

# FARMER'S ADVOCATE

AND HOME MAGAZINE.

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## The Farmer's Advocate

—AND—  
HOME MAGAZINE.

PUBLISHED MONTHLY BY WILLIAM WELD.

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## THE FARMER'S ADVOCATE

AND  
Home Magazine

Will be issued as usual on or about the 15th of September next.

This number is the cheapest, best and now most popular advertising medium of the season. Has no rival and commands the attention of our most enterprising manufacturers, seedsmen, breeders, and the public generally. Send for a circular.

### On the Wave.

[The following article we forwarded for the August No., but it arrived too late for that issue.]

In mid-ocean, bound for Europe in S.S. Nevada.

—Our thoughts often turn to our subscribers, but we cannot visit your farms or notice the progress of the crops. We have on board our vessel many passengers from our sister colony, New Zealand, from whom we gain the following information, and believe you will be pleased to hear it. New Zealand is composed of two islands, the north and south; they contain about as much land as England and Scotland. The northern island produces tropical productions, and the southern island has a climate we think superior to that of any part of Britain or America. Ice is sometimes seen, but seldom, and then not thicker than a half-penny. Wool has been the principal export. Large fortunes have been made in this small speck of one of our colonies. It appears that agriculture has been carried on on a larger scale and more profitably than on our American continent, and from

what we have read and heard, the wealth of some of the wool growers is enormous. One of the gentlemen on board occupied 162,000 acres. Some of the land is so rich that it will keep over 10 sheep per acre, but the majority will require one to three acres to keep a sheep. One gentleman, a Mr. Clarke, on Moore's Flats, New Zealand, owns and farms 70,000 acres. He has all kinds of stock, and raises a great deal of grain; he raises a lot of heavy horses and sells them at auction when three years old. He sold his last crop of horses, fifty in number, and they averaged over £45 each, or equal to \$225 per head. Some of the graziers have half a million sheep. Enormous quantities of clover are sown here by the farmers when they first reclaim the land; some farmers expend the enormous sums of from £1,000 to £5,000 per annum on grasses, principally on clover. The figures appear astonishing to us, and must be to you, being equal to \$25,000 for grass seed in one year. Some of the farmers will raise from 3,000 to 5,000 acres of turnips, which figures also appear surprising to us. They are not troubled with foot-rot, but scab on sheep has to be watched carefully. Some damage is done by wild hogs. The people turn out and have some sport with them sometimes; one of a party informed us that they killed eighty in one day. Rabbits are a great pest; they overrun some parts of the colony. They pay a half dollar per tail for them, and people do well by hunting and killing them for that fee. There are large green parrots, with very strong bills, which settle on a sheep's back, open the skin and feast on the kidney fat. The poor sheep can do nothing to get the parrots off. Of course the sheep are killed by these birds. There are also some large sea gulls which will come and pick the sheep's eyes out when they are lying down. The losses from these two pests are not very large.

Sheep shearing is the harvest for the men. A good shearer will make as much during that season as a man would get in a year in America. A good shearer will shear a hundred sheep in a day; sometimes a man has shorn two hundred, but this is a rare occurrence.

Vegetation is green all the year, but the trees do not attain such a dark livid green as with us; they appear to have a dull brown tinge. The beautiful verdant green of our American trees was very pleasing to the New Zealanders. The land is capable of producing very large wheat crops; they have only just found out that they can ship their wheat to Europe with a profit, and this branch of husbandry will be more vigorously attended to in that colony. They are well supplied with birds that destroy grubs and insects which are injurious to the wheat crop. The Government is now abandoning the leasing of lands, which has been the mode of operating—leasing it in large tracts of hundreds or thousands of acres to individuals. Now they intend to sell the lands in smaller lots to settlers.

The most fluent talker on board the Nevada was

called Judge —, from New York, a strong, out-and-out Union man. He was speaking boastfully of the great United States, and said there was a club or society in New York composed of one hundred and twenty millionaires. This appeared to represent a large amount of wealth, and one person asked if they were all residents of New York State. The answer was "No; some are from other States." Our New Zealand friend, on whose word we could rely, said there were in New Zealand and the Australian colonies quite that number of millionaires in sterling pounds, and many were worth five and ten millions.

