that one acre which can be easily irrigated is worth several that cannot be."

In the same paper, Dr. Hexamer gives a carefully prepared table, showing the results of several experiments with potatoes, cut and uncut, as follows:

Mode of preparing Seed for experiments—1867.	*Total per acre — bushels*	*Bushels large potatoes, per acre.*	*Bushels small potatoes per acre.*	*Per cent. of large potatoes*	*Per cent. of small potatoes*
One large whole potato	114	87	27	76½	23½
Two large half potatoes, cut lengthwise	106	79	27	74½	25½
One seed-end of large potato	106	73	33	69	31
One large half potato, cut lengthwise	101	75	26	74	26
One large potato, seed-end cut off	100	67	33	67	33
One stem-end of large potato	99	67	32	67⅔	32⅓
Two small whole potatoes	87	60	27	60	31
Two pieces with one eye each	71	47	24	66	34
One piece with four eyes	70	50	20	71½	28½
One piece with three eyes	70	50	20	71½	28½
One whole medium-sized potato	67	47	20	70	30
One piece with two eyes	61	47	17	73	27
One-half medium-sized potato	60	43	17	71⅔	28⅓
One whole small potato	53	33	20	62	38
One piece with one eye	45	33	12	73	27
One-half small potato	33	19	14	58	42
Field crop	95	64	31	67½	32½

It appears that large whole potatoes gave the greatest yield, and very small ones and single eyes the least. It does not follow from this, however, that the planting of large, whole tubers is the most profitable practice. The yield given in the table as "field crop" is from a mixture of whole small potatoes, about the size of a walnut, with medium-sized tubers cut lengthwise, and large ones cut in four pieces, one piece to a hill. The planting of one acre with such sets requires about four barrels of marketable potatoes, while of tubers, such as were used in the first experiment, twenty barrels of the very choicest potatoes, worth nearly double the price of those planted for field crop, are needed. Now, if we deduct the number of barrels and value of seed used in both cases, we find that the balance is in favor of the "field crop." It is the mode of planting in common use by farmers, and proves the correctness of a practice sanctioned by long experience.

Our own experiments confirm the conclusion arrived at by Dr. Hexamer, which is, cut potatoes require better care while planting than whole seed; that, under every favorable circumstance, a much greater increase can be expected from seed cut very fine, but that such fine pieces must be protected from drying and rotting, or the result will be very unsatisfactory.—*N. E. Farmer.*

The Lillooet correspondent of the *Mainland Guardian* writes:—British Columbia's capabilities as an agricultural country would surprise most men in the Eastern Provinces if they could but see the immense crops of fruit, roots and cereals raised here, on land cropped for a number of years without manure, and worked in the roughest manner. Comparatively speaking, one acre of agricultural land here will produce as much as two acres in Prince Edward Island or Nova Scotia. I have seen 1½ tons of wheat on an average to the acre, over 10½ tons of potatoes to the acre, and onions such as I never saw raised anywhere else. I have seen large onions raised in New Zealand, but they could not compare with these raised by Lorenzo of the Fountain Farm. He has raised onions weighing 2 lbs., he can select a ton averaging 1 lb. each; from a 2 oz. potato, Early Rose kind, he cut 12 eyes and planted them, and from those 2 ozs. he took 121 lbs., some weighing 3 lbs., and a number 2½ lbs. R. Hoey raised 140 tons of potatoes; James Dickey 150 tons. This portion of the Lillooet district is blessed with plenty and to spare; but no market. If the Barrard Inlet trail had been finished in the time it should have been, our farmers would have been packing produce to the coast, and without doubt found a remunerative market, and returned with winter supplies purchased at a much less cost than they can get them at Lillooet.

Cultivation of a Farm of Poor Sandy Soil.

An extract form the *London Agricultural Gazette* of the Report of Royal Agricultural Society, of the Maulden farm—487 acres of light sandy soil.

"On the successful cultivation of the green crop the status of the farm depends even more than on that of its wheat or barley, whether the interest of the landlord, of the tenant or the laborer be considered. The permanent fertility of the land, the profit of the field, and the labor in which, according to the wise man, so much profit lies, all hinge more on the extent and excellence of the green crop than on any other single feature of the farm." On the Maulden farm were 70 or 80 acre of kohl rabi, a clean and even crop of some twenty imperial tons to the acre:—

The great average crops must be put down to good management in the case of Maulden, and not to the original fertility of the soil, which is naturally a poor sand and hot gravel. No doubt the question of agricultural merit is difficult to solve when it lies between the skill which by labor and good management make a difficult but naturally well stored soil produces its utmost, and the enterprise and confidence which makes a poor but easy soil produce far beyond its utmost; and those who undertake the office of judge ought to have every opportunity that can be given them of guiding their decision. Here it is not by artificial manuring so much as by large consumption of purchased food that artificial fertility is the best conferred. No artificial manure is so complete as that which is produced by the consumption of farm produce. It is when the storehouse of the soil is already pretty full that a phosphate or a nitrate will make the best return—the added ingredient then bringing into active use fertilizing matter, which, without it, would have remained effete and useless. When the other ingredients of the complete plant food are not naturally present, the artificial addition of one or two is insufficent, and remains without result. In the case of a poor sandy soil like that of Maulden Farm, it is therefore better policy to enrich the home made dung by added cattle food than by a heavy bill for superphosphates or ammonia salts or nitrates. Mr. Street has found this out, and while his annual manure bill does not exceed £50, paid for superphosphates for his green crops, the 'artificial' food which he consumes, his cake bill, and the beans and peas of his own growth which he consumes, amount to at least £100 per annum. The 2,000 loads of farm manure and earth which he annually applies are thus highly enriched, and applied almost wholly to the green crop quarter. They go to maintain the production of that cattle food, on the after use of which the fertility of the farm is thus made almost wholly to depend. "Of the green crop quarter, after wheat there are a few acres in rye and tares to be plowed up in May and June for transplanted kohl rabi; and there are a few acres in mangel wurzel every year for the latest spring keep before the rye and tares are ready. The kohl rabi, which is the main and almost only green crop, is, however, generally sown, pretty much as an early Swede crop would be sown, at intervals all through the month of May, two or three pounds of seed per acre being drilled in rows 22 inches apart, on land which has received a heavy dressing of well-made manure. The rye and tares, white clover, and pasture fields, with a certain extent of cabbages to eke them out in drought, the clover stubble, a few early turnips, the kohl rabi and the mangel wurzel, are the suc-

cession which keep cows and sheep breeding and fatting stock, throughout the year. About two-thirds of the barley crop—Hallett's Pedigree barley is the sort adopted—are sown down with broad clover or with Dutch, and one-third of barley stubble is plowed up for winter beans or peas. The whole of this is followed by wheat—Banham's Browick Red is the only kind sown—a portion of the quarter, whatever needs it most, receiving a half-dressing of farm manure. After the wheat again come rye and tares. Tares are preferred, except when very dear, as catch crops, to be followed by kohl rabi, which, from being the rarity we once knew, for experimental use upon little more than garden scale, here usurps the office of providing the whole winter feed of the flock and herd—justifying the confidence thus placed in it especially in a dry season such as the past, when Swedes and turnips have generally failed."

Associated Experiments.

It is about time that our agricultural societies lifted themselves out of the grooves in which they have been running for thirty years, and struck out into new, and at this stage of agricultural progress, more varied and profitable fields. To simply hold an exhibition of fat, fine and fancy cattle, horses, hogs and sheep, of acres of implements without trial in the field, of mammoth vegetables, of dairy products, and the whole catalogue that goes to make up the American "Fair," should not be the entire aim and object of our agricultural boards, state district, county or township. These fairs are well enough in their way; have done an immense amount of good, and we would be the last to say aught derogatory to them.

It is time that American farming should crystallize into something like an exact science. It is about as far removed from that now as it was fifty years ago. Every man is experimenting on his own hook, very properly, of course, but there is no concentration of effort to demonstrate which of the many different practices with the same crops, in the same neighborhood, is the better; that is, the most profitable. It seems certain that in agriculture, except in a very general way, nothing but local experiments can be really valuable. Beyond the differences above mentioned, are drouths, rains, winds, storms and frosts that the farmer must contend against and which may destroy the entire value of his experiments. Of course these latter prevail against associated experiments as well, but it is a fact, that to local associated effort we must come at last to settle the thousand and one questions that crop up out of the farmer's vocation, and which, if rightly followed up, must make of him the most accurate, thoughtful, intelligent, useful and capable of citizens.

Is not here a sphere in which our agricultural societies may very properly and beneficially act? Our English friends—or cousins, perhaps we should call them—are at work in this direction, and they also do another thing that we may very wisely adopt, that is, to occasionally call the members of these societies together for the reading of essays, and for discussions. But in the line of experimenting, the work looks the more hopeful. At the late meeting of the Society of Arts, in London, Prof. Wrightson read an excellent paper on the subject of Agricultural Experiments, and gave the following as the system that had been adopted at Cirencester by the Chamber of Agriculture:

"We commenced in 1868 by forming an experimental sub-committee of the Cirencester Chamber of Agriculture, and our first results were communicated by me to the Journal of the Royal Agricultural Society, in the volume for 1870. It was not, however, until the years 1873-4 that the scheme became in any sense mature, and there is still abundant room for both improvement and extension. The plan which we adopt is as follows: The committee meet and decide upon the course of experiments to be tried. A circular is then sent to each member of the chamber, embodying the recommendations of the committee, and asking for the co-operation of the members in carrying them out.

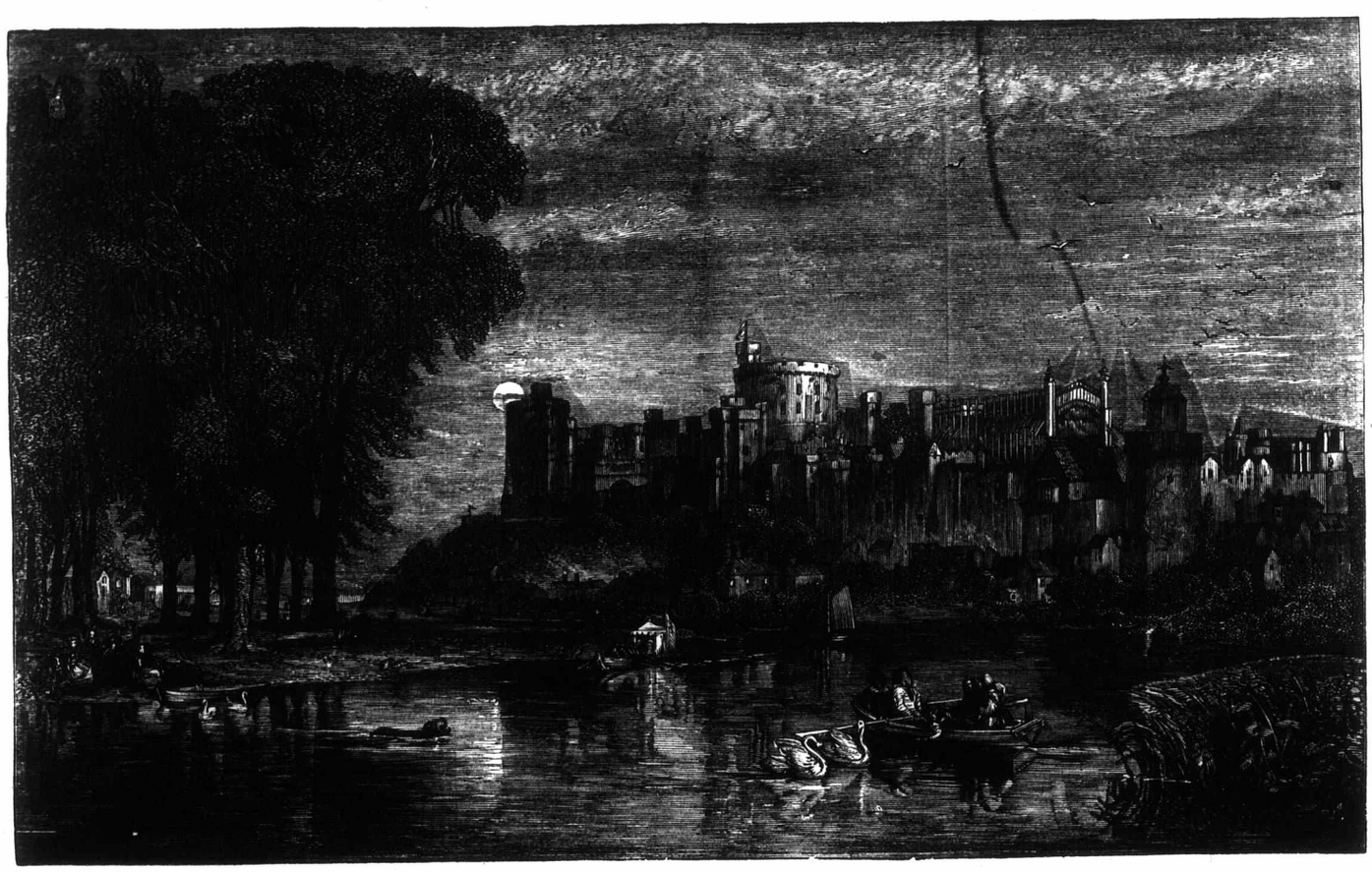
* * * * *

"It is of the utmost importance that uniformity of treatment should be secured throughout, and, with that end in view, we undertake the whole work of laying out the experimental plots, sowing the seed, and manuring the land. We also, in the autumn, weigh the crops on every plot, and all results are forwarded to me, in order that they may be tabulated and compared. For these purposes, an intelligent man, capable of measuring out plots, and undertaking the work of manuring and weighing, is required, and this is one of the most serious expenses to be incurred. In our case, this man is in constant ordinary employment upon the college farm, and we only pay him for the time during which we employ him.

"When all the farms have been visited and sown, our work is finished, until November and December, when a post-card, with a notice, is once more sent round, of the day fixed for weighing, and, this accomplished, tabulating and drawing up of the report concludes our labors. In all our experiments, we steadily keep in view the two principles of repetition and control. Repetition is secured first by insisting upon duplicate plots being always provided in each series—a most necessary precaution—and, secondly, by trying the same series on a number of farms, and through a succession of seasons, an immense mass of confirmatory evidence is educed. In the same manner, control is insured, as the experiments upon various farms bring our results which vary considerably, and save us from rushing to hasty conclusions."

Now what we want, here, is a generally adopted system, on a similar basis. We suggest it as the work of our local agricultural boards and societies, in connection with the state boards. Our agricultural colleges are doing something in this direction, and may easily do much more, but they are far apart, and their experiments will have little in common; they will at best amount to but lacal helps.

If the agricultural societies cannot do this, then, cannot the Granges find it more profitable to turn aside from many of the Utopian commercial schemes, and do a great and lasting work for the cause of agriculture.—*Prairie Farmer.*



VIEW OF WINDSOR CASTLE FROM THE ETON SIDE OF THE RIVER THAMES.

Windsor Castle

This engraving represents a summer evening scene at Windsor Castle—the home of Her Most Gracious Majesty Queen Victoria. The view is taken from the Eton side of the Thames, at a point selected by "our artist" (during his recent visit to the Old World) as presenting the most attractive combination of the royal edifice, water and stately trees. And well has he succeeded in giving us a magnificent picture—and one so rich in historical and poetical interest. Windsor Castle is associated with many interesting events in the history of England, and is a place which the majority of tourists who visit England desire to see. Few sovereigns will ever occupy this regal residence who will command the heart-felt attachment of the people to the extent that the present one has done. The high destiny that she has been called to, she fills with credit to herself and honor to the nation—a nation that now includes within its purlieu a greater number of souls than that governed by any potentate or ruler in the world. That she may long be spared to preside over the British Dominions, is the sincere prayer of millions of subjects of that kingdom upon which the sun never sets.