Now, New Zealand and the Australian colonies are but as distant parts of England, and this would show that the capitalists there can be counted as worth five times as much as the capitalists of the United States.

### The Dairy Business.

As many of our readers are interested in the cheese business, and more might perhaps profitably be so, we made enquiries where the best cheese was made. We had partaken of many kinds of cheese while in England, and as we gave preference to the Cheddar, we enquired where the best of this variety was produced, and to our surprise we found it was in Gloucestershire.

The Gloucester cheese formerly had a very high name in England, but we find that Wales now takes perhaps the largest quantity of the Gloucester cheese. The pastures of this county through which we passed are rich and the grass abundant, being thicker and greener than with us. Some of the land is capable of being overflowed with water if desired, at any time; thus in dry seasons the land can always be kept damp and the grass fresh. The dairies are not large, 40 to 60 cows being considered as sufficient for good, large dairies.

The cheese is almost always made on the farm where the cows are kept. The cows all show a high strain of Durham blood, and no doubt many of them would have been eligible for entry in the Herd Book if the pedigrees had been kept and it had been desirable. The dairies and dairy utensils are kept scrupulously clean and sweet—so sweet that one can scarcely smell the cheese even in the curing rooms. Earthenware and slate vessels are used to a greater extent than with us in Canada. The cheese vats are round, about five feet across and three feet deep. The curd appears to be stirred and kept in motion more than with us. A woman stands and stirs it for nearly two hours, after it is turned to curd. When sufficiently scalded it is switched round and round in the vat. The curd settles very nicely in the centre of the vat, so that the whey can be dipped up and run off, leaving the curd in the centre of the vat. The curd at this time is in very small pieces. It is our impression that this continual stirring of the curd is one great point in the superiority of the Cheddar cheese over ours; it tends to keep all the cream or butter in the cheese. Perhaps the pastures may be richer and

produce more cream, but we do not imagine that this would be the case, as our good pastures in many places are very rich. Our grass is not so soft or rich as we think the English grass is.

We find they do not use all the cream in making the cheese; they say that the cheese would not be so good—that it cracks and opens, and that it is necessary to take off some of the cream. This information we obtained from a person who was considered one of the best cheese makers in Cheddar, and is now making cheese in Gloucester. The Cheddar cheese made at this factory commands a higher price than any other Cheddar cheese we could hear of. The manufacturer has kindly furnished us with the mode of making the cheese, which will be found in another part of this journal. If any of our readers wish to know any further particulars in regard to the English mode of making the Cheddar cheese, our correspondent there will, if possible, be pleased to furnish us with the information. There is a good opening for some of our best factory men or cheese makers to establish a particular brand and gain a reputation for cheese that will command a much higher price than the average of American or Canadian cheese now bring in Europe.

A distinction should be made between American and Canadian productions. The inferior meat, cheese, butter, &c., should be checked from export unless branded inferior; beech-nut and still-fed pork, slop-fed beef and inferior butter and cheese, sold under the name of Canadian products, should be more rigorously guarded against than they are, to enable our good farmers to obtain the real value for their good products. We can see no reason why our products cannot by proper manipulation command a much better name than they now have.

#### How to Make Cheddar Cheese.

WRITTEN FOR THE FARMER'S ADVOCATE BY  
J. L., GLOUCESTERSHIRE.

If the weather is very warm strain out the night's milk in small quantities to keep it perfectly sweet. In cold weather it is better to strain it deeper. Suppose the milk to be 30 or 35 gallons the night's and morning's milk together, I should skim three pints of thick cream for butter. Stir in what remains on the milk, after putting it together in the cheese tub; before you strain in the morning's milk skim up all the cream that still remains on the night's milk with the whole taking up about 3 gallons of milk with it to warm. If the cows are milked very near the dairy the night's milk will not require warming, the morning's milk will make it warm enough. When the night's milk is not warmed it must be kept stirred whilst the morning's milk is added to it to melt in the cream.