The Centennial Exhibition

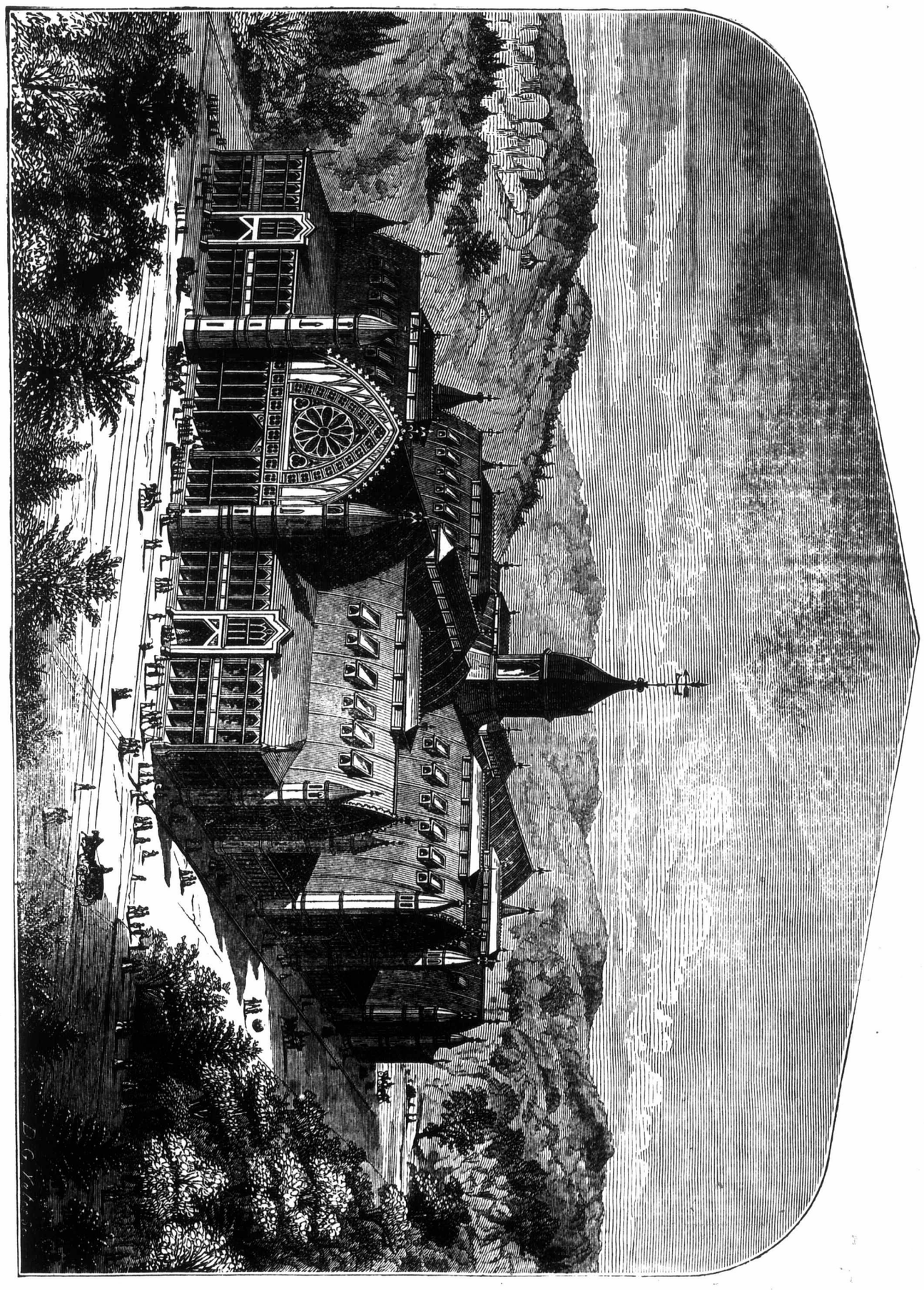
We are able to present to our readers the engraving of the Agricultural Hall designed for the Centennial Exhibition to be held during the summer and autumn months of 1876, in Philadelphia. The Centennial Commission is busily engaged in providing for the reception and display of Agricultural Machinery and Implements.

The natural resources, wealth, skill, and industry of the country will, it is expected, be fully represented. The Agricultural Hall, of itself, covers not less than ten acres, and of this imposing structure a section will be set apart for the exhibition of farm appliances. Within it will be steam power, and all necessary applhances for driving machinery, such as threshers, fanning mills, sugar presse, &c.

It is contemplated to test in the field plows for animal and steam power, reapers, mowers, tedders and hay-rakes. Manufacturers designing to compete in the field will be required to use the same machines as they offer on exhibition.

We hope Canada will be well represented. The natural wealth of our country in the products of her woods, mines, min rals, fisheries and soil, may hold no inferior pla e in the International Exhibition. In the honorable trial she will prove a formidable competitor with her republican neighbor, and in many branches of manufacturing industry

THE CENTENNIAL EXHIBITION TO BE HELD AT PHILADELPHIA DURING THE SUMMER AND AUTUMN OF 1876.



AGRICULTURAL HALL.

Its materials are wood and glass, consisting of long nave crossed by three transepts, both nave and transepts being composed of Howe truss arches of a Gothic form. The nave is 820 ft. long, 125 ft. wide, with a height of 75 ft. from floor to point of arch. Central transept is same height, 100 ft. wide, the two end transepts 70 ft. high and 50 ft. wide. The building covers 10 acres.

she will prove no laggard. It is to be hoped our Government will do as other Governments are doing—use every effort to have the Dominion represented as becomes the inheritors of a fair domain and the scions of the Island Empire.

The Horse.

Breeding Farms — Location and Extent.

The late Sir Tatton Sykes, no less than the present Duke of Beaufort and Sir Joseph Hawley have always held that wherever the elm tree grows thickly and vigorously, a good site for a horse-breeding farm or station is to be found. It is notorious that elms thrive best in a limestone soil, inasmuch as animals which are fed upon grass and drink water impregnated with lime have larger and stronger bones than those raised upon clay or sand; it is not difficult to understand the partiality expressed by three experienced breeders for meadows in which the umbrageous tree abounds.

But there was once an eminent sporting writer in Yorkshire whose *nom de plume* was "Martingale," and who went so far as to maintain that the wild flowers in the hedges ought to be closely scanned before the fortunes of a stud farm were to be localized upon some given spot. That such things as site, the lie of the land, the exposure to the morning, mid-day or afternoon sun, the chemical analysis of the water, the density of the herbage, and many other points count for not a little in assigning to the breeder of thoroughbreds either success or failure, will at once be apparent to those who remark that upon some farms, carrying but few head of stock, more good race horses are born than upon others which have ten times the number of brood mares. But, in addition to a close investigation of the natural peculiarities that his stud farm presents, a breeder has much to learn about judicious handling of his foals when they are weaned from their dams, and of his yearlings before they are brought to the hammer or sent into training.

We have lately had occasion in these columns to express our conviction that the French system of horse-racing is better adapted than the English for developing stamina in the noble animal. Not without some degree of humiliation do we now find ourselves compelled to confess that our neighbors across the Channel understand the treatment of thoroughbred yearlings better than ourselves, and that Yorkshire, "the cradle of the British thoroughbred," might go to school in Normandy, with a view to learning how it is that the French raise finer colts and fillies year after year; and why, during the last decade, the best three-year old on either side of the Channel has for four, if not for five years been a Gallic champion.

Furthermore, it is extremely rare for the equine youngsters of our neighbors to become mulish or vicious; and it has been commonly remarked at Newmarket during the last half dozen years that Count Lagrange's horses are always thoroughly broken and conspicuous for what jockeys call "good manners at the post." Nor can it be denied that, in addition to their superior staying powers —which our own horses are losing by reason of short spins and five-furlong handicaps—the French colts and fillies are usually well grown and fine specimens of the race. His observations of the sound and practical common-sense exhibited by French owners of thoroughbred stock has induced the most successful breeder in England—Lord Falmouth—to take a leaf out of their book.

The system which Count Lagrange has so successfully followed in Normandy, of turning his foals, on the eve of their becoming yearlings, into a large forest, and allowing them to run wild, has been imitated by the noble owner of Andred and Garterley Bell, at his place in Cornwall. His young thoroughbreds have a park of some sixty acres placed at their disposal, in which they find more than sufficient "roots and verge" to wander without tainting the ground—considered by the late Sir Tatton to be the greatest danger to which owners who breed for sale, and who keep the same stud farm year after year, are exposed. It is contestable that, to quote Admiral Rous's warning words, the yearlings raised at many specalative stud-farms in the neighborhood of this metropolis are "too thick on the ground." They have a poor chance when they come, as race horses to, oppose antagonists reared in the spacious Cornish woods and pastures at Trogothnan, or which were born among the roomy meadows of Lord Falmouth's other stud-farm at Croworth, in Kent. There is nothing more certa than that the vast majority of famous race horses upon the British Turf have been private-bred animals, and not yearlings sold at public sales. The late Lord Derby had an invincible repugnance to training a horse which he had not himself bred, and although the most successful animal that he ever owned, Canezou, was raised by Mr. Allen, few breeders ever sent more good race horses into training than the noble statesman who once said that he would rather win the Derby than be Prime Minister.—*London Telegraph.*

The Horse Stock in New South Wales.

We transfer to our columns, slightly abridged, an article from the Official Report of the Chief Inspector of Stock for New South Wales. The efforts made there for the improvement of this most valuable stock is worthy the careful consideration of our farmers who make the breeding of horses a part of their business. The horned stock should not engross our whole attention. We all know there is not on the farm a more valuable animal than the horse, or one to which we should bestow more attention, as there is none will better repay every trouble and expense incurred in his behalf.

This stock is reported as entirely free from any infectious or contagious disease. There appears by the returns to be a considerable increase in the number of horses. Relatively to each other, the numbers of the different breeds may be stated at (say) one-sixth draught, one-sixth light harness, and four-sixths saddle. The inspectors report (with only four exceptions) that the horse stock in their districts is improving. This is being brought about—1st, by keeping the horses in paddocks; 2nd, by the destruction and sale of weedy mares; 3rd, by the introduction of well-bred entries; and 4th, by the destruction of wild horses; and I will deal with this branch of my report under these heads: 1. Depasturing in paddocks. This is a step in the right direction. Until they are so they will never be so quiet or manageable as they ought to be, nor can they be kept from coming into contact with wild horses and stray ill-bred entries, which always infest open runs. 2. The culling and sale or destruction of weedy mares. This also is absolutely necessary. Thousands of mares are still allowed to breed, whose progeny, with the sires now available, can do little more than pay the expense of driving them to market. The return to the breeder is very little more than half what cattle give; for it is generally allowed that one horse eats and destroys as much as two head of horned cattle, or at least that two horses require as much pasture as three cattle, while at present rates cattle are fit for market a year earlier than horses. 3. The introducing of well-bred sires. Of late years there have been frequent importations of both English thorough-breds and Arabs, and a good many of the former introduced last year are of very fashionable blood. But besides these, we possess in the Sir Hercules (a colonial-bred sire), New Warrior and other families, some of the stoutest and best strains in the world. So far as the draught stock are concerned, the horses which have lately been introduced have generally been of the right description—being principally of the Clydesdale breed, the best draught horses for general purposes; and a decided change for the better is noticeable during the last few years; but any improvement must be comparatively slow, for the mares to which these entires can be put are mostly light in the frame, leggy, and wanting bone below the knee.

There is a very great scarcity of good sires of the light harness and saddle horses of this breed. At any rate, with the exception of a very good horse reintroduced by Mr. Woodhouse, of Mount Gilead, Campbelltown, from Tasmania, and another of the same stamp imported by Mr. Rouse, of Guntawang, no entire of this stamp has been imported for several years, and pure-bred coaching mares are even scarcer than the entires. To supply the demand for coaching and light harness horses, therefore, a cross-bred animal is being produced. The thorough or well-bred blood horse is put to draught mares, and the draught horses to light well-bred mares. The progeny is the ordinary light harness horses of the present day, which, taken as a class, are very far from being the right sort even for work, and so far as good looks go they have little to recommend them. Of the two the cross with the blood horse and the heavy mare is the better; and where the sire is thorough-bred, or nearly so, and as fair strength and substance, a good many useful animals with passable action and fair shapes are bred. Very few of them, however, are fit for the side of a carriage. In the other cross again the chances are still further against the breeder; and it is no uncommon thing to see some of the stock bred in this way with what might be termed the sire's head, the dam's legs, the sire's straight cloddy shoulder, and the light middle-piece of the dam, with a general coarseness all over, and neither style nor endurance. The fact is, this cross is by far too sudden; *i. e.*, the animals making it are a great deal too much unlike each other to amalgamate properly in their progeny. And it is to the fact of our breeders being reduced to either of these alternatives, or to that of breeding from mares the produce of this cross and a blood horse—when the produce almost always runs small and weedy, with anything but showy shapes or good carriage—that the great scarcity of well-bred serviceable carriage and buggy horses is attributable.

To remedy this state of matters the pure-bred coaching horse or Cleveland bay ought to be introduced from England. In purchasing in England, however, great care should be taken that the horses selected are of the pure coaching blood, and sprung from progenitors which have for many generations been bred from that blood without any admixture whatever. If this is not done, a more stylish, and perhaps somewhat handsomer horse in some respects may be palmed off for the Cleveland. I allude to a horse got from a light clean-legged mare by a thorough-bred sire. Horses bred in this way are comparatively useless for stud purposes, for they are themselves but cross-bred, and there is no certainty that their progeny will be like themselves—the certainty is rather that they will be unlike. Their use, therefore, only leads to disappointment and loss; and it is to overlooking this fact that so many of our breeders of horse stock have been unsuccessful. If the Cleveland were put to good-sized mares as nearly as possible of the same type as himself, the progeny as a rule would be a fair coaching size, with good action and good looks. If again he were put to mares of the upstanding saddle or well-bred light harness type, the progeny would in most cases be a well bred light harness horse fit either for the side of a carriage or for a dogcart or buggy. And if put to the smaller well-bred, or even the comparatively light or weedy mares (of which we unfortunately have tens of thousands) the progeny would be either a fair buggy horse or a good-sized hack. There would, even with these sires, be still of course a good many comparatively low-priced and worthless animals bred from such mares as are now in the colony, but the proportion of low-priced ones would every year be less and less.

Another horse whose introduction would be of immense advantage to the colony is the Norfolk cob. He stands from 15 hands 3 inches high, and is what may be termed a thoroughbred cob. His head and neck are all that could be desired, while his expression indicates courage and durability; his withers are high and well set back; he is thick at the heart, broad on the loins, and well ribbed home; his quarters are full and round, and his arms and thighs full of muscle; his knees and hocks are strong, and his cannon bone is remarkably short and stout, while his pasterns are strong and elastic; his style and action as a trotter is superior to that of any other breed, and his speed would be considered under the average if he could not trot 14 miles within the hour. Not only would these direct benefits accrue to our studs by the importation of the Cleveland, the Brunswick carriage horse, or the Norfolk trotter, but very great indirect advantages would also follow their introduction. Thus the next generation of our well-bred brood mares would be considerably stouter, more roomy and larger every way than they now are—more like what they were twenty years ago; and if a good thoroughbred could be put to them, instead of the progeny being as it now is, with such a sire, light and weedy, it would in nine cases out of ten be a good, serviceable, well-bred, upstanding hack, or light-harness horse, with plenty of style and spirit.

The Trotting Horse.

The trotting horse has become a great favorite with the public on account of his speed and wonderful powers of endurance. They find a ready sale at paying prices. They will continue to be raised as long as they pay a profit on the cost of production. It costs but little more to raise a colt than it does a calf. The former will pay a larger return on the capital invested, or cost of production. The improvement of the breed of trotters is the subject that most concerns the public and interests the breeder. How shall we breed them so as to secure the trotting action, and develop its

practical performance so as to preserve it as a previous inheritance to be entailed to othergenerations?

There are two causes that co-operate together to establish the trotting instinct, and preserve it to future generations of the equine family. The first cause is breeding into trotting ancestors. The second step is by bringing out the trotting gift by skilful training. Breed to fast trotters, and develop their speed by artificial cultivation. The trotting instinct is the will to put the physical powers in force. Fast trotting originated with the fast runner, coming down through great families of trotters, till the trotting propensity overuled the running instinct and became the established gait. Some running families have good trotting action, especially those that have inherited in great profusion the blood of the Barb and Turk. It is from the descendants of the oriental horse of the desert, which was gifted with fine trotting action, that our most famous trotters are greatly indebted for their wonderful speed.

The breeder must propagate the trotting action to his young scions from a line of trotting ancestors. The hereditary gift of speed will lay the foundation for its future developments. They will trot fast because their parents were gifted with great speed, provided they are not injured in the grand preparation. Ignorant, ill-tempered, or unskilful trainers may spoil the most promising young trotter. The reckless driver will overtask them, which will cause them to "shut up" in a race, or get them to bolting the track or some other foolish habit that will depreciate their value. Any vicious habit once contracted will cost a good trainer time and patience to work over and correct.

Good temper and a sound constitution are powerful stimulants to fast trotting. Where the trotting instinct is bred in and the subject has the resolution to put forth his utmost exertions, they will continue to improve by cultivation, so long as they stand training, and will ultimately attain great speed. The leading faculty bred in the bone will come out in the flesh. Cul ivation brings the natural powers into practical use. The high-bred trotter will not stand harsh treatment. He will revolt at the cruel treatment of heartless drivers. Brutal trainers have proved lamentable failures. They appear to be rank poison to the trotter. They never have, with brutal force, developed the full motive powers of young trotters, and probably never will. It is not in the nature of things to elevate the brute creation by appealing to the lowest passions of the human mind. Man was endowed with reason to domesticate the dumb brute, improve and make him an agent of industry, to contribute to the support of mankind.

Kindness is the leading instrument to educate and improve the horse. Force begets resistance. It compels the oppressed to fight back to protect himself from oppression, and he contracts the habit of rebellion. It destroys that mutual confidence between the horse and his driver that must exist to have the former respond to the call in every emergency. Patience and perseverance will accomplish wonders. It has brought many young trotters of moderate promise to the highest round in the temple of fame. The skilful trainer uses reason for his guide and steers clear of those breakers that have wrecked so many young horses. He adopts intelligent instruction to educate the trotter. He has added incalculable value to the breed by developing the full powers of some of their choicest scions. Few persons ever heard of Hambletonian till his sons Shark and Dexter appeared upon the turf. The inherited trotting powers of the colt can be developed to their utmost extent by kindness united with firmness.

POTATO FLOUR.—Few persons in the United States, says the Agricultural Report, are aware of the demand, and the great extent of the market that can be found for this product, which is simply the dry, evaporated pulp of the ordinary potato, the whiter and more free from black specks the better. It is used for sizing and other manufacturing purposes, and with the aid of precipitation and acid is converted into starch. In Europe it meets a large and increasing demand, in its primitive state, as potato flour; and in Lancashire alone 20,000 tons are annually sold, and as many more would be taken if put into the market. When calcined, it is largely used for silk-dressing and other purposes. At this time the quotation for potato farina in Liverpool is a little over four cents a pound, while wheat flour is about two and one-sixth cents a pound; so that potato is worth nearly double that of wheat at the present rate. Consignments to Liverpool are solicited by the brokers there, who promise to take all that can be furnished.

Correspondence.

To the Editor of the FARMER'S ADVOCATE.

On Watering Fruit Trees.

SIR,—The subject of watering large fruit trees has frequently been discussed, and different opinions expressed thereon. Probably the Dutch way of applying liquid manure would be found beneficial. They use a stout stake about five feet long and three inches in diameter, pointed with iron, and a piece of wood nailed on one side to place the foot on. With this, holes about 12 or 15 inches deep and about two feet apart, are made all round the tree, just within the circumference of the outermost branches, and liquid manure poured into them about once a week. In wet seasons the liquid manure alone is used, but in dry weather it is diluted with one half water. Care must be taken not to commence using the liquid manure until the fruit has acquired some size, otherwise the leaves will rob the fruit and cause it to fall off. The use of the liquid manure must be discontinued as soon as the fruit begins to show signs of maturity, so as not to injure the flavor. For young trees water alone would be sufficient, as liquid manure would cause too rapid a growth of wood, which would probably not ripen properly, and be more liable to be winter killed.

I would recommend as a good way of watering cabbage or cauliflower plants, that a small sized flower pot should be sunk in the ground on the north side of each plant, and filled with water, which will escape through the hole in the bottom no faster than the earth can take it up. Where small flower pots are not at hand, a stout stick may be used to make four or five holes round the plant, and pour the water or liquid manure into them, so that the roots will get the direct benefit of the water, and it will not be dried up by the sun or the ground become baked hard, as in the usual way of watering them. I have found this a good way of applying liquid manure to the hills of pole beans and also to vines, for which purpose I use soap suds with fowl droppings stirred up in them.

For flowers a better way to prepare the liquid manure would be to stir up the fowl droppings with water in some convenient vessel, and when the droppings have settled down, pour off the clear water, which will be found equal to guano water. For window plants in towns, where fowls are not kept, a tablespoonful of ammonia in a pint of water may be used to water the plants twice a week, but it should not be used till the flower buds are formed, or the leaves would grow so luxuriantly that no flowers would be the result. To clear the vermin from house plants, I have found no better way than to catch a few of the small brown snow birds which are common in the spring, and may be easily snared by placing a little chaff on the snow with some horse hair loops amonst it. Let the birds loose in the room, when they will naturally fly to the windows and perch on the plants, and soon pick off every insect from them, and when their mission is accomplished I give them their liberty again. I have seen a lady employ her pet canary for the same purpose, first expelling everything in the shape of a cat from the room, and then opening the cage door and letting the canary hop about the plants for an hour or two every day, when the insects will soon be exterminated. It is pleasing to watch Master Dicky peeping under the geranium or rose leaves, and seemingly enjoying the treat which the insects afford him.

CHAS. JULYAN.

Stocking a Farm with Horses.

SIR,—A gentleman living somewhere on the border between England and Scotland writes and asks me how I think it would pay to raise nothing in the stock line but horses, excepting a pig or two and some fowls. I told him that I was not in favor of specialties for general farming, although many had done well by it, but many had also been ruined by it. I told him that if he calculated to come to Canada to farm, that he had better do as he saw other people doing for the first two or three years. He says he is doing very well where he is, only he has to pay an extra high rent, and it is not convenient for him to rent as much as he wishes. His idea is to get about three hundred acres of cleared land if he comes to Canada. This is the way he proposes to do if he comes out next spring, and gets a suitable situation: He will buy two span of working horses to manage the farm with, and then as soon as it is time for colts to be weaned, he will purchase six of the best colts for making heavy farm horses that he can find; the next year he will buy six more, and the third also, when he will have eighteen; the fourth year he will have the first three span thoroughly broke in to all sorts of farm work. These are sold and the number filled up by six more colts.

He says for the last ten years he has sold and bought and broke in horses in this way both for himself and others. He says there is no difficulty in selling them. It is very seldom he has to take any to a fair; he advertises and people soon find out that such are to be sold yearly. He wishes to know if any such method of farming in Canada is carried on in a large scale. I told him I did not know whether anything of the kind was practised here or not, but if I was informed that he would be likely to be successful, I would let him know about it.

There is one thing I am aware of. It would be a benefit to farmers if there was a farm of this kind here and there through the country. A farmer would have a chance to get a horse or a team without so much running around as he generally has. If you or any of your readers would pass your opinion on stocking a farm in this way, you would much oblige A SUBSCRIBER.

Oneida Township, Haldimand Co., Ont.

[We do not know any Canadian farmers whose specialty is the feeding of young horses, as your friend proposes, but we do not know but that he might be successful in the business. Good horses, and none but good horses, bring good prices, and would pay a man for labor, expense and care. Some have been very well paid for raising horses, but on a small scale. Your advice to your friend was, we think, the very best—that he should for some time be guided by the experience of persons who know the country, its soil and climate, and farm as they do. If any of our readers in any part of the Dominion would offer any suggestions on the subject, we would feel obliged by their writing to us.—ED.]

A Guide to Canadian Farming.

SIR,—I have very recently become a subscriber to the FARMER'S ADVOCATE in the hope that I may find in it what to my mind appears to be a great want. I refer to a guide to Canadian farming. It seems strange to a fresh arrival that in a country where but a small minority of the population are "natives here and to the manner born," no really good guide to husbandry exists.

In England, where it is no uncommon thing for men to live on the farm on which their fathers and grandfathers lived and died, a work on husbandry is not needed; yet guides abound, from "British Farming," by Wilson, down to "Pigs and How to Feed Them," price 6d.

The other colonies of the British Empire do not neglect this important matter. An intending emigrant can, by applying to the respective agents for Queensland, Natal, &c., obtain at a small cost a really useful book on the practice of farming in each colony.

Without going deeper into our deficiencies, could you, Mr. Editor, do anything to supply this great want? A series of short articles on the various lands open for settlement, with a description of their physical appearances, &c.; the best plan for a farm homestead, how to treat swamps so that they "may blossom as a rose," a short way with stumps, the best position for an orchard, and a hundred other kindred subjects would greatly interest your readers.

With my best wishes for the success of the ADVOCATE, I remain, &c.,

THOS. C. ROBSON.

Minden, March 26th, '75.

[Mr. Robson will see in the reply to enquiry of a subscriber, in the ADVOCATE'S present number, a brief account of the Free Grant Lands—the only information on the "various lands open for settlement" that is at present accessible to us. Short articles on subjects as suggested by Mr. R., have occasionally appeared in our journal, as we consider the supplying all who are interested in agriculture with every useful information on subjects con-

nected with the farm, the duty of an agricultural journalist. We do not know any work on the practice of farming in the colony such as he wishes to obtain. Our great aim has been to make our journal supply such a want by giving plain practical articles on topics interesting and useful to the farmer, whether from the old country or to the manner born. Would Mr. R. aid us in the good work by writing to the ADVOCATE some of his experience in farming?—ED.]

Canadian Plows.

SIR,—Allow me to call your attention to the following facts. While reapers, mowers, threshing machines, seed drills and cultivators have been largely imported from Ontario, and hold their own with the same articles imported from the United States, plows imported from Ontario have been complete failures; the best that has been brought in is not worth more than the price of old iron. I am certain the Ontario manufacturer is capable of making as good a plow as the American, and only requires his attention to be called to the matter. The fact is, this Province requires quite a different kind of plow from that used in Ontario. The American plows work well, both breaking and cross-plowing, but would, I think, be a litt'e improved by being made a little heavier and stronger. I have been much annoyed by seeing thousands of dollars every year going to the States that ought to go to Ontario.

Will you kindly answer the following queries: Can bees be sent from Ontario; if so, how, and at what cost? Can the eggs of domestic fowls be sent here; if so, how, and at what cost, if pro perly packed, and what probability of hatching after their coming?

We have had a very fine winter. There has been more steady cold weather than usual, but scarcely any storms. We have had 12 to 15 inches of snow, just enough to make good sleighing. The snow was all about gone on the 1st of April, and some commenced to sow. Sowing is now progressing rapidly (April 14.)

MANITOBA.

Winnipeg, April 14th, 1875.

About Fences and Cattle.

SIR,—The following article I copied from an American agricultural paper, and I think it worthy of republishing in the ADVOCATE. I would remind our Provincial Legislature in every issue of your paper of the necessity of putting a stop to cattle running at large. RICHARD PIRT.

Scott, May 10th, 1875.

Fencing has become one of the most important considerations demanding the attention of farmers; and it is wonderful that they should so long submit to the want of proper legislation in their respective provinces, which would relieve them from this most expensive and unnecessary burden. An impression, almost as old as our country itself, seems to exist, that public roads are public property, and the grass which grows upon them is the common property of all the inhabitants, upon which their cattle may be turned to pasture. This is a great mistake, and one which requires immediate correction, if for no other reason than that it is a very expensive one to farmers. Public roads are, to be sure, public property, but only for special purposes. While the public have the right to pass and repass over them, they have no other right than this, which the law gives them, and no more substantial claim to pasture their cattle upon the road than—upon the other side of the fence in their neighbor's field. The law allows the public to use the land occupied by the road to travel over, and whenever they cease, either by operation of law or otherwise, to use it for that purpose, it again becomes the property of the owner of the farm through which it passes. He has the fee simple right. It is unjust that he who owns no land, or, owning it, prefers to use that of his neighbors, should be indulged in so manifest a wrong. It is the duty of the Legislatures of all the thickly settled parts of the provinces to protect the agricultural interests of the country by providing that cattle shall not run at large, but that every man shall be compelled to take care of and feed his own stock, instead of turning it loose upon the highway to depredate upon the possessions of his neighbor. Money expended in fencing against these depredations of strange cattle is sometimes disbursed so gradually that the farmer does not actually realize how great is the loss.

The Colorado Potato Bug.

SIR,—As preventative is better than cure, I will give you my plan for treating the potato bug, which has proved effectual for the past two years. In the first place, have the ground you intend planting at as great a distance as possible from where potatoes have been grown the year previous. Select some variety that matures rapidly, such as the Early Rose, and plant them as late in June as you dare venture, so they will be nearly ripe before the first frost (which varies according to locality); but they should not be planted earlier than the 12th of June. Before the potatoes have shown themselves above the ground, the bugs have deposited their first batch of eggs, and the second generation not being as enterprising as the first, remain in one place, and the late planted potatoes escape. The late ones will also receive the advantage of the rains in the latter part of the summer, and consequently grow larger than those that ripen earlier.

Could you or some of your subscribers give any practical remedy for the apple-tree borer?

Canifton, April, 1875. J. B.

[In giving the above from a subscriber (J. B.) we do not recommend it. We have his authority, but no practical proof of it ourselves. It requires further trial and in different localities, before it can be accepted as a safe guard against our destructive Colorado enemy. It is at least worth a trial.—ED.]

Warning.

SIR,—We had a traveller here last fall selling patents for a wonderful harrow—a harrow that would cultivate potatoes and dig them, and not a potato would remain in the ground. He sold a great many harrows, but he has not delivered them yet. He says he came for the Phœnix Foundry, London. I enclose you a pattern of the harrow, which works with clevise at joints.

PETER GILCHRIST.

Ross, April 23rd, 1875.

[We have enquired at the Foundry, and find that no such harrow is made there. -ED.]

Orchard Grass—Manure.

SIR,—I wrote to you the beginning of this year asking one or two questions interesting to me as a farmer, and I am sorry you had not the courtesy to take any notice of them. I should not have bothered you, had you not mentioned your columns were open to queries. When at home the *Mark Lane* always was good enough to afford me any information. I have bought 600 acres in this back township and am clearing it by degrees, intending to make a sheep farm of it, and I must say, I have picked up a good deal of valuable information from your paper which I have taken for the last three years. I sowed some Clawson wheat and Scott wheat I received from you last fall. The former is killed out by the late frosts far worse than the latter. I am going to try the Orchard Grass shortly, in England it succeeds very well. What is my best course to pursue with a large heap of manure outside my stable, which has been collected through the winter. I thought of drawing it away and piling it in a high heap somewhere to be ready for the fall, but the land hardly requires it, as I have only had one crop off, and it is seeded down. Yours Truly,

A. J. WRIGHT

Apsley April 26th 75.

We regret Mr. Wright's disappointment from his queries not having been answered. Whether his letter came to hand or not, or whether having been received, it escaped our notice in the great number of letters of our daily receipts we are unable to say. Any seeming neglect we would assure our subscribers would certainly be undesigned.

The Orchard Grass is but lately introduced into this country. Beheving it is of great advantage to the farmer's here as it has been in the Home country, we imported some seed this season.

The heap of manure is no more in the farmer's way than, would be a good credit in the Bank of England. If it be not needed for the next season crops (roots or cereals) let it be used for top dressing. Land cannot be too highly manured. Well prepared manure will nourish the young grass plants. The fields will produce more grass, and whether in grass or afterwards in tillage, will be sure to pay for manure and labor.

A Subject for Orchard Owners.

SIR,—The thought occurred to me some years since, that if there were places for the blue bird to build in, provided in our orchards, they would live there and relieve the orchard of many of the caterpillars that are so annoying. I therefore took 4 pieces of board about 10 inches long, 1 three inches wide, two 4 inches wide, and one 5 inches wide, nailed them together, then slant off one end to form a pitch for a roof, then cut a hole in the high side for the bird to go in, then stuff a bit of hay about half way down, then nail on a bit of shingle for a roof, then get a pole about 10 feet long, sharpen the end and punch it into the ground about two feet, then put the other end into your bird house about half way up and nail it fast and set it up.

I tried the experiment a few years since and had not got the house up an hour when a blue bird took possession, and you would wonder to see how pleased it was to find such a nice place; it raised two nests of young birds that summer.

I watched them for about three parts of an hour one noon spell, and they made 22 trips from the apple trees to their nest with worms for their young ones, in that time it was very gratifying to see how diligently they searched among the leaves for food for their young ones.

I have put up others since, and I find them very useful, as they save many apples from being destroyed by worms, and if they done nothing but furnish us with music they pay well for the trouble they cost us. Some persons might think that one house with several apartments will do a lot of them, but they are apt to quarrel, one pair in one place, but keep their houses a rod or two apart.

Last fall two old birds with about ten young ones or what they had raised last summer, came and had a look at their old nest before going south.

It will be necessary to nail on a bit of board in front of the hole for a sitting-board.

WILLIAM HOSKINS.

Sarnia, March 16th, 1875.

We give insertion to Mr. Hoskins' communication with great pleasure. We are always pleased to aid in any way the encouragement and protection of our friends the birds. From infancy we have looked upon them as delightful companions, and we have been taught by experience that they are among the farmer's best friends. We would be much pleased to find that many act on Mr. H's suggestions, and provide a home for the little songsters while at the time engaging their valuable services in the protection of their fruit. Encouraging birds to nestle about our houses and gardens is one of the means to make a cheerful happy home.

Garden Hedges.

One of the many difficulties that a gardener has to contend against is to screen his grounds from the cutting wintry blasts. A keen January northeaster coming across a large expanse of open country on to a plantation of conifers and shrubs, will not only cause them to present a miserable appearance, but often so injure them that they will look as if they had passed through a severe fire. When grounds are placed in this position, there is nothing better than to stem the blast by a thick plantation of Scotch and Spruce Fir.