The heat of the milk when the rennet is added in warm weather must be 80 degrees, when not quite so warm 81 degrees, and in winter 82 degrees. Before adding the rennet put in about 5 pints of sour whey, and six quarts in cold weather.

I would use Hansens rennet extract; there are directions on the bottle how to use it.

When the cheese is coming move your hand gently over the top of the milk to stir in the cream, sometimes it requires doing two or three times.

The milk should not be more than an hour coagulating, or less than three-quarters of an hour. To know when it is firm enough to break cut it across with the skim dish, if it does not run milkey it is firm enough, if it is allowed to stand till quite firm it would not take the scald and the cheese would nearly be spoiled. In the first place cut the curd in squares with a skim-dish or a knife, cut it about 6 inches deep and 4 inches square, take the skim-dish and very gently turn

over the top of the curd, then put it down deeper, move up the curd cutting it with the edge of the dish and continue to break it in that way until the whey raises over the top of the curd then take the curd breaker and break it until it is about the size of large shot. It must be broken with care, not too fast or it will get the cream in the whey. When it is finished breaking let it stand 15 minutes. Should there be any bits of curd on the top of the whey press your hand on it to make it settle down. Then dip off the whey till it is about 3 inches above the curd and be sure to put away 2 or 3 bowls full of the first dipping to put in the milk next morning. If the cheese should be sour at any time do not put any whey from that cheese in the milk next morning. Make one without any or you will have the second as bad as the first. Take five gallons or so of the whey you dipped off and put it in a tin pail to warm. It should not stay in the water long enough to raise skimcurds as it injures the flavour of the curd. After you have dipped off the whey break it up again so as not to have any knobs when it is in scald. Stir it gently with the breaker and then add the hot whey with the bowl stirring it all the time. The first scald must be 90 degrees and the second 100 degrees. It requires about the same quantity for the second scald as the first. Keep it stirred from the time you put the first scald to it till half an hour after you have added the last, then give the curd a purle round the tub and take out the breaker. Let it stand for half an hour and then dip off the whey and be careful not to disturb the curd. As soon as you can see it above the whey let the tap run in a sieve to catch the curd. It is best to put all the whey through a sieve. After the whey has run off part the curd out in strips about 3 inches wide, leaving a space between each strip for the whey to run. The back part of the tub must be raised to let the curd run dry. Let it drain in that way for 20 minutes, then break the strips in pieces about 4 inches long, turning it over to get cold. I find it takes from 2 hours to 2½ to cool in warm weather. As soon as it is cold take it up in a vat large enough to hold it all, press it for three-quarters of an hour; put a thin cloth over the hoop you press it in; do not break the curd any smaller before taking it up. When it has pressed long enough take it out and grind it; if it is not fine the first time grind it again. Then let it remain in the tub or cooler till it has turned a little sour, then salt it and take it up. I do not put quite a pound of salt to half a hundred weight of curd. I think it is best to take up the curd in bags the same shape and size as the hoop. Turn them in the vats next morning, keep them in press 2 days if about 20 lbs each, if they are heavier 3 days, put a band round them as soon as they are out of press. Let it remain till they are quite firm. Keep the tops covered over with a thick cloth for a week or so to prevent them from breaking. I forgot to say as soon as the milk is renneted in the morning it must be covered up with a thick cloth till it comes to curd.

The bowl spoken of is about the size of a common tin wash dish, with short handle, a little deeper, and made smooth and round. The breaker is a series of cheese knives made in a bent form, and has a long handle.

#### Home Again.

Just returned to our office after having two months absence in Europe, the principal part of our time having been most pleasantly spent in England. Every time we visit that favored land we admire it the more. There are faults and imperfections in every place on earth, but with our limited travels and reading we have yet to hear (if such exists) of a better governed country, a more prosperous nation and a happier people.