But when the position is open without being exposed, hedges will be found to be sufficient to stem the cold winds. The gardener should be careful to have hedges in keeping with his grounds. There is nothing more unsightly than a common hawthorn hedge near a garden hedge, for, although a great deal of sentiment is written about the "shade of the thorny bush," it is decidedly more in keeping with the farmer's field than the gardener's domain. It is very frequent that in large grounds hedges have to be made to hide an unsightly patch of ground or a part of a vegetable garden. Then, if the position is not too much exposed, there is nothing more suitable than the *Cedrus deodara*. This, planted in some good fat loam, at convenient distances apart, will not fail to give satisfaction. For the first year or two they can be allowed to grow freely, and then when they have begun to close toward each other, there outside branches should be carefully pruned so as to allow them to grow upwards and expand into a thick and shapely hedge. The only other juniper that really makes good hedges is *J. virginia*, commonly called the "red cedar."—*Gardener's Magazine*.

PRIZE ESSAY.

APPLICATION OF MANURE.

Written for the FARMERS' ADVOCATE.

SIR,—In the February number of the ADVOCATE you invite discussion on the proper time for applying barn-yard manure. Without preface, allow me to commune with you a short time on the subject.

In giving you my opinion, I would say that it is almost impossible to lay down any definite rule, as the climate and soils are so varied that a great deal will depend on the farmer's own judgment, and likewise the different crops he wishes to cultivate; but as to composting, there is not a doubt on my mind but it is the true principle for all light soils; but on strong, heavy clays, I think manure in a green state would be more beneficial.

With respect to the proper time for applying, for all root crops my experience is fall manuring, and if you cannot have a sufficient supply and have to use what manure is made in winter, I would say that the best way is to haul out as you make it on to a pile in the field, and apply as soon as possible in the spring, so that the dung becomes thoroughly incorporated with the soil by the different workings the land requires in preparing it for the reception of the seed; although I have seen very good results frem having the land plowed in the fall and the dung spread on during the winter months, fresh from the stable: but, bear in mind, this dung was made from cattle that were fed on roots, pea meal and oil cake. The practice of applying long unfermented manure for roots in the month of June is an injury (unless you have a very weak season), because it has a tendency to hold the soil up, making it light, and the scorching sun dries all the moisture out of the ground, which should be preserved for the germination of the seeds. I have some years had to follow this latter plan, when not having a full supply to go over the field in the fall or spring, but I always take the precaution to use the heavy iron roller before putting the seed on. I may say that I have tried all the different modes of applying manure for root crops, and have come to the conclusion that the very best of all is to plow the land in the fall, and as soon as the ground is sufficiently frozen to bear the waggon, spread on twenty-five or thirty good loads of manure to the acre, and let it lay until the spring, and then give it the full amount of working to bring it to the proper tilth for receiving the seed; then if you use good seed, either mangel wurzel or turnips, and attend to them in proper season, your root crop will be satisfactory, your after crop of grain will be remunerative, and if you sow down to grass seed, your hay crop will likewise be good.

In speaking of the following crop of grain, I have never seen any difference between the fall manuring and that which was done in the spring, one part of the field being equally as good as the other, although the root crop was clearly the best on the part that was manured in the fall. Then, with regard to the proper time of applying manure to other crops, my experience has been somewhat extensiv on a strong clay loam, where summer fallowing for fall wheat was practised to a large extent. The best results was from green manure applied before the second plowing in the month of June, at the rate of 25 loads to the acre, and about 20 loads of leached ashes added; being close to an ashery, we could have all we required for hauling. By applying manure unfermented to a strong retentive clay, it has a tendency to keep it open, making it more friable, and letting in the air and sun, which is of the greatest benefit to those cold clays.

When you say that the farm yard manure stands at the head of all manures, I fully endorse the sentiment. I look upon it as a perfect manure. The farm yard is the farmer's gold mine; we can draw from it, if properly attended to, all the fertilizing constituents favorable to the luxuriant growth of all crops. Experience has taught us that we have everything within our own means, without expending one dollar on any artificial manure, except salt and plaster. Artificial manures are not adapted to the wants of the Canadian farmer, because of the extreme dryness and shortness of the season; and perhaps from the time of their application to the gathering in of the crops, we don't have one single shower of rain, and therefore the returns do not permit of the outlay, however well they may do in the moist climates of the old countries. Not so with salt. I would say to everyone—if he cultivates not more than a garden plot—use salt either as a top-dressing or incorporated with the soil. I have seen the good effects of it on wheat, barley and oats, and especially have I seen the advantage of it on the turnip crop, when put on with an unsparing hand.

In the case of grass or meadow lands, locality and nature of soil will again be brought into question; if a light soil, compost and spread evenly on the surface in the fall. In the month of April brush-harrow; this operation will regulate any large lumps. The rootlets of the grass will find the speedy effects, and a genial warmth will materially advance vegetation in the spring.

These remarks are from personal experience, and I would wish it to be understood that the same rule will not give the same results in all localities, but as a general thing the fall is the best time to apply manure, and the best mode is to keep it on the surface. Depend upon it, you will get a quicker and a more satisfactory return.

JOSEPH KIRBY, Guelph.

Poultry Yard.

Amateur Poultry Keeping.

The following useful hints are condensed from the London *Agricultural Gazette*:—

At this season, more than at any other time, the poultry about our houses will repay the housekeeper for every little scraps she can spare, and for some thought and attention given to their wants and desires. We constantly hear that eggs are so scarce it is impossible to get fresh ones. Only a little management and little forethought, and all might have them. Our own experience is as follows:

We have no special convenience for keeping poultry. The soil is bad for them, being cold wet clay, and dry sand or chalk would suit all poultry ten times better. Our fowls have a steep corner, very few square yards for each bird being all the space they have to walk over so all their needs have to be thought of and met by their mistress. A very tiny scrap of garden for vegetables is not enough to give refuse all the year round for their green food, though every leaf not boiled is given to them. Fresh, green, raw vegetables are far better than any cooked, though these bits, if left on the plates, are favorite morsels. Fowls kept without access to sufficient grass for them to graze on must have a supply of green food to do well. Every scrap from the house the fowls look over, and eat the heads and cleanings from fish and fowl and game (for they have no cannibal scruples), and every little bit of fat that can be spared; and if they have been very bare of animal food, we buy from the butcher one pound of skinny fat thrown by for the chandler's use, and give 5d. for it; this will be enough for a fortnight. The fat skimmed from boiled meat and the grease cleaned from the dripping pan is mixed with the warm meal they get the first thing every morning, and they have two feeds in the day besides of mixed corn, maize, barley and wheat, which is now cheap; and they never have more than they eat at once, except in the summer, when the fowls are up hours before the inmates of the house; then there is a little more given at night for them to find and feed on—scatter as wide as possible to spread the grain over the space allotted to the poultry.

The corn and meal costs now, as near as possible, 2s. 3d. a week, never more. We have six hens two years old, two young cocks, eleven pullets of 1874; these were hatched in February and March; six are half-bred Cochins, from a pure Cochin cock and large French hens; three are half-bred Game from a pure Game cock and the same kind of hens; and one is a light Brahma, and one a half-bred Houdan. Yesterday the poulteres, seeing our egg brought in, offered 2½d. each for them. He keeps more than 40 fowls, and tells us he has not had an egg for more than six weeks, but he expects some every day! and wonders at our good fortune. The fishmonger cannot understand how not one of his fowls—almost 50—is laying now, when we are getting eggs every day. The butcher, who has a yard and green fields for them to stray over, told us yesterday, out of 60 or 70 hens he could not reckon on one egg every day now. But why cannot all have a good supply? All could if they would bestow the care and forethought which, unfortunately at present, poultry are not considered, worthy to receive from any household; if they did, of course our market for eggs at 2d. to 2½d. each would cease. It is a pleasure, or a labor if you will, that brings its own reward, and very quick return. If, in the other place, the kind most suitable, and the earliest and best pullets are selected and kept, they will begin to lay in September, or six or seven months old, reckoning from February to March. But spring chickens are so nice, and so dear to buy, and every housekeeper has sometimes calls for a dainty dish, and so the spring chicken and asparagus are eaten and enjoyed in May or June, and the prospect of eggs fresh and good daily through the autumn is in jeopardy thereby.

For the assistance of housekeeping it is worth while to consider this well and so supply the needs of the fowls about our doors; if you keep them at haphazard, to feed as they can catch it, and all is guarded to them, most likely you will keep them weeks or months at this season without their returning you an egg, like our neighbors the poulterer, the fishmonger, and the butcher, the refuse from whose trades must supply valuable additions to the food of fowls. But the little things are not thought of; and this it is after all which secures success. They must have warm shelter in their roosting houses; a shed to escape from rain and to feather in, with dry ashes frequently thrown there; clean, good water three times daily given fresh, the same we drink ourselves; plenty of grit, road scrapings and old morter rubbish put every few weeks and broken up three or four times in that time for them to get at fresh bits. All this we have to do, as there is nothing in our soil useful to them. All these little things we find needful to ensure success, and it does not take half an hour a day, and, if you love your birds, it is a great enjoyment to see them well and prosperous, and you will find them among your best friends; your poultry will show you practically, by filling your egg basket, that they, too, know that "one good turn deserves another."

At birth the pig has the temporary tusks and the corner incisors well up. These teeth are very fine and sharp, almost like fine needles, and occupy a position on each side the mouth, leaving a clear space in front. In a month to six weeks the central temporaries are cut, and soon after the completion of the second month the lateral incisors are cut, and the animal has its full set of temporary teeth, including three molars on each side, top and bottom, six incisors, top and bottom, and a tusk on each side, top and bottom. At the age of six months the premolars, which occupy a position between the first temporary molar and the tusk, are cut, and also a permanent molar, which is fourth in situation. The premolars are not always present, and in their absence the fourth molar will be accepted as an indication of the age of six months. At nine months the permanent tusks are cut, and the corner permanent incisors, which often prick through the gum soon after seven months, are fairly up. At one year old the central permanent incisors take the place of the temporary teeth, and the fifth molar is also in position.

Many pigs at the age of twelve months retain the temporary central incisors, and we have met with no instances of the permanent centrals being in their place before the full age of a year; hence the fact of these teeth being well up in an animal which was certified to be under one year, would be a ground of disqualification. At fifteen months the three anterior molars are permanent, and they may be easily recognized by their recent appearance and by the absence of any signs of wear. At eighteen months the permanent dentition of the pig is completed by the cutting of the last molar, and also the external permanent incisors.

After this period it is seldom necessary to define the age of the pig, nor is the evidence which is afforded by the growth and wear of the teeth sufficiently exact to enable the examiner to form a positive opinion.—*London Agr. Gazette.*

The Sherbrooke *Gazette* gives a detailed account of the operations of the Canadian Meat and Produce Company, and confesses astonishment "at the amount of work done, and the evident extent and magnitude of the business that will be carried on when once the Company is fairly in operation." We learn that there have been shipped to England already 200,000 lbs. of fresh meat; 50,000 lbs. of tinned meats, soups, &c.; 45,000 lbs. of salted meat; 500 hides, and large quantities of poultry, game, &c. The works seem to be exceedingly well arranged, but considerable improvements in the shape of a large permanent establishment and homes for the employes are contemplated. The *Gazette* says:—"Already the farmers in the adjoining townships have begun to realize the advantages resulting from the location in their midst of a regular and remunerative cash market for their beef, cattle, pork, poultry, &c.

Garden, Orchard and Forest.

Cabbages as Grown in the London Market Gardens.

What is called the Enfield cabbage is that which is used in the market gardens about London. It is one of the oldest in cultivation, and one of the best, and as growers of it generally save their own seed, they take particular care that their plants of it are not crossed with other sorts. The sowing for the principal crop of this cabbage is generally made on St. James' Day, the 25th of July, or some time between that and the middle of August, and if the sowing be made on poor ground, so much the better, as in that case the plants come up stocky and hardy, and stand the winter well, whereas, if made on rich ground, a soft rank growth is produced, which is much more easily injured. This sowing is, as a rule, made in four feet wide beds, a width found to be convenient for weeding and hoeing amongst the plants. By the time the latter are sufficiently strong to be transplanted, the potato or onion ground is ready for the reception of a first batch of them, and on that cleared for celery, French beans or vegetable marrows, another plantation is generally made. Every empty space under fruit trees or elsewhere is also planted with cabbages. In planting, the ground is lined off into rows, twenty-five inches apart, and in these the plants are put in fifteen inches asunder. Between every two rows first planted another is now put in with less care, thus making the plants stand fifteen inches apart each way. Early in spring every alternate line of plants, and also every other plant in the line of rows left, are lifted and sold as coleworts, *i. e.*, young open cabbages, a state in which they are preferred by many to such as are hearted. This allows the permanent crop plenty of room to come to maturity. With a view to subsequent plantations, which are made all through the winter wherever ground is vacant, the young plants in seed beds are removed and pricked out into others a little further apart, in order to keep them in good condition for planting out as long as possible. In this way, indeed, many of the plants are kept till spring, when they are transplanted to succeed those planted out in autumn, and to come in before the produce of the spring sowings, made late in February or early in March, to furnish cabbages from June to August. The plants from this sowing are put out in rows two or two and a half feet apart, and in the intervening spaces are put lines of lettuce, a plant of which is also set between every cabbage in the row. If thought necessary, another sowing is made in the end of March, or April; and sometimes a bed is sown in May, when what are called rosette coleworts are sown. As the latter are, however, chiefly grown for late autumn and winter supplies, cabbages are seldom sown after March. Moreover, when peas, French beans, and vegetable marrows are in, there is little demand for cabbages. Red cabbages are sown in March or on St. James' Day, and the plants stand about three feet asunder in the rows. As this crop stands until the heads are large and solid, a piece of rich land is devoted to it, and inter-cropped with potatoes, ordinary cabbages, lettuces, French beans, or other vegetables of that kind. The produce of the July sowing is generally considered better than that of spring.

The Fruit Crop.

At the recent meeting of horticultural societies in the West, discouraging reports as to the fruit prospects have prevailed. We have news from the May meeting of the Alton Society. The reports are summarized as follows:—Early cherries, nearly all killed; late cherries, but little injured; strawberries, all right, with prospects of an average crop; blackberries suffered from the severe winter, and about 50 per cent. of the canes are winter-killed; early apples, poor prospect; late, prospect favorable; pears are injured, but we cannot say to what extent. The members report a few scattering peach blossoms in their orchards, but not enough to make the twentieth of an average crop. Reports of other societies are of similar import, in almost all cases. In the Chicago *Times*, of the 8th, we find the following as a special telegram:—J. P. Thompson, secretary of the Michigan State Pomological Society, a gentleman who has spent some time in collecting the facts in regard to the coming fruit crop in the peach belt of Michigan, has favored the *Times'* correspondent with the following facts:—Strawberries, of which there is a large area planted, will be a full crop, although late in the market, the snow having protected them from the cold weather of the winter. Raspberries and blackberries, especially the most hardy varieties, and also those growing in the woods, will produce fairly, probably a medium crop. Cherries of the tenderest varieties varieties have had their buds badly injured, but those of Morello stock are looking well, and a half crop may be expected. Plums are badly injured, and the crop will be a failure. Grapes will certainly produce a half crop, all the vines below the snow-line being uninjured, and many of the buds above that line, especially on the Concord and Clinton, being in good condition. Apples are injured to a great extent, and only a very small crop will be gathered. The trees are looking well, however, and have not suffered material injury. Peaches will be a total failure, the buds being all killed, and many of the trees severely injured, being frozen back to the snow-line. Young trees generally will recover, and will only lose a year's growth.

Farmers' Gardens.

To those who have no experience of gardening it is a formidable undertaking to begin one; but in reality the whole matter is comparatively simple and easy. We shall suppose that we are addressing a family who cannot afford to hire a gardener, who have no experience themselves, and have only a small amount to lay out upon a garden in addition to the labor and attention of the ladies of the family.

The first thing is to select say half an acre of good ground as near the homestead as may be, and if possible adjoining the east or south end or side of the house. Let this spot, which should be dry naturally or drained artificially, be plowed and cross-plowed three or four times, and then get a rich supply of rotten manure spread evenly over it and lightly plowed in, finishing by a thorough brushing or harrowing. Let this garden-ground be well fenced, and have a gate that will shut of itself by a weight, so as to prevent cattle or sheep from getting in through forgetfulness. The walks, borders and beds can be laid out according to taste, and the work of planting and sowing may be commenced with a prospect of excellent results.