The present trip has enabled us to see more of the habits and modes of living of the nobility, the middle classes and the peasantry than ever we saw before. The nobility live in a higher sphere of honor and integrity than the aristocrats of this continent. The middle classes are in firmer and safer positions than they are on this continent, and the peasantry are well employed and amply paid; they work shorter hours and receive one-half more pay than they received twenty years ago. Prosperity reigns; mansions and blocks of buildings are being erected, and the roads and fences have been improved. In England the people appear to carry more ballast than sail, while in France and America they appear to carry more sail than ballast.

Fine weather accompanied us in all our journeys during this trip, as well as during our three weeks' trip to the States. The perfume of the newly made hay was wafted through the cars, and seemed to fill the atmosphere all the time we were in England; and to our surprise, we found the perfume as strong on the top of a church tower, some 200 ft. high, as when walking along the roads or through the fields. The crop of hay was good, and the grain crops looked generally well in England, but in France (we went to France also) the grain crops surpassed everything we have seen in England or on this continent. The hop crop promised to be the heaviest we have seen. Fruit was only a medium crop.

The farmers in England complain that they are making nothing; they have had two or three bad years. We think half of them are and have been holding their own through what they term the past three bad years; one-quarter have made money, and one-quarter have lost. Should a favorable year, with good prices, come round, then they make a lot of money. There are many tenant farmers in England who are worth from \$100,000 to \$500,000.

We paid a visit to the Royal Agricultural Exhibition of England, which was held in Bristol this year. We also visited the Paris Exhibition and some of the fine farms in England.

We must not occupy too much of this paper with our own writings, but hope to make some of the future numbers of interest and profit to you by writing of what we have seen.

#### Manurial Resources in the Soil.

When farmers speak of a run-down farm, and of the means of restoring it to its former state of fertility they think little that the means are at hand, and that the material for enriching it may be in the farm itself, inactive and inoperative, till it is rendered available; and such is the case very often. The soil is rich in mineral manures, but till these organic substances undergo some change the crop cannot profit by their presence. Plants can absorb food only when it is in a state of solution. Often do we see a poor starved crop while mineral manures not rendered available lie a few inches beneath the roots of the plants. Within the soil are deposited stores of phosphoric acid and potash, the very food plants need, awaiting the practical knowledge of the husbandman. The owners and tillers of the land seem not to know the fact that fertilizers are in the land that need them, and they only require to be set free from the masses in which they are locked up, entirely useless in their present state. In order to render them available as fertilizers they have to undergo certain well known processes.

It is necessary often to add from other sources to this plant food in the soil that we want to enrich, and still more necessary to render available the resources within the soil itself. To render it available various means have been had recourse to

Fallowing the land, the application of lime, and the growing of certain crops have been successfully practised for this purpose. One of the great benefits derived from fallowing is the separating of the particles of the stubborn soil, and setting free the fertilizing salts that have been locked up in it. These salts are then by the descending moisture, heat, and air rendered available for plant food. Deep rough fall plowing is in like manner profitable, though not to the same extent as the year's fallowing. By these means, phosphates, nitrates, &c, are prepared for the descending roots. In the Channel Island they have ploughs constructed on purpose for plowing twenty inches deep for the parsnip crop, and from the soil to that depth the growing plants take their nourishment. Subsoiling when judiciously executed, adds to this manurial supply eventually.

The application of lime is of great utility in rendering available the elements of fertility that are in the soil. By many it has been denied a place among fertilizers, but there can be no doubt of its beneficial effects as a chemical agent in most soils in freeing and dissolving the inert fertilizers, and facilitating the absorption by the plants.

The mode of growth of some plants is admirably designed for the development of these agricultural resources. Deep down beneath the surface soil that may have been exhausted of mineral manure such plants send down their long taproots opening up an unexhausted subsoil, thereby affording access to heat and air, and bringing up the mineral manures from their compact abiding places. In this class of plants clover holds the first place. By means of its long roots it penetrates a vast mass of soil. It takes to itself the potash and the nitrates which are deep in the soil out of the reach of other plants, and when the land where it had grown is ploughed the roots are in the surface soil, enriching it with the mineral manures from beneath. Much, it is true, of those manures is removed with the crop, yet the quantity removed is quite insignificant in comparison to that which remains. So great is the improvement by a heavy clover crop, that Volcker after going deeply into the subject of mineral came to the conclusion that the very best preparation, the very best manure for wheat is a good crop of clover. He says: "Now at first sight nothing seems more contradictory than to say that you can remove a very large quantity of both mineral and organic food from the soil, and yet make it more productive as in the case of clover. Nevertheless it is a fact that the larger the amount of mineral matter you remove in a crop of clover, and the larger amount of nitrogen which is carried off in clover hay, the richer the land becomes."