The next thing is to get a supply of fruit trees, say a half dozen each—apples, pears and cherries, half of the pears being dwarfs to bear early, and half of the cherries Morellos. A dozen each of white, red and black raspberries, and half a dozen blackberries, and half a dozen each of white, red and black currants, will make nice beds of these fine fruits; and a hundred strawberry plants (half of them Wilson's seedling) will soon multiply to any extent. The whole of these from a first-rate nursery, with packing and carriage, should not cost over $20, and a sufficient supply of flower and garden seeds should be had, including postage, for about $3; a spade, rake and hoe will cost, say $2 more, making an investment of $25, besides the land, fencing, manure and plowing—say $50 in all, charged to the garden, which should be credited at market prices with all fruit and vegetables used by the family, the flowers being thrown into the bargain. In this way it would probably clear itself the first year, and every succeeding year yield more.

The fruit trees and bushes should be got from some nursery of a high character—other things being equal, from the nearest. The seeds can be ordered from any first class seedsman.

Such a garden as we have described would add much more than its cost to the value of the farm, as well as the pleasure and comfort of the family, and the necessary labor connected with it would not be heavy.—*N. Y. Witness.*

The Cabbage Pest and its Parasite.

It is to be presumed that everybody knows by this time that the parent of the "cabbage worm" is the rape butterfly of Europe, imported into this country about 1856 or '57, appearing first in Canada, from whence it has spread over the greater part of the United States. At first it appeared to have no natural enemy to keep it in check, but in good time, and in some unaccountable manner, the little parasitic fly which had long been known to attack it abroad, was discovered in this country, and has ever since been thinning the ranks of this previously formidable cabbage pest. The two insects appeared in the suburbs of New York City at about the same time, and their operations ran somewhat as follows:—The first season the cabbage worms were few, only an occasional one seen; the next year very abundant, taking or nearly destroying the entire crop. In the autumn of this second season nearly every chrysalid, or at least the larger part examined, contained the pupa of the little parasitic fly referred to above, instead of an immature butterfly; the result, as might be inferred, was very few cabbage worms the third season, and scarcely any since. This seems to have been about the general results in each locality visited by this species of cabbage butterfly, and all applications of poisons to the worms have done little good in lessening the number.

Of course if the parasite does not appear in any particular locality, they can be readily procured and forwarded to any distance and let loose where they would do most good in attacking their natural enemy or food, as they can only exist where there are cabbage worms. I think if cabbage growers will examine the chrysalid of the last season's brood of worms, which must at this time be abundant on the sides of outbuildings, fences, and even stems of shrubs and trees, they can readily determine whether the little parasite *(Pteromalus puparum)* has made its appearance or not. If in breaking open the chrysalids they are found full of minute egg-like pupa, then it is certain that the enemy of the worms and friend of the farmer has arrived; but if nothing but the immature, half-formed butterfly is within, then it is safe to conclude that you may have to wait for deliverance from this pest another year.

Much can be done towards lessening the number of worms by gathering and destroying the chrysalids found attached to fences and buildings about the place in winter. But I would not advise destroying those if the pupa if parasites are found in any considerable number. The difficulty is killing the worms when upon the cabbages is, that any poisonous substance applied is likely to make them dangerous food, else very filthy. Guano, or superphosphate and lime mixed together, will destroy the worms; but who would want to eat, or feed to stock, such stuff, as more or less will remain among the leave and inclosed in the head. I have used salt with good effect, but the worms that have penetrated into the head of the cabbage is safe from any outward applications. Under present circumstances I would say, Let nature take its course, for the little parasite will soon wipe out the enemy.—*A. S. Fuller, in N. Y. Tribune.*

A Year's Grape Experience.

The Germantown *Telegraph*, under this head, discusses the botanical and entomological phases of grape culture thus:

When the entomologists announced that they had discovered the truth of the grape trouble, and that it was an insect feeding on the root, a new parry at once arose, which was quite sure that the phyloxera had very little, if anything to do with it. It was mildew and mould, and not an insect—a botanical, not an entomological study. It is not to be wondered at that these radical differences should exist. There can be no doubt in the world but that those who have studied fungoid diseases of plants, and have advocated the fungoid origin of grape disorders, have proved their point by incontestable evidence. It is equally true of the root-insect idea. Here are the insects, and there are the rotten roots in myriads as the consequence, and every child knows a vine cannot do well when half its roots are destroyed. What is the simple editor to do who has no theory to advocate, but whose business it is to direct the judgment of the reader according to all the facts in hand? He can only say that no one thing causes disease; at least there are many things which will cause disease, sometimes, perhaps, existing together, so that one depends upon the other; at other times each acting independently, and as some of our friends expressively say, on its own hook.

But independently of fungus and root-parasites, it seems clear that the little secret conditions of seasons—the exact elements of which no fellow has yet found out—have their own distinct field of labor. Look at the old varieties which have almost gone out of some good catalogues, and which many have thought "gone up," and see how well they have done this season. The antiquated Catawba which at one time stood at the head of the grape lists, and then fell to the foot, has this season almost equalled its best days, in the few old fogy gardens where an attachment to the good things of the past permitted a few plants to survive. Looking at these facts, we say at once that season has to do with success, and perhaps feel some contempt for all other suggestions.

It has been of late years pretty well understood that an old-fashioned dry time is good for the grape, and we have had it dry enough, in all conscience, this season. How was it in the past?

The Catawba did as well at one time as the Concord does now. We suppose there were wet seasons and dry seasons. Probably they were wetter than now, for the scientists are telling us that the cutting away of forests increase dry times. Yet the Catawba did well in all the rain and drizzle these pre-generatic days. There must be some causes besides mere climate. Yet it is strange to the mere looker-on that beyond the mere fact that the Catawba grape has done remarkably well this season, so little more should be positively known.

Liquid Manure for Pot Plants.

The beneficial results obtained from manure water, when judiciously applied to fruiting and flowering plants, have long been recognized by cultivators, and its use is now becoming more general. It is well known that the roots of plants are more healthy when growing in pure soil free from rank manure, and these roots will draw up more healthy nourishment to the plants from manure given in a liquid state, than when they are encased in rank material which they cannot consume. We know that our most successful grape growers use very little solid manure in the soil, only a few bones or bone meal, or similar material, which cannot give off more stimulant than the plants can consume, and also remains much longer in the soil as a fertilizer than manure, which dissolves rapidly.

The successful florist has more faith in giving stimulants when the plant really needs them than in keeping the roots buried in the soil made rich and almost offensive by strong manure. When roots are few and the plants almost at rest, the purer the soil and the less stimulant the plants receive, the better will they thrive when their roots come to draw up larger supplies of nourishment. Moisture is needed to soften the soil and to allow the roots to extract nourishment from it; but when all the virtue is out of the earth, and the plants begin to show signs of distress, all the watering in the world will not give vigor to the exhausted functions; but let a portion of guano or any well prepared manure be mixed with the water sufficient to color it, and let this be repeated at every watering instead of giving a much stronger dose at longer intervals, the result will be most satisfactory. I have tried a number of experiments this season with liquid manure, and all lead me to have faith in the application of it, at every watering, in a weakly state.

A number of old fuchsias were stunted and pot bound, but pressure of more important matters prevented our potting them into fresh earth; but to each watering a coloring of guano was allowed, and the plants with their pot bound roots, have not only made vigorous growth, but flowered freely from June onward to November. Some Pelargoniums, which were cut down last season and allowed to break in the usual way, were shaken out of the pots, and placed in smaller ones, but, when they should have been shifted, they were allowed to remain in the small pots, which were crammed with roots; guano water was given at all times when they required moisture; the plants grew and made fine foliage, and flowered better than others which were favored with large pots and fresh soil. Many other examples I could give to prove that giving liquid manure frequently, and not until roots are in abundance to consume it, is the proper way to deal with this important assistant to cultivation. —*Florist.*

Pruning Trees and Vines.

It is a common saying among practical horticulturists, that the best time to prune a plant is when such an operation is discovered to be necessary, and a man has a sharp knife in his pocket. This should not, however, be considered as literally true, although volumes of nonsense have been written in regard to particular days or months in which certain kinds of plants should be pruned. It is not well to prune vines or trees just at the time the sap begins to flow the most rapidly in Spring, because it is likely to issue from the wounds, discoloring the bark below, and making the plants look unsightly, even if no further injury follows. But if trees or vines are pruned early enough to insure a good frosting of the wounds for a few nights before the sap begins to flow, there will be little danger of what is usually termed bleeding. In many Northern localities this may yet be done, and those who have neglected pruning trees and smaller plants requiring it should not delay the operation, although it may be put off with some kind until the leaves are fully expanded. But there appear to be many erroneous ideas prevalent among those who have had little experience in plant culture, and the most common one is, that vines and trees require pruning only once a year, which frequently leads to severe losses both in fruit and vigor of the specimens.

A man, for instance, concludes that his old apple or pear trees require pruning, the branches having become too abundant for the free admission of light and air into the centre of the head, or because of the leading shoots having become too tall or the lower branches droop too much to admit of working the ground underneath. He, therefore, proceeds to thin out, cut back or trim up, severing large or small branches, as the case may require. So far, the operation may be performed in a judicious manner, but in the months following it will usually be observed that numerous sprouts will spring from latent buds near the point where a branch has been severed from the main stem or elsewhere, and if these are permitted to grow it is at the expense of those and other parts of tree; besides, in most cases they spring from the points where no shoots are desired, and will be removed at the next annual pruning. Examples of this kind may be seen in hundreds of orchards at any time during the Summer months, the vigor of the trees being wasted in these sap sprouts, as they are usually termed by farmers. Now, the proper course to pursue is to visit the pruned tree once or twice during the season, breaking or cutting off the surplus shoots while they are young, thereby forcing the sap into other channels.

We think those who have had any experience in the care of orchards will readily see the importance of this operation in connection with that of the regular annual pruning. Of couse we do not assert that all trees require pruning every year, but if it is done, Summer pinching and rubbing off surplus shoots should always follow. If trees are properly pruned at the start followed by judicious care in Summer, there well be little need of removing large branches as they become old. A fruit tree should receive its first severe pruning at the time of planting in the orchard, and there is little danger of reducing the top too much.

The next period in the life of fruit trees when very severe pruning may be beneficial, is when they have reached an age of unfruitfulness, either in consequence of having been permitted to overbear or of neglect of pruning or culture. Old orchards which have become almost or quite barren may frequently be restored to health and fruitfulness by removing one-half of all the branches entire, and then shortening the remainder one-half, at the same time adding fertilizers to the soil. Considerable attention; however, will be requisite during the Summer in removing the young sprouts which will issue from the severely pruned branches. A few of the strongest should be permitted to grow, selecting those for this purpose which start at points where new branches are desired. Many of our old and now almost worthless pear and apple orchards might be restored by manuring and pruning combined. In removing large branches from trees, it is well to cover the wounds with grafting wax or some similar substances which will prevent the decay of the exposed wood.

What we have said above in regard to fruit trees is also applicable to grape vines. If pruned before cold weather is entirely passed, there will be little danger of bleeding. Summer pinching of the most vigorous shoots, as well as rubbing off the feeble ones which always appear in greater or less numbers upon all cultivated vines, are very important operations. Annual pruning of grapevines is generally conceded to be necessary, but the equally essential manipulation in Summer is far too frequently neglected; hence the numerous complaints of failure to obtain well ripened fruit or vigorous canes for use the following season. A few canes, and those of vigorous sturdy growth, are far preferable to a great number and all weak and slender. The former are seldom secured without attention in Summer, no matter how carefully the annual pruning may have been performed.

The lesson we would inculcate by the foregoing, is that the first steps in the improvements of plants calls for a corresponding care in their culture. The first pruning which may be considered as having been done at the time of taking the buds or coin from the parent stocks, makes a second in the life of the tree or vine necessary, because henceforward the plant is placed under artificial confinement.

The *Gardener's Monthly* says: "Basket plants often suffer from too much or too little water. If from too little the leaves curl or fall, and the plants have a dried up appearance. If too much, they get yellow and drop off. As a rule, a basket in a warm room should be taken down once a week, soaked in a bucket of water, then drained and hung up again. Every day during the rest of the week a little water may be given the plants, and something put under to catch the drip. Some baskets have no provision for the escape of moisture. These are dangerous. Still some people manage to watch closely, and do well with them. Fern cases do best when given a little sun; for, though ferns are supposed to grow naturally in shady spots, it is because there is generally a more humid atmosphere. If they can get this moisture they rather like light.

Michigan Horticultural Society—Grape Culture.

At the monthly meeting of this Association, in Grand Rapids, President Bradford read a paper on "Grape Cuture," which he said was intended for those who love grapes, but have never raised any. He recommends trenching the ground to the depth of eighteen to twenty inches before planting, which costs from $10 to $15 per acre, but pays from 50 to 100 per cent. per annum. If trenching is dispensed with in small lots, where only a few vines can be planted, space may be economized by digging and enriching a strip two feet wide on one or both sides of the garden walk. If both sides are used, a space of two feet should be left between the rows. The rows should be left four feet apart, and the vines from four to six feet apart in the rows. The latter should run north and south, or better, southeast and northwest. With the vines planted four feet apart in a given space, the produce at the end of two years will be double the quantity yielded when the vines are planted six feet apart; at the end of the fourth year there may not be any material difference.

For early bearing, he recommended the selection of good two year old vines; those which have not been pruned and transplanted the previous year, are best. In planting, the roots should be exposed as little as possible to the sun and wind. If the vines are planted in the Fall, they must be protected by a covering of earth, or some other material. The holes for the vines should be eighteen inches in diameter, leaving the bottom after well loosening the soil, six or eight inches deep in the centre, and eight or ten at the circumference. Stakes from six to eight feet in length should be set in the ground just back of the centre of the mould.

Before planting, cut back the ends of short bruised roots, and cut the long ones back to eight inches. Place the crown of the roots on the mound in the centre of the hole, and spread the roots out evenly all round; cover with two inches of fine, rich soil, put on and pressed down with the hand. Fill up the hole to a level of two or three inches above the crown. Horse or cow manure to the depth of one inch may be put on the surface.

Cut the cane back to two or three well developed buds, and when the shoots from these have made a growth of six or eight inches, select the best one and cut off all the others, as but one shoot must be allowed to grow the first season. This shoot is to be tied to the stake and the laterals, after making three or four leaves, must be pinched back to within one leaf of the base, and the seed laterals the same. At the end of October the young vine should be cut down to within twenty-four inches of the ground and laid down and covered. In Spring, after the frost is well out of the ground, the vine should be taken up and tied to the stake.

As soon as the buds start, rub off all except the four upper ones. Only two shoots are to be grown the second season. The reason for allowing four buds to make a short growth is that in case of accident to the upper shoots their places can be supplied by those from below. After the upper ones are long enough to be tied to the stake, the lower ones may be rubbed off. The two shoots are to be treated like the single one of last season, by pinching off the laterals, etc., and at the end of Angust the tops of the shoots should be pinched off, to make them more stocky, and to ripen the wood.

In October there will be two canes ready for the formation of arms. If the vines have been planted four feet apart, cut the shortest cane back to within four feet of its base, for the lower arm, and the lower cane to within six feet of its base for the upper arm. If the vines were planted six feet apart, the canes should be cut three and four feet respectively. If the ground is lower at one end of the row than at the other, commence at the

upper end and lay the vines down in the direction of the lower.

As soon as the frost is out of the ground in the Spring, a trellis must be constructed with upright posts and horizontal strips, or wires. When fastening the vines to the trellis, the short arm should be trained along the top of lower strip or bar, and tied with bark or twine. The long cane should be fastened to the top bar, about twelve inches from the perpendicular, and the arm brought down in the same direction as the lower one, and tied to the strip of wire.

No shoots should be allowed to grow, except on the arms, and these should be thinned to six inches apart, by rubbing of the lower ones. Summer pruning is highly recommended, but this does not consist in removing the leaves, but in removing every superfluous shoot, and in repeatedly pinching or cutting the laterals. One-third more grapes may be perfected in a given space with summer pruning than without it. By giving protection in Winter, the grape crop is surer than any other kind of fruit.—*Western Rural.*

Fireside Selections.

Spring Has Come Again.

The paths are pleasant through the land,
Where Spring has gone before,
O lay your hand, love, in my hand,
And let us love once more.
Shall promises prove empty air;
Shall all our vows be vain,
Now that the flowers are everywhere,
And Spring has come again?

Nor smiling sea, nor sky above,
Can make me happy, nor
The sweet green earth: it is your love
That I am thirsting for.
E'en as the grass and pale flowers fair
Thirst for the dew and rain,
Now that the birds sing everywhere,
And Spring has come again.

Should Spring-time teach the bird to sing,
And calm the angry sea,
Should she who bringeth sweet things, bring
Nothing for you and me?
No love to banish all our care,
And take away our pain,
Now that the flowers are everywhere,
And she has come again?