**Statute Labour on Our Country Roads.**

This question is one claiming our serious attention. It affects the interest of all. Its importance is felt in the town as well as in the country. The merchant depends on the state of the roads no less than the farmer. Our mud roads are, in some seasons of the year, impassable. The requirements of all demand a free intercourse between farmers and merchants, but a mud blockade prevents all traffic. The producer anxiously awaits the change of weather that will enable him to carry his produce to market, and to purchase the necessaries for his family. Last winter our endurance of the evils of impassable mud roads was even worse than it generally is. Bad roads in the country have been one cause of the depression in business. The Monetary Times justly remarks that farmers could have got average prices for their produce if they could only have got it to market which the wet weather and the want of

sleighting prevented them from doing. True the mud season passed away and the produce was finally got to market, but how much better would it be for all parties if this could have been when farmers had the most time to spare and buyers were waiting for the farm products. We have depended too much on sleighting, thinking of bygone years when sleighting was almost as certain to come as haying and harvesting. There is, however, less certainty than in former times of a good sleighting time. The forests have been cleared away, and the free action of the sun in the later months of winter soon deprives us of the snow. There were great complaints last winter in many parts of the country of the absence of sleighting, and the state of the roads was a warning to farmers to devise and carry out some means whereby they may be enabled to get to market whenever they may deem it necessary.

Statute labor is no doubt careless and inefficient; but objections to commuting it into a money payment would probably be thick enough. Could not this labor be better directed and made more efficient? And if so, might it not be greatly extended? Could not the use of farmers' teams, as well as of men, be got to haul the stone at a season of the year when there is little to do on the farm. Until all the principal roads in the country are well covered with stone, the farmer will be under a great disadvantage in not being able to get his produce to market except under favor of the capricious weather which he can in no other way control. In England many macadamized roads have been made in this way; each farmer, according to his means, being required to haul so many loads of gravel or other road-making material. Few persons, in this country, have yet ventured to dream of covering all the principal roads with stone or gravel, but it is a measure to which county councils should vigorously apply themselves.

**How to Get Big Crops of Wheat.**

The great object of good farming is to get good returns for the expenditure of time and money—not merely to get a heavy crop for one season but good crops continuously. This can be done for any number of years by judicious forethought and good cultivation. We will give one instance—example is better than precept. An American farmer for a number of years had his wheat crop average forty bushels to the acre. It was always of the finest quality, and over the required weight. His rotation of crops has been 1 corn, 2 barley with clover, 3 clover, and 4 wheat succeeding clover. He never missed a crop of clover, or seeding it barley; the barley, he thinks, rather helps the young clover by the slight shading, and his crops of barley are always heavy. The clover makes great growth after the barley is cut.

He plows down the rank clover for wheat, nine inches deep, he gives it one harrowing, then hauls out the manure and spreads it. He plows this down shallow, so that the fertilizer may be near the surface to nourish the roots of the wheat plant. He sows his wheat with the drill, one bushel and one-fourth to the acre. His farm is a clay loam.

He keeps a large number of sheep, and to the regular system pursued and to the keeping of sheep he attributes his success in farming, so that he is gaining every year, his land becoming more fertile and his crops more productive. He believes nothing improves a wornout farm more than pasturing sheep. They spread the manure evenly over the whole field, and there is no better fertilizer than the droppings of sheep.

The system of this farmer though eminently successful with him may by others be somewhat modified to suit their circumstances. The same rotation is not equally applicable to every locality and every variety of soil; but to all a regular system is essential to secure continuous good crops, and it is necessary that the system be such as to add to, or at least preserve the fertility of the farm, laboring not only for the present but for future years.

**Top-Dressing Meadows.**

There is no other part of the farm that needs more care than the meadow, and there is none so generally neglected. It is eaten so bare in the fall that the roots have no protection from the frost and many of the tender and more useful grasses are winter-killed. It is again eaten down in the spring, a still more injurious habit than the winter grassing. Not only are the plants just beginning their spring growth eaten into their very heart but the "poaching" the land is even more hurtful to the growth. With such treatment it is not at all surprising that the yield of hay is so often only one or one and a half tons to the acre. In Britain the meadows are never eaten bare in the fall, and no stock is allowed into them in the spring, and their yield of hay would surprise some of our Canadian and American farmers.

It is not enough that they be kept without being injured by close and unseasonable feeding. They need manuring as much as any crop on the farm. A continual carrying off of the product of any soil must impoverish it. A farmer needs not to be told that if he continually draws from a deposit in the bank without at all adding to it, it will in a short time be exhausted, and the same rule is applicable to the soil. Every ton of hay removed from it is a draught on its store of plant food, and if this be not by some means replaced, the deposit in the soil must be exhausted. It is necessary to restore the elements that have been taken away, and this is to be done by top-dressing.

Various kinds of manures have been applied to grass lands, and what kind produces the most profitable results has been a source of enquiry to agriculturists. An interesting experiment with various manures applied to grass was made at the Michigan State Agricultural College. The manures were applied to the plots from May 5th to 10th, and the grass produced from each application was carefully cut, saved and weighed in July and October.

Two bushels of plaster per acre gave an increase of.....	4153 lbs of hay
Five of wood ashes.....	3942 "
Twenty loads of muck.....	4683 "
Twenty do. and 3 bushels of salt.....	5318 "
Three bushels of salt.....	4184 "
Twenty loads of horse manure.....	5023 "
Twenty loads of cow manure.....	4874 "

This experiment was conducted with great care for two years. The soil was a light sandy loam, and it is taken for granted that it gives the approximate value of these manures as top dressing for light sandy loams. The experiment shows that two bushels of plaster are worth more than two tons of hay. This experiment is more valuable to us Canadian farmers from the fact that the manures experimented with are all easily obtained and at little expense. Experiments with commercial fertilizers would not be so generally useful. The experiment shows the value of muck to be greater than that of stable manure and its value to be much increased by the addition of salt. We used muck in large quantities for many years as a top dressing for grass lands and a fertilizer for various crops, and we never found it of as much fertilizing value as stable manure. The value of muck, however, varies very much; some of it is not worth much more than the cost of digging and hauling and some very valuable.

A compost heap formed of earth collected from ditches, headlands and other waste places with lime added and turned over once or twice is a very good top dressing, and almost the only cost is labor. The weeds about the farm may be put to a profitable use by being added to the compost heap. Salt is a very valuable ingredient in the compost heap, as without it, the decomposing weeds and sods would be a nursery for insects—the farmers' most dreaded foes.

### Sell Your Crops.

Sell your crops as soon as you can get them to market. How much have those farmers made who have held their wheat from last year, losing by interest, waste, shrinkage, and running the risk of fire, theft, etc.? Get your cash and use it judiciously, and you will make more than those who hoard wheat, wool, butter or any other produce. We cautioned you about the butter market last spring. If you have heeded that caution you can pay for the *ADVOCATE* for your grandson. If you have a lot of grease on hand we pity you. Do not be in too much of a hurry to sow your winter wheat. There will be Hessian flies about, which will go for the early-sown wheat.

### The Old, Old Story.

Which is the best kind of wheat to sow this fall? is asked us by many. Sow that kind which has turned out best in your own neighborhood for a general crop. In some sections the Scott wheat has done better than the Clawson; in others the reverse is the case. These two varieties are commended as being generally the safest. The Fultz wheat, the Silver Chaff and Arnold's Victor are each very highly spoken of by parties who have grown them. It might be well to sow a small quantity of each of them, to ascertain if they will answer in your section better than the varieties that are better known, as a change will assuredly be wanted in your section before long.