O love, do you remember yet
The place beneath the tree,
Where cowslip grows, and violet?
Oh, come to it, that we
May still be happy, resting there
Where we so oft have lain,
Now that the birds sing everywhere,
And Spring has come again.

How to be Polite.

Do not try too hard to be polite. Never overwhelm your friends by begging them to make themselves at home, or they will soon wish they were there. Show by your actions rather than your words that you are glad to see them. Have enough regard for yourself to treat your greatest enemy with quite politeness. All petty slights are merely meanless and hurt yourself more than anyone else. Do not talk about yourself or your family to the exclusion of other topics. What if you are clever, and a little more so than other people, it may be that other folks will think so, whatever they ought to do. It may be interesting to you to talk over your ailments but very tiresome for others to listen to. Make people think you consider them clever and agreeable and they will be pretty apt to have a pleasant opinion of yourself. Treat people just as you would like to have them treat you. It is much easier to lose the good opinion of people than to regain it; and when he or she does not care for the good opinion of others he or she is not worthy of respect. Do not excuse your house, furniture, or the table you set before your guests. It is fair to suppose their visits are to you, not your surroundings. The whole machinery of social intercourse is very delicate and intricate, and it is our business to keep all places of possible friction well supplied with the oil of politeness.

The spelling schools that are spreading all over Ohio are said to have demonstrated the fact that a woman can spell five times better than a man.

Love, Fear, Hate.—Love nothing but what is just and honorable; fear nothing but what is ignoble; and hate nothing but what is dishonest.

Has it never occurred to us, when surrounded by sorrows, that they may be sent to us only for our instruction, as we darken the cages of birds when we wish them to sing.

Beginning Badly.

Hard times compel economy, and they suggest a very common fault among young people—beginning life with extravagant habits. Most men who acquire large wealth begin prudently, spending little and saving much. The following incident has a moral:—

One old gentleman, who commenced life as a poor boy, had, by mastering the difficult steps to final success, gained considerable wealth as a merchant. When he arrived at old age he retired to private life, to live in ease and comfort on his income, leaving a prosperous business in the hands of his son.

In three years the young man was bankrupt. He had failed in business, and was compelled to take a position as clerk in a stranger's store.

His father was asked why it was that in a business in which he had succeeded so well, his son had failed.

He gave this characteristic answer:—

"When I first commenced business my wife and I lived on porridge. As my business increased we had better food; and when I could afford it we had chicken. But you see Johnnie commenced with the chicken first."

Sea Shells in the Andes.

Sea shells have been found in the Andes mountains fully 15,000 feet above the sea! When I first heard this I had *almost* a mind to declare that I didn't believe it. But it is never very wise to say that one doesn't believe anything that's wonderful without stopping to inquire further; there are so many wonderful things that are true. And this is true. The great traveler and naturalist, Humboldt, picked up some sea shells at that great height on the top of the Andes. How did they get there? It is not probable that the ocean waters ever rose to such a height, but it is quite likely that the now magnificent Andes were once very low ridges beneath the sea, and that these great fires which are always burning in the heart of the earth and raging to get out, once raised up by a might effort the whole long and grand range of Andean mountains. So the sea shells were carried up with the mountains high and dry as they are to-day, and the poor shell-animals wondered at the dreadful change, and sickened and died in the bitter, dry mountain air long, long ages ago.

Errors in Books.

It is related of a literary man in Greece, that he undertook to publish a book which should not contain a single error. To accomplish this result, after having the proof-sheets carefully revised by different persons, he hung them up in a public room of the college, offering a reward of one guinea to any person who would detect any error therein. Many of the learned, attracted by a desire to succeed, and others by the reward, carefully perused the sheets. When the book make its appearance, on the very first page, and in the second line, a typographical error was discovered. All things considered, the accurate state of printing in general is to be admired, and errata ought more freely to be pardoned than the fastidious minuteness of the insect eye of certain critics has allowed.

Gaiety.

There are two kinds of gaiety; the one arises from *want* of heart; being touched by no pity, sympathising with no pain even of its own causing, it shines and glitters like a frost-bound river in the gleaming sun. The other springs from *excess* of heart; that is, from a heart overflowing with kindness towards all men and all things; and, suffering under no superadded grief, it is light from the happiness which it sees. This may be compared to the same river, sparkling and smiling under the sun of summer; and running on to give fertility and increase to all within, even to many beyond, its reach.

Russian Proverbs.

Every fox praises his own tail.

A debt is adorned by payment.

Roguery is the last of all trades.

Never take a crooked path while you can see a straight one.

Fear not threats of the great, but rather the tears of the poor.

Ask a pig to dinner and he will put his feet on the table.

Under a Microscope.

Any of our readers can test for themselves the curious revelations of a microscope by the purchase even of a cheap instrument. It will well repay the expense incurred. Here is a list of some of the wonders seen through a microscope:—

Insects of various kinds can be seen in the cavities of a grain of sand. Mold is a forest of beautiful trees, with the branches, leaves, flowers and fruit. Butterflies are fully feathered. Hairs are hollow tubes. The surface of our bodies is covered with scales like fish; a single grain of sand would cover one hundred and fifty of these scales, and yet a single scale covers five hundred pores. Through these narrow openings the sweat forces itself out like water through a sieve. The mites make five hundred steps a second. Each drop of stagnant water contains a world of animated beings, swimming with as much liberty as whales in the sea. Each leaf has a colony of insects grazing on it, like oxen on a meadow. A speck of potato-rot the size of a pin head contains about two hundred ferocious little animals, biting and clawing each other savagely.

VARIETIES.

Strive to elevate yourselves, but never by pulling others down.

What it Costs to be a Loafer.—Does the young man who persists in being a loafer, ever reflect how much less it would cost to be a decent, respectable man? Anybody can be a gentleman if he chooses to be, but it is expensive being a loafer. It costs time—days, months, years of it. It costs friends. Your consorts will be only the buccaneers of society. It costs health, vigor, comfort—all true pleasure in living, honor, dignity, self-respect, and the respect of the world when living, and finally all regret and consideration when dead.

Mental Cultivation.—What plowing, digging and harrowing is to land, thinking, reflecting and examining is to the mind. Each has it proper culture; and as the land that is suffered to lie waste and wild for a long time will be overspread with brushwood, brambles, thorns and weeds, which have neither use nor beauty, so there will not fail to sprout up, in a neglected, uncultivated mind, a great number of prejudices and absurd opinions, which owe their origin partly to the soil itself, the passions and imperfections of the mind of man, and partly to those seeds which chance to be scattered in it by every kind of doctrine which the cunning of statesmen, the singularity of pedants, and the superstition of fools raise.

Ear-rings and Other Trinkets.—My dear girls, leave this trinket show to Indians, and use no other jewelry than a neat, small pin to hold the collar, and a delicate small chain to guard your watch. The watch should be in a pocket and not slipped under the belt. The belt must be mischievously tight to hold the watch. To wear a watch pushed half-way under the belt is to constantly expose it to accident, and at best to make a vain announcement of the fact that you have one. In England it is a common remark, that you may know a nobleman by his plain dress, and by the absence of jewelry. And I will add, that everywhere you will know a shoddy pretender by an excessive display of jewelry. No person of really fine culture delights in an exhibition of trinkets or gewgaw of any kind. The refined soul cannot make an ornamental parade.

The *Pall Mall Gazette* says: In the present day a conviction seems to be dawning on the minds of many that it is well not to stake too much on the certain operation of instinct of any sort. An impetus will perhaps be given to this tendency towards caution by the action of a rat—not indeed a seceder from the opposite camp, but a bona-fide rat—who has declined to follow the course assigned to him by the best zoologists. This rat was destined the other day as breakfast for a serpent in the Jardin des Plantes at Paris, and was with this purpose introduced into the cage of the reptile. It was unquestionably the rat's duty, on being brought face to face with the serpent, to have become fascinated and to have obeyed the instinct which is supposed to deliver "such small deer" an unresisting prey to the destroyer. Far from fulfilling the duty traditionally incumbent upon him, this daring innovator flew at the throat of the snake and bit it so severely as to produce instant death, and a loss to the garden of about 2,000 francs' worth of serpent. This unexpected result has, however, had the good effect of determining the managers of the Jardin des Plantes to feed their reptiles upon dead animals only, the "fascination theory" having proved an utter failure.

The Beauty of Our Country Homes.

[FROM "HOMES AND HOUSES," BY D. G. MITCHELL.]

Before we leave wholly the ex erior of the house, I think a word or two may be worthily said of the immediate surroundings—in way of shrubbery, turf or graveled areas.

The French love very much to set off their house walls—even in the country· by bringing up broad stretches of graveled surface to the very mason work. This treatment may make more clearly discernible the nicety of architectural execution; but it appears to me sadly garish and un home like. With a school or public building, where many feet tread close upon the walls, there is apology for it; but with a homestead there is none. The ordinary English manner of bringing up graveled or paved surface to the house walls only where such surface is positively needed for approach-ways, and of covering all other parts of the closely out-lying ground with turf or low shrubbery, is far more agreeable to the eye, and serves better to associate intimately the country house (as every country house should be associated) with its own bit of surrounding landscape. Few exterior charms about a home can compare with that which impresses you somehow with the notion that the house is a positive belonging to its situation, and is so adapted to it and allied to it by the caressing green things around it, that it seems (if I may be allowed the exaggeration) to be only a most happy and natural crystallization of a man's home wants into that shape under the influences of the scene and of the surroundings. In this most desirable and artistic "keeping" of home and landscape may be found a valid argument for that use of homely material, in way of rough boulders, which is now fortunately gaining favor. It would be consummate folly to go far out of the way to seek such; but if they are at hand along all adjoining roadside, can there be a better and happier mating of the home to the landscape than in laying hands upon this natural wreck of the hills, and by deft adjustment of their varying shapes and colors building up sheltering walls that shall keep all the lichens which dapple the country fences, and shall invite the vines?

To return now to the matter of approach—there should be a neat graveled way to principal door and to the service entrance. Beyond this, and as regards secondary entrance—such as that to a verandah from a bit of lawn surface the question is to be determined by those common-sense rules which dominate, and always should, all matters of taste. If such an approach is to be so commonly used as to impair the turf, by all means provide against it by a graveled walk; if otherwise, or the surface is only to suffer occasional summer service, nothing can be richer and more fitting than a carpet of turf—always provided that the same be kept evenly shorn. In no event, however, should such approach of lawn surface to the very step involve a fatiguing watchfulness lest children may despoil it or chance visitors impair it; there should be no yielding of the door-side comfort or convenience to any whim of gardening taste. The neatness or the order that forbids free coming and going to either porch or door is one that cramps home enjoyment—to which main end all gardening and architecture about a country house should persistently point.

Allen's Planet Jr. Drill and Hoe.

We consider this the most complete little implement we have yet seen for garden purposes. The drill itself is a good one, but the weeder we consider the victor, as it can be run along the drills and take the earth from or place it against plants, or leave the ground level and well prepared. It does the work as well as can be done by hand, and finishes a row as fast as a person walks. Those who use such an implement must be able to raise crops at such prices as would be ruinous to those who depend on the old slow system of weeding their crops. S. L. Allen & Co., Philadelphia, supply them.

The Agricultural Exhibitions of 1875 will be held as follows: Guelph, Sept. 14, 15 and 16; prizes offered, $8,000. Provincial at Ottawa, Sept. 21, 22, 23 and 24. Hamilton, Sept. 28, 29, 30 and Oct. 1; $8,000. Western Fair, London, Sept. 28, 29, 30 and Oct. 1; $12,000.

Patrons of Husbandry.

Granges Organized Since Last Issue.

The first name in list is the Master of the Grange; second, Secretary.

155. Elimville, Huron. Leonard Hunter, Exeter; S. P. Halls, Elimville.

156. Alliance, Middlesex. George Lethbridge, Strathburn; John C. Dobie, Strathburn.

157. Farmer's Union, Lambton. Francis Hearney, Watford; Robert Cran, Watford.

158. Woodhill Grange, Peel. Thomas Ward, Woodhill; Geo. H. Ward, Woodhill.

159. Granton, Middlesex. Philip Mowbray, Granton; James Grant, Granton.

160. Egremont, Grey. Jas. Rogers, Dromore; Thomas Fergus, Dromore.

161. Sulford, Oxford. William B. Nellis, Sulford; James Dumpty, Sulford.

162. Livingston, Bruce. George Armstrong, Teeswater; Robert Watson, Teeswater.

163. Kilbride, Halton. John Agnew, Kilbride; Thomas Rastel, Lowville.

164. Queen's Valley, Grey. Thomas Ellis, Kimberley; John Hurlburt, Kimberley.

165. Olinda, Essex. John H. Stewart, Olinda; A. S. Fox, Olinda.

166. Apple Grove, Elgin. David King, St. Thomas; George Potticay, St. Thomas.

167. Sydenham Valley, Kent. Wm. Bolton, Dresden; D. F. Danard, Dresden.

168. Birr Grange, Middlesex. Joseph Ferguson, Birr; Robert Hobbs.

169. Chatham Centre, Kent. David Picket, Appledore; Thos. McKerrall, Appledore.

170. Phœnix, Middlesex. Hector McFarlane, Glencoe; B. J. Donaldson, Glencoe.

171. Langstaff, York. John Duncan, Richmond Hill; C. L. Hollingshead, Richmond Hill.

172. Thames Road, Huron. Robert Gardiner, Farquhar; George Hickney, Farquhar.

173. Knowlton, Brome. Levi R. Whitman, Knowlton; A. E. Kimball, Knowlton.

174. Caledon. Wm. Clarke, Caledon; Wm. Bell, Caledon.

175. Dublin. John Bradley, Campbell's Corners; Peter McLeod, Campbell's Corners.

176. Darlington Centre. Wm. Cryderman, Hampton; C. W. Smith, Hampton.

177. Mono Road. Thos. Anson, Mono Road; Robert Shields, Mono Road.

178. Rosebud. Alex. Hume, Watford; H. J. Leacock, Watford.

179. Inman. Joseph Mumby, Dunville; Richard Hicks, Dunville.

180. Millcreek. Wm. Hewgill, Heathcote; Samuel Coodfellow, Heathcote.

181. Midhurst. John McGowan, Midhurst; Geo. Sneath, Midhurst.

182. Gowanstown. Wm. Turnbull, Shipley; Robert Wilson, Shipley.

Artificial Manures.

SIR,—Owing to the worn-out condition of a great portion of the land in this section, and the impossibility of obtaining barn-yard manure in sufficient quantities to renovate it thoroughly, several members of this and the neighboring Grange are this year experimenting on a small scale with artificial manures of different kinds, to endeavor to find out which would be the most profitable to employ on a more extended scale next year. I have been requested to ask you or some of your numerous correspondents as to the value of salt as a renovator, the principle by which it acts on the soil, and the quantity to be used per acre; also, the price per ton of refuse salt at the wells, and the best manner of shipment.

JOHN JACKSON,
Secretary Grange No. 66.

Newburgh, May 22nd, 1875.

[The above is received as part of the paper is being printed. We have not space for reply in this supplement. Perhaps some other Secretary, Patron or reader of this paper will reply in time for next issue; if not, we will give some information on the subject.—ED.]

Superphosphate.

Superphosphate of lime is coming into demand rapidly in Nova Scotia. The Brockville Chemical works have shipped five car loads of ten tons each, for that part of Canada. Last year they only shipped one car load to that place. We should like to hear from our Nova Scotian subscribers the results of their trials, as to the quantity used and the method of application, as many of our readers would like to hear more about its use.

Our readers who have the pleasure of a lawn, and have no mowing machine except the scythe to cut it with, may be pleased to know that Levi Cossitt, of Guelph, Ont., makes a lawn mower that does its work quite as well and is less liable to get out of order than some American mowers we have seen, and for which nearly double the price has been paid. We have a sample machine at our office. Let us support Canadian mechanics. Before purchasing, see Cossitt's; they are procurable in each town.

Commercial.

Produce Reports.

The early prospects of another season of abundant produce in Great Britain is from all present appearances to be verified. The very favorable weather for preparing the soil, in the fall of 1874, and its excellent condition when receiving the seed, was succeeded by a season generally favorable throughout the winter and spring months, and by the latest reports passed through the wintery ordeal uninjured, so that the first promise has had no check. From France the "advices continue to be couched in satisfaction." From other parts of the continent of Europe the reports are on the whole favorable, though there is a desire on the part of farmers for more moisture for the growing crops.

From the United States we have reports that much of the fall wheat is winter killed in the West; in the South there is good promise of heavy crops. It is estimated that one-third of the fall crop in the Western States is killed.