### Cross-Joint-Worm—Potato Blight.

The harvest is finished and a great part of the fall wheat threshed and marketed. The yield of fall wheat was larger than has been known for years, in fact we doubt if there has ever been a larger aggregate yield in Canada. Thirty and thirty-five bushels to the acre has been a common yield, and as high as 40 have been threshed per acre. The sample however is not so good as might be expected; it is very much shrunken in places, especially where it was allowed to stand too long before cutting. No doubt neglect in reaping at the proper period, with the hot weather when the wheat was in the milky state has been the cause of the shrinkage. Through the columns of the *ADVOCATE* we have frequently urged cutting on the green side. The period of ripening of grain is that at which it contains the largest portion of nutriment. Indeed a considerable part of the ripening process should take place in the mow. If it is allowed to ripen while standing the grain loses much of its nutritive properties and shrinks; the yield of flour from such wheat being much less than from the wheat cut green. From a series of experiments made for the purpose, it appears that two weeks before fully ripe is the proper time for cutting wheat.

### SPRING CROPS

Have not done well, taking them all through. Spring wheat has suffered from the joint-worm. This destructive insect works in the first joint from the bottom, and the effects of its work may be known from the straws breaking down near the ground and the whole field being flat. This insect has done a great deal of damage in different parts of Ontario. We saw several fields in the County of Lambton that were badly affected, and from information we have received from other sources especially, and from this we are inclined to believe that more damage has been done by this pest than farmers are aware of. The grain was so badly injured that in cutting the heads lay so near the ground that fully one-half were cut off in reaping and left upon the ground. The fly of this joint-worm is often mistaken for the Hessian fly, but it is larger than either the midge fly or the Hessian, and has four wings instead of two. The young of

the Hessian fly is a cylindrical, reddish white maggot, and lives embedded in little cavities, either in the top of the roots, or just above the lowermost joint of the stalk. By their pressure upon the plant they cause it when five or six inches high to turn yellow, wither and die.

The joint-worm causes the stem to swell and form tumors like a joint, and hence its name, while the maggots of the midge live in the head of the wheat.

We have mentioned these differences from the fact that they are often confounded together by people.

### A POTATO BLIGHT.

There is a peculiar blight come over potatoes. In a few days the lower leaves turn black, and the potato prematurely ripens. The stalks give off an odor like new made hay. The tuber itself does not appear to be affected, only as far as stopping the growth. When potatoes ripen naturally the stalk and leaf assume a golden tinge and then gradually die, but in the present case the whole top dies at once before the potato is quite matured. It is evidently not the old potato rot, for the tuber is perfectly sound and has no appearance of fungus on the skin which is characteristic of this potato rot. All through there have been peculiarities connected with potato culture, from the time of planting until now, which can hardly be accounted for. Seed of the best quality and of different varieties, never vegetated at all—simply rotted in the ground.

### PEAS.

From all parts of Ontario we hear the same cry, that the peas are full of bugs, besides being damaged by a small worm. Except a few late sown peas there will be very few fit for shipping. Peas have been raised so extensively of late years, that there is no doubt but they will be a failure for years.

Corn is an excellent crop, and farmers will have to turn their attention to raising this crop instead of so many peas. Corn will be ready to cut the early part of September, which is remarkably early for this latitude.

### THE ROOT CROP

Will be a failure, generally speaking, not that the season has been unfavorable to growth, but because no attention has been paid to their cultivation, owing to the pressure of the harvest. The weeds have been allowed to attain such a height that the growth of the plant has been completely checked.

It is now too late to begin to clean root crops, as the weeds have got such a strong root hold that in pulling them up, they pull plant and all.

### PASTURES

Are good; the aftermath has attained a large growth, and according as clover seed ruled last year, not much clover will be cut this fall for seed. The second growth will be pastured, and there is every prospect of a good make of fall cheese and butter.