The Canadian wheat prospect is, we believe, on the whole, favorable, though reports are conflictory. The reports, even from the same county, being in some instances quite contradictory. Having a more prolonged period of undisturbed snow than our southern and western neighbors, our fall crop has been freer from injury.

Produce Markets.

In England the favorable weather for the growing crops has caused a depressing effect on the price of breadstuffs. The large stocks of grain and flour in the hands of producers and merchants aid this downward tendency. With a season like the past, not over charged with too much moisture for the English markets, there would be another year very favorable to English purchasers. But what is yet in the womb of time is a matter of mere speculation. English prices are low. Wheat—a downward tendency. Such are our English advices, and they have their effect on the American markets.

NEW YORK.

May 24.—Flour dull, prices still in buyers' favor; receipts, 5,000 bbls; sales, 11,000; quotations unchanged. Rye flour steady, at $4 40 to $5 50. Wheat dull, slightly in buyers' favor; receipts, 47,000 bush; sales, 36,000 bush, at $1 17 to $1 18 for No. 2 Chicago; $1 35 to $1 40 for winter red western; $1 41 to $1 43 for amber. Rye firm and quiet. Corn slightly in buyers' favor, and in limited demand, at 84c to 85c for western mixed; 85c for do. yellow. Barley quiet; nominally unchanged. Oats, steady, at 75c. Pork, firm, at $21 50 for new mess. Butter, 15c to 22c for N Y State and Pennsylvania; 20c to 28c for new do.

CHICAGO.

May 24.—Flour dull and unchanged. Wheat, opened firm but closed dull; No. 1 spring at $1 05; No. 2 do at $1 00½; spot at $1 01½ for June; $1 04 for July; No. 3 do at 97c; rejected, 90½c. Corn, quiet and weak; No. 2 mixed, new, 68c; regular, 69c, spot. Rye, dull and unchanged. Barley, firm and in fair demand; No. 2 spring at $1 37, spot; $1 40 for May and $1 10 for September. Pork, advanced and in fair demand at $20 75 to $20 08 for spot. Corn, easier, at 69½ for June. Lard, lower, at 15½c for July.

DETROIT.

May 24.—Flour, dull and unchanged. Wheat, weak, buyers holding off; No. 1 white at $1 27. Corn, quiet; No. 1 mixed at 75c. Oats easier; white western at 70½c.

LIVERPOOL.

May 24.—Flour, 21s to 22s; red wheat, 8s to 8s 8d; red winter, 9s to 9s 4d; white, 8s 11d to 9s 2d; club, 9s 2d to 9s 6d; corn, 32s 9d to 33s; barley, 3s 6d; oats, 3s 4d; peas, 41s; pork, 75s; lard, 64s 6d; beef, 72s 6d; bacon, 51s 9d to 53s 9d; tallow, 41s; cheese, 63s new.

MONTREAL.

May 24.—Flour—superior extra, $5. Strong bakers', $4 60. Spring, extra, $4 17 to 4 29.

TORONTO.

May 25.—Wheat, fall, $1 00. Spring, 96c to 98c.

LONDON, ONT.

May 25.—Wheat, per cental—White, $1.50 to $1.65; Red Winter, $1.40 to $1.50; Spring, $1.45 to $1.52 Barley, $1.30 to $1.55. Peas, $1.25 to $1.35. Oats, $1.32 to $1.38. Rye, $1.10 to $1.20. Beans, 90c to $1.25. Keg butter, 14c to 16c; roll butter, 16c to 22c. Cheese, 11c to 14c. Hay, $12. Potatoes, per bag, $1.10 to $1.30. Wool, 30c per lb. Clover seed, $5.50 to $6.00. Timothy seed, $3.00 to $3 25. Flour, $2.25 to $3.00. Oatmeal, $2.75 to $3.00. Cornmeal, $1.75 to $2.00. Rye Flour, $1.75 to $2.

Stock and Dairy.

To Prevent the Air of Dairy Rooms from Becoming Electrtzed.

The best preventive of the injurious influences of an excess of electricity in the air of the dairy room, is to remove its humidity, as that condition of the atmosphere is most favorable to electric conduction and retention. I saw it stated in a late issue of the *Rural New-Yorker* that the Swedes practice building fires in their dairy rooms on the approach of thunder storms. This mode of preventing the evil arising from an excess of electricity in the atmosphere of a dairy, may be successful if very skillfully managed; but it would be necessary to have the fire without the apartment, as the admission of air to a degree to support combustion, it being admitted from the external atmosphere, would not be effectual.

While the loss occasioned by the electrical condition of the air in the dairy is often great, it is very questionable whether an attempt to avert it by heating the dairy is practicable. It will involve a special arrangement for heating to avoid the difficulty above alluded to, also to avoid a degree of heat that might, in result, be as hurtful as the excess of electricity It is very little known to dairymen as yet; but I claim that I have provided the most economical and most effective mode by which to guard against the excess of humidity in the air of the dairy room, also of excluding air when it is most heavily charged with electricity without interfering with the ventilation of the apartment. I refer to the system of ventilation which I use in my Gulf Stream Refrigerated Dairy Room. The air is all admitted to the dairy (at all seasons) through subterranean ducts.

The temperature of the ground in which the ducts lie being lower in summer (the season in which alone there is difficulty from the cause under consideration) the vapor in the air is condensed on the interior of the duct and is conveyed to a drip well, just without the dairy. Thus drying the air well, I claim, cause it to eliminate its exccess of electricity through the vapor condensed, and will give it off to the earth.

But this is not the only advantage derivable from the condensing power of the sub-earth ducts. The entire interior of the ducts being moistened, any particles of duct floating in the air, circulating in them by coming in contact with the moistened surface, is seized and held by the moisture and is conveyed and deposited in a drip well. It is important to state that I construct the dairy room as close as possible, so that no air is admitted except through the subterranean ducts; hence all air admitted enters the dairy at the temperature of the earth below solar influence, or at about 60°—the most desirable temperature for the butter dairy room and withal, the air is constantly changing. If it were practicable, it hardly seems desirable to attempt to improve on my system of ventilation for dairy rooms. *J. Wilkinson, Baltimore, Md.*

Prospective Dairy Values.

It is one of the fundamental theories is systems of political economy that in production, the productive ability will tend toward the profitable speciality so far as possible. This tendency has been at work toward supplying the profitable demand for dairy products ever since the English markets were open to the American article. A dozen States have devoted a part of their Agricultural ability to this end. Canada has proved a giant in dairy manufacture. The exports of cheese from New York city have grown from 15 million pounds in 1860 to 89 million pounds in 1873, and, yet the dairymen have had a year of unusually high prices, and evidently the demand is not yet supplied.

The student of political economy can find an interesting matter for examination in this wide effort of productive ability to fill the demand for a speciality, and the demand still beyond the result of the effort. The plain indication of existing trade facts is that the manufacture can go further with profit to those engaged in it. Of course it takes longer to increase the supply of an animal product, like milk than a bread product like wheat. A field may be changed from one grain to another in a year, but to make pasture and grow dairy cows and build factories, takes several years. And it has been several years since the tendency towards cheese making began. It has reached an extent which would have swamped the demand for almost any other speciality whose production was increased in like proportion, and we may say that the industry has passed the time when according to ordinary computations the supply should have exceeded the demand. It has gone along prospering and to prosper, while other Agricultural specialities have risen and fallen time and again Hops have undergone a number of revolutions, the price of wool has covered the hills with sheep and then sent them all to the butcher, pork has been profitable and unprofitable, grain has fluctuated between riches and poverty. But the dairy product, in spite of the constant and enormous accessions to the ranks of producers, has moved steadily onward without any thing wide enough to be called the shadow of a disaster. These are the facts of the manufacture as we look upon them from the trade. Now what do the facts indicate.

The la est writer upon political economy, Prof. Cairnes, remarks that the fluctuations of the market price of a commodity within the sphere of Agricultural production, has been found to vary differently according as it has been drawn from the vegetable or animal kingdom. The vegetable product is liable to sudden and considerable, but comparatively short fluctuations, while the commodities of animal origin rarely rise rapidly, but when an advance is established, it is commonly held for a long time at the increased rate. Thus the price of wheat in England has halved and doubled within a few years, but there has been no such sharp fluctuation in a commodity of animal origin. Butcher's meat has shown the most marked advance in price, but he believes that unless the value of gold should fall by some unexpected occurrence there is not the smallest probability that the price of meat will not return to what it was twenty years ago.—*Utica Herald.*

Oil Meal for Calves.

In answer to "A Subscriber," W. W. Aldrich, Elyria, Ohio, has this to say about oil meal, in the *Ohio Farmer*:—

"A Subscriber" wants to know if oil meal is good for calves, and how it is fed. I answer it is good, and will state how mine are fed, and how cared for until four years old. I have three apartments for calves, each about fifteen feet square, with rack and manger on one side for feeding hay and meal. I let them run loose; and keep them well bedded in the summer with saw-dust, and in the winter with wheat or oat straw. I have twenty-four stalls for tying up cows, which are so arranged that by sliding a small door the calves can have access to the cow stables. The calves are turned in with their mothers twice a day, and help themselves to all the good, rich, new milk they want. This is contanued until they are four months old. I commence feeding meal as soon as they will begin to lick it, which is when they are from two to three weeks old; their feed is corn and oats ground together—one-third oats—and when we take a grist of wheat to mill, the bran is mixed with the corn and oats, which makes a lighter and better feed for calves than clear meal, and is not so apt to make them scour.

To sum up the feed it amounts to this—corn, oats, bran, and a little oil meal mixed in, just to make their coats shine and their skin mellow and pliable. I feed nice, bright clover hay, and when grass is long enough to cut, have a small patch handy to the barn, and feed green, a little and often; keep them in the barn until one year old, after that turn them out into good pasture, and they will take care of themselves. But don't stop here; keep an eye on them, see that they have their salt and plenty of water and shade. If you don't believe this treatment will make good calves, just take a look into my calf stables and be convinced.

Butter and Cheese Interest of the United States.

The magnitude of the Butter and Cheese interest of the United States is but poorly conceived, not only by the dealers themselves, but more especially by the producers. In a concise way we will endeavor to give some idea of the interests of these products; will also speak of the general style of cheese required, together with the color. The subject of skimmed or creamery cheese may also be properly discussed.

The consumption of butter for home use, from our most reliable sources, is estimated at 1,387,000,000 pounds; the exports from the States and Canada at 15,000,000, which: at an average of 30c. per lb., would give the value of butter alone at $420,600,000. For the year 1874 the receipts of cheese in New York were 2,046,575 boxes; the exports 90,611,057 lbs.; from Canada 23,183,223 lbs., giving a total American export of 113,794,280 lbs., which at a valuation of 13c. per lb., would give an aggregate of $14,793,256.40. Estimating home consumption at 24,424,560 lbs., at 13c. per lb., the amount is $3,175,192.80 or a grand total of $438,568,448.20.

The receipts of cheese for the year ending January 1st, 1875, may be estimated at 2,062,951 boxes; the exports at 1,679,322, an excess of both receipts and exports over the year 1874. The general trade in both branches, but more especially in exports, is steadily growing, and whilst we give a good article at a moderate price, should the entire grazing interest be developed in cheese production, the demand would be equal to the supply. Here it may be most pertinent to speak of the growth of skim or creamery interests. The past season this style of cheese moved off very fairly and showed to the producer a profit over whole milk cheese. The prospect for the coming season does not, however, show so fairly. As a rule, exporters have lost much more heavily on this class of goods than on fine cheese, and all exporters assert that hereafter they will buy this style of goods at a much greater difference in price than in any previous year.

The best style for export is a Cheddar shape, weighing from 50 to 60 lbs. The past season, white cheese has been comparatively a drug in market, whilst at present writing fancy colors are worth 16½c.; the extreme for the same quality in white is 16c. At some special seasons white cheese is in excellent demand, but not for a long enough period for any manufacturer to properly gauge the market. Fine colored cheese is always in demand, and we might suggest that white cheese should only be produced on order from the buyer.

The color of cheese should be a bright shade of straw for export, and for home use a light shade. Home trade requires through the summer a style of cheese like the Ohios, but of better quality, weighing from 30 to 45 lbs., flat in shape. When the heated term is over, the size is not of material import. Too much care cannot be given to permanency of color, especially in the fall. The common basket annatto will not be at all reliable. A cheese off color, so called, quality being fine, will shrink in value fully one-twelfth.

Of the prospects for cheese the coming season, of course we cannot speak with any authority, still we think it safe to say that prices must average much lower than the past year. Last season neither receiver nor exporter fairly made a profit. This, together with the shrinkage in every other branch of industry, necessitating lower wages, would tend to justify the above. The stock of cheese on hand January 1st, 1874, was estimated at 200,000 boxes; January 1st, 1875, at 175,000.

The butter interest, as is well known, is simply demoralized. The entire fault seems to be that the producers were not willing to sell at a fair valuation in the fall, placing their goods above the market so that buyers could not use the product. The belief is current among those best informed that Western butter will average in price to the producer more than State. This, in consideration of the marked difference in quoted prices, is worthy the attention of dairymen, viz.: To market their produce at current rates, and not constitute themselves holders.

Good Cows.

The largest recorded yield of a single cow that is perfectly well authenticated, is that of an animal kept at the jail, at Lewes, England. In eight consecutive years she gave 9,720 gallons, or an average of more than 1,210 gallons a year. She was milked one year 328 days and gave 1,230 gallons, which made 540 pounds of butter, or at the rate of a pound of butter from 22 pounds of milk.

A Mr. Scott, of Shaftesbury, V., had a cow whose milk yielded 504 pounds of butter in 1866, or at the rate of one pound of butter from 20 pounds of milk.

An Ayrshire cow recently yielded 399½ pounds of butter in ten months after calving, or between March 10th, 1866 and January 10th, 1867, besides supplying a family with milk and cream.

It must be apparent that the proportion of butter will vary not only with the breed, but with the season of the year. The milk of the Ayrshire cow is generally richer in butter than that of the shorthorn, but not so rich as that of the Jersey or Brittany. The best returns of butter are generally got late in summer or early in the fall, September and October.

Uncle Tom's Department.

Prizes.

There was a lively competition between my nephews and nieces for the prizes, this month, and probably only for the busy season, it would have been keener. I would like to satisfy you all with one; but from the improvements you are making, I think the victors this time will have to work hard, or they'll come out second best at the next distribution. The prizes are awarded as follows:—1st, Mary Mayflower, Gloucester; 2nd, James H. Cross, Caledonia; 3rd, Canadian Cliff; Commended, Frank Lawson, Nilestown. If you are not in receipt of the prizes before receiving the June ADVOCATE, write at once and acquaint me of the fact, as the prizes should have reached you before this.

UNCLE TOM.

CHARADES.

44. At the farm I am useful when I am complete—
To the horse a delight, to the cow quite a treat;
I am sometimes, though seldom, considered a charm,
A precursor of fortune, a guard against harm.
But if from my name the first letter you take.
A creature of amourous passions you make;
And if you again my head should remove,
I am changed to a word that might mean above.
Make me complete and curtail me this time,
I originate then in a tropical clime.
I sometimes am used by fast young men
Their vices I help to conceal now and then.
Now take my whole name, and curtail and behead,
And without me this world would be dreary and dead.

G. A. GORDON, Colborne.

45. In the printing office my first is made,
Though it is not considered a help to the trade;
My second is an article—but I will not say what,
My third you might say if a smart blow you got;
My whole is to all who possess me a treasure,
For I give to my hearers a great deal of pleasure.

G. A. GORDON, Colborne.

46. My whole is in mansion and cot to be found,
Behead, I grow, but not on the ground;
Behead again, and you will find
Something indispensable to mankind.

CANADIAN CIFF.

47. HIDDEN ENGLISH RIVERS.

Can you seriously intend to make this journey.
I went to see the poor widow yesterday.
The exorbitant rent of the house is quite beyond my means.

E. M., Monckton.

48. HIDDEN ANIMALS.

My first is in house, but not in box;
My second is in dog, but not in cat;
My third is in rock, but not in fox;
My fourth is in mouse but not in rat;
My fifth is in seat but not in chair;
My whole is the name of an animal.

RHODA W. EASTMAN, Cornwall.

PUZZLES.

49. Take six and fifty-one, place nothing between them and add an n. The result will produce a musical instrument.

FRANK LAWSON, Nilestown.

50. Put five strokes to these six and make nine—
| | | | | | |

T. ANDISAN, Perth.

51. To a circular letter take care to prefix
Four times twenty-five, without any tricks;
One thousand inverted, and placed in the rear,
Will tell you what's useful to man, I declare.

D. D. GREEN, Belmore.

RIDDLES.

52. My person tall and slender waist
On either side with fringes graced,
Until this tyrant man espied,
And dragged me from my mother's side.
Now no wonder I look so thin,
This tyrant has stripped me to the skin.
My skin is frayed, my hair is cropped—
At head and foot my body lopped.
To vex me more, he took a freak,
He split my tongue to make me speak,
And now, which wonderful appears,
I speak to eyes and not to ears.
All languages I can command,
But not a word I understand.
My man, my master, is my slave;
I give command to kill or save.
I can grant a thousand pounds a year,
To make a beggar's brat appear.
The lawyer may forget his pleading;
The scholar can't forget his reading.
I die independent and forgot,
And on some dunghill left to rot.

53. Beneath the skies a creature once did dwell,
So sacred writers unto us do tell;
He lived, he breathed, in this vain world, 'tis true,
Yet he never sinned or any evil knew.
He never shall in Heaven's high kingdom dwell,
Or e're be doomed to feel the pangs of hell.
Yet in him an immortal soul there was,
Which must be damned or dwell among the just.

MARY MAYFLOWER.

54. CHRONOGRAPH.

1st. One of the Highland chiefs who first refused to submit to the governmsnt of Scotland by William and Mary. He and his family, and their dependants, were inhumanly massacred, Feb. 14, 1692. 2nd. The murderer of Edward Ironside. 3rd. The eldest son of Brute, who is said by Capgrave to have landed in England B. C. 1116, and to have named it Britayne, after himself. 4th. A quack historian. 5th. A Greek philosopher's wife. 6th. A Dutch painter much encouraged by Charles I. 7th. The founder of the fifth state of the Saxon Heptarchy. 8. An engineer who died in 1859. The initials will give the year in which pocket watches were first used in England. J. CROSS, Caledonia Springs.

Answers to Puzzles in May No.

31. Apple, plum, melon, lemon, tomato, date. 32. George Washington. 34. 9 9 9. 35. Catkin. 37. Ploughshare. 38. Tree. 39. L. 40. Violin.

35—	5			24			28			20	
	4	36.—	3	3	3	2	5	2	4	1	4
	8		3		3	5		5	1		1
	9		3	3	3	2	5	2	4	1	4
	26			41.—	A	B	R	A	M		
	73				B	R	A	V	O		
	01				R	A	V	E	N		
	100				A	V	E	R	T		
					M	O	N	T	H		

42. Czar, Zone, Anne, Reed. 43. Oren, Rome, Emma, Neat.

ANSWERS RECEIVED TO MAY PUZZLES.—H. C. Chapman, Colborne; Annie A. Glennie, Woolwick; Tommy Ruston, Sebringville; Mrs. Ranson, Harpley; R. Whiteside, Ellesmere; Alice Mary Deadman; James Stevenson, Fitzroy; Willie A. Rutherford, Millbank; D. D. Green, Belmore; Martin Lang, St. Mary's; Frank Lawson, Nilestown; Jas. H. Cross, Caledonia; E. Finn, Winnipeg; John James, Montreal; John Holmes, Winchester; Jno. Houser, Canboro; Maggie Jane Stevenson, Fitzroy; M. J. Davidson, Fallowfield; Henry Fitzjohn, Lowville.

APRIL ANSWERS TOO LATE FOR MAY NO.—Jos. Hynes, San Francisco; J. Walsh, Oregon; A. Bremner, St. John, N. B.; J. Simms, Ottawa.

How He Knew Him.

A distinguished professor in one of the American theological seminaries relates the following: Being in Germany, with a red covered book in his hand, a German, supposing the book to be "Murray," asked in English, if he was not an Englishman? The professor replied in German that he was not. The conversation presently turned upon an object of architectural beauty near at hand, in which the professor incidently raised the question of its cost. "Sir," exclaimed the German instantly, "you are an American!" "How do you know that?" rejoined the professor. "Sir," continued the German, striking an attitude and assuming a tone of great solemnity, "upon the resurrection morn, when we stand before the Great White Throne, the first question of every American in the whole assembly will be, "How much did that throne cost?"

A celebrated Scotch divine had just risen up in the pulpit to lead the congregation in prayer, when a gentleman in the front of the gallery took out his handkerchief to wipe the dust from his brow, forgetting that a pack of cards was wrapped up in it. The whole pack was scattered over the floor of the gallery. The minister could not resist a sarcasm, solemn as the act was in which he was about to engage, "O man, man! surely your psalm-buik has been ill bund."

HUMOROUS.

Humor is to a newspaper what a tail is to a kite—very absurd, but very necessary to its ascension.

The saying "Excuse haste and a bad pen," has been attributed to a pig who ran away from home.

Gilt frames do very well for paintings, but when it comes to "frame of mind" the less guilt the better.

Being asked what made him so dirty, an unwashed street Arab's reply was, "I was made, as they tell me, of dust, and I suppose it works out."

GRAMMATICAL.

Said Anna's preceptor, "A kiss is a noun;
But tell me if proper or common," he cried:
With cheeks of vermilion, and eyelids cast down,
"'Tis both common and proper," the pupil replied.

That farmer understood human nature who said: "If you want to keep your boy at home, don't bear too hard on the grindstone when he turns the crank."

"John! John! wake up, there's a burglar in the house!" said the wife. John sat upright in bed. "Burglar—b-u-r-g-l-e-r—burglar"—and he rolled over waiting for a harder word.

A genteel farmer in Massachusetts, a retired Bostonian, didn't know how to take a wagon wheel off to grease the axle, and so he bored holes through the hub and poured in the grease.

Sydney Smith says: Marriage resembles a pair of scissors, so joined that they cannot be separated; often moving in opposite directions, yet always punishing any one who comes between.

"J. Gray—Pack with my box five dozen quills." There is nothing remarkable about this sentence, only that it is nearly as short a one as can be constructed, and yet contains the whole alphabet.

"John," said a father to his son one day when he caught him shaving the 'down' off his upper lip, "don't throw your shaving water out where there are any bare-footed boys, for they might get their feet pricked."

"Madame," said a cross-tempered physician to a patient, "if women were admitted to paradise, their tongues would make it a purgatory." "And some physicians, if allowed to practice there," replied the lady, "would soon make it a desert."

A Scotchman went to a lawyer once for advice, and detailed the circumstances of the case. "Have you told me the facts precisely as they occurred?" asked the lawyer. "Oh, aye, ser!" replied he. "I thought it best to tell you the plain truth. Ye can put the lies into it yourself."

As Pat Hogan sat enjoying his connubial bliss upon the banks of a southern creek, he espied a turtle emerging from the stream. "Och hone!" he exclaimed solemnly, "that iver I should come to a country to see a snuff-box walk." "Whist," said his wife; "don't be after making fun of the birds."

An economical man, who had a toothache, determined to remove his tooth in the Indian fashion. Accordingly, he bent down himself, and attached a stout cord to his tooth and the sapling. Then he touched the spring, and the next he knew he had jumped over a grove of about forty small trees, and was trying to get out of a pond that he had happened to alight in.

A certain ostentatious, but profoundly ignorant, young lady, who did not know one letter from another, used to be continually borrowing books—for appearance's sake. On one occasion she borrowed a Bible. Having kept it a few days she returned it and was asked, "How did you like the story?" "Oh," was the reply, "very well; but it ended like all these love stories—they got married at last."

Sydney Smith tells of a maid who used to boil the eggs very well by her master's watch, but one day he could not lend it to her, because it was under repair, so she took the time from the kitchen clock, and the eggs came up nearly raw. "Why didn't you take the three minutes from the clock as you do from the watch, Mary?" "Well, sir, I thought that would be too much, as the hands are so much larger."

An industrious citizen of Lucan arose a few mornings ago, while the festive lark was still snoring, and with a tin bucket under his arm went to the barn to milk the family cow. It was dark and rainy, and in fumbling about for old Brindle he got into the wrong pew and began to pail the off mule of his wagon team. He can't remember which side of the roof he went out at, but his recollection of alighting on the picket fence is very vivid. He expects the bucket down in a few days.

Minnie May's Department.

Recipes.

JELLY CAKE.

One cup sugar, 4 tablespoons butter, 4 of sweet milk, 3 eggs, 1 cup flour, 1 teaspoon soda, 2 of cream of tartar; flavor with lemon.

A. L., London.

EXTRA FINE LEMON PIE.

One lemon; grate the rind, peel the white and throw it away; squeeze out the juice and chop fine; one cup white sugar, one cup of milk or water, one tablespoon of flour. Beat fine; save the whites of two eggs; while baking beat the whites, and add white sugar; when the pie is done, spread the icing over it; put in the oven and brown. Good sweet cream, with sugar beaten to a froth, is much preferred.

THE QUEEN OF PUDDINGS.

One pint of bread crumbs; one quart of sweet milk; one cup white sugar; four eggs; save the whites of two; flavor to taste; beat the eggs and sugar together, and stir in the crumbs and milk; bake to a light brown color; when done, beat the whites of two eggs with sugar; spread jelly or any small fruit over the top of the pudding; then spread over this the icing, and put in the oven to brown. Whipped cream is much nicer, but do not brown it.

TRIFLE.

Break up any kind of cake in a large glass dish; put a layer of cake, then a layer of jelly. until the dish is about two-thirds full; take six eggs and one pint of milk and white sugar, and make a boiled custard; stir while boiling. When nearly cold, flavor; pour wine or brandy over the cake, and then pour on the custard, letting it go down through the cake; spread over the top whipped cream or icing. This makes a very nice dish.

JELL CAKE.

Four eggs, one cup of sugar, three tablespoons of good sour cream, one teaspoonful of grated alum, one teaspoon of soda.

ORANGE CAKE.

Two cups of white sugar, two cups of flour, one-half cup of cold water, yolks of five eggs, and the whites of four, well beaten; a little salt, one-half teaspoon soda, one teaspoon cream tartar; beat the white of one egg to a stiff froth, and add white sugar; add with it the grated rind and juice of one orange; take the cake in layers and spread the orange mixture between when cold.

COCOANUT CAKE.

One large cup of white sugar, half-cup of butter, half-cup of sweet milk, one and a half cups of flour, whites of four eggs, one teaspoonful of cream tartar, one-half teaspoonful of soda. Bake in layers, and spread between each icing made of the whites of two eggs and sugar, and sprinkle cocoanut on each layer; spread icing on the outside, and sprinkle with cocoanut.

RASPBERRY VINEGAR.

One pint of vinegar to one quart of berries; let stand twenty-four hours; then strain one pound of sugar to one pint of juice; let boil half an hour.

GINGER CAKE.

One large spoonful of ginger, and pour five spoonsful of boiling water on it; three spoonsful of butter, one teaspoonful of soda, one pint of molasses, mix as soft as possible and roll.

WHITE CAKE.

The whites of six eggs, a large cup of white sugar, half cup butter, teaspoonful of cream tartar, one teaspoonful of soda, one cup of cornstarch, one cup of cream; dissolve the corn-starch in the cream and mix thin; flavor to taste.

GINGER SNAPS.

Half a pound of flour, half a pound of sugar, half a pound of butter, half an ounce of ginger, half pint of molasses.

TEA CAKE.

Three eggs, one cup sugar, one cup butter, one teaspoonful of soda; mix thin and roll.

MRS. LYMAN CHAPIN, Waterford.

PRIZES AWARDED THIS MONTH.

Recipes—1st prize, Mrs. Lyman Chapin, Waterford; 2nd, Fannie Walker, Beamsville; commended, Annie A. Glennie, Woolwick, and Mrs. Nicholson, Ancaster. The "Flower Garden" is unavoidably crowded out of this number.

Illustrated Florists.

I have often puzzled myself to know why it is flowers are not more extensively cultivated in the country. In my travels last summer through Canada and parts of the States, I journeyed for miles, and in the majority of farm residences met with half-decayed rose bushes, and occasionally a few hollyhocks or lilac bushes. This should not be the case. I fear there are too many florists of the order represented in this scene, that allow their

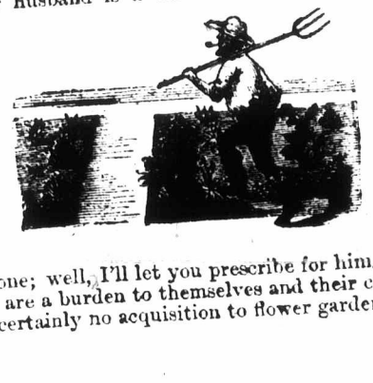
The woman whose flower seeds never come up unless they are scratched up.

seeds to be forced up in the above manner. If they exercised a little more patience and care, the flowers would spring forth naturally time enough — perhaps not so quick as the above (patented) style, but in a more satisfactory way. I have been much surprised at the ignorance in regard to flowers displayed by some people. You will meet with ladies claiming to be passionately fond of flowers, who knew everything about dress, etc., yet cannot give the names of half a dozen different flowers. But I rejoice to know that these careless florists are disappearing, and giving place to more of the following class of ladies. These are the ones who reduce

The woman whose flower seeds all come up.

to practice the motto of the FARMER'S ADVOCATE —*persevere and succeed.* There are those who cry "no time," to attend to flower gardens, but they find ample leisure to trot off and gossip two or three hours with some *dear* friend. If you are fortunate enough to have a partner like this one, so

much the better. This is the couple that keep a pleasant, cheerful home. But if not, and you are unable to take the hoe and rake yourself, use your influence with brother JOHNNY, or whatever his name is, the way you would to get to a social; promise him a nice pudding or something of that sort. If that don't bring him to terms, try something else. A willing mind works wonders. But if your husband is a careless slovenly man, like



this one; well, I'll let you prescribe for him. Such men are a burden to themselves and their country, and certainly no acquisition to flower gardens.

Hints About Washing.

Muslin dresses, even the most delicate colors, can be cleaned in ten minutes or a quarter of an hour, without losing their color. Melt half a pound of soap in a gallon of water; empty in a washing-tub; place near two other large tubs of clear water, and stir into one a quart of bran. Put the muslin in the soap, turn it over and knead it for a few minutes; squeeze it out well, but do not wring it, lest it get turned; rinse it about quickly in the bran for a couple of minutes. Rinse again well for a couple of minutes in clear water. Squeeze out dry, and hang it between two lines. A clear dry day should be chosen to wash muslin dresses; half a dozen may be done in this way in half an hour. The last rinse may be prepared in the same way as for woollen fabrics. A colored pattern on the white ground must not be blued. The bran may here be dispensed with. When the dress is dry, make the starch; for a colored muslin white starch and unboiled, but one made with boiling water for white muslin dresses. Stir the starch with the end of a wax candle. Dip the dress. Hang it again to dry. When dry, rinse it quickly and thoroughly in clear water. Hang it to dry again. Sprinkle and roll it up; afterward iron it with very hot irons. Hot irons keep the starch stiff. This rinsing after starching is called clear-starching. None of the stiffness, but much of the unsightliness of the starch is removed in this way. The advantage of cleansing dresses instead of washing them is: first, if colored, the process is so rapid that there is not time for the colors to run; and secondly, the fabric is not rubbed, and therefore not strained and worn out; thirdly, the process saves nearly all labor, and is so quickly done that any lady may manage it for herself in the absence of a laundry maid or a lady's maid.

Fly Paper.

As "fly time" returns again, our readers may be looking for means of getting rid of the troublesome insects. The following are approved recipes for making "fly papers," taken from the *Druggist's Circular*:

Dip filtering or bibulous paper in either one of these solutions;

The first recipe is, quassia chips, one ounce; water, one pint. Boil ten minutes and strain. Some add one drachm of powdered nux vomica, and boil it with the quassia.

The second is black pepper, one ounce; boiling water, one-half pint. Make an infusion and strain.

Another is arseniate of soda, ten grains; water, four ounces. Dissolve. The paper is simply immersed in the liquid and dried. When wanted for use, a piece of the paper is laid in a plate with a little sweetened water. The last formula is the surest, but requires caution in using.

Personal and Household Hints

If you are buying carpets for durability, choose small figures.

Benzine and common clay will clean marble.

If your flat-irons are rough, rub them with fine salt and it will make them smooth.

Castor-oil is an excellent thing to soften leather.

To clean a browned porcelain kettle, boil peeled potatoes in it. The porcelain will be rendered nearly as white as when new.

To ascertain whether a bed be damp or not, after the bed is warmed, put a glass globe in between the sheets, and if the bed be damp, in a few minutes drops of wet will appear on the inside of the glass.

A small piece of paper or linen, moistened with the spirits of turpentine, and put into a bureau or wardrobe for a single day, two or three times, is said to be a sufficient preservation against moths.

Lemon-juice and glycerine will remove tan and freckles and also soften the hands.

Lunar caustic, carefully applied, so as not to touch the skin, will destroy warts.

There can be no friendship where there is no freedom. Friendship loves a free air, and will not be penned in straight and narrow inclosures. It will speak freely, and act so too, and take no ill where no ill is meant; nay, where it is, it will easily forgive, and forget, too, on small acknowledgments.