### Are Farm Laborers Scarce?

There has been considerable delay in the saving and in the gathering of the wheat crop this year from the difficulty experienced by farmers in getting harvest hands in several parts of the country. In some places as high as \$2.00 to \$2.50 per day wages was offered, and even at that high rate they could not get the workmen they needed. Are farm laborers not to be had in Canada. There has been great immigration to all parts of Canada for years, and yet farmers are unable to obtain the necessary help when needed.

The farmers cannot give constant employment to hired men and consequently emigrants, even if they were farm laborers prefer the town to the country, and very many of them being unable to

get constant employment in town or country leave Canada for the United States. In order to retain a working population there must be some means for them to support themselves by their labor. If men who leave their old home to obtain employment in Canada fail in getting that employment they will go elsewhere.

The complaint is general that there are many unemployed men, and there are efforts made to procure small farms for the unemployed to enable them to support themselves and families. In Montreal a Colonization Society are endeavouring to have some of the desitute established upon vacant Provincial lands. In London, Ont., and in other places some similar efforts are being made. By this means, homes might be provided for some of the more destitute, and they would be enabled to provide a sustenance. Were such small colonies established in different places in good farming localities, the men and their families so located might in a measure supply the want of farm laborers when needed, besides laboring their own small holdings. This would prove a mutual benefit, and advantage to those who would in the busy season require help, and to those whose time would be only practically required on their own small holdings.

### A Prize Farm.

In the *Agricultural Gazette*, of England, we have an interesting account of the farming of Mr. Steed, of Red House Farm, Somersetshire, who had the high honour of the 1st prize being awarded him by the judges of the Royal Agricultural Society of England. The farm is rather over 250 acres of land, generally rather a shallow and free calcareous soil, but strong enough for beans and wheat and light enough for barley. One quarter of it is under fallow, and the remainder good, sweet grass land, full of white clover and bearing this year an unusual quantity of produce. One quarter of the tilled land is in mangels, potatoes and beans taken after clover and followed by wheat, after which the barley crop is taken, being sown down with red and white clover, which is mown and folded, and broken up for beans, mangels and potatoes; thus beginning the four year's course again.

The barley this year was a perfectly even, well-planted, well-headed crop. The wheat was a heavy crop as thick as it could stand. The mangels were excellent. The beans which had grey stone turnips sown among them in June, to be grown and folded after the crop is off gave fair promise. The clover was a magnificent aftermath, on which the flock of 130 Hampshire ewes were feeding, their lambs having been all fattened and sold. The dairy stock were fifty tolerably large formed common dairy shorthorns, generally red or white and roan, and twelve or thirteen of them are 2 year olds having had their first calf this spring. There were 13 yearling heifers, with calf and as many calves. Besides all these there are 6 or 7 breeding sows and their produce.

In order to feed such a large stock on the farm Mr. Steed finds it necessary to purchase large quantities of food. This includes grains, cake, and maize, besides home grown beans. Much of the straw is consumed as chaff and there is a large quantity of hay saved for winter consumption. The mangels are fed for the most part by sheep during winter.

There is also a large expenditure for manure, almost exclusively soot, nearly 2,000 bushels of soot being purchased annually for application to grain crops and potatoes. From the farm buildings, cow-houses, pig styes, and stables, manure enough is made for the mangels, potatoes and beans, about 12 acres in all.

The whole horse labor of the farm is done by three horses. There is a good deal of carriage of

food and manure and there are 55 acres of tilled land. There is the green crop to get out of the way and 12 acres of wheat to get in and six acres of beans to get in during autumn, winter, and early spring, and of course, manure carriage, and spring work and harvesting, and marketing of all kinds make up a considerable total in a 250 acre farm, and three horses do the whole. The explanation lies in the fact that the land does not need as clay land does, special weather when alone it may be worked, and next, the land is clean. On the farm there is nothing but barley to be seen in the barley field; there are no weeds. Six men and two boys are kept. They are needed for the stock, and they are employed at other times in the corn stubbles and clover stubbles, digging out every bit of comb, every root of thistle, or of dock, every trace of root weed of any kind that can be found. The margin of the fields in particular appeared, dry and cleared.

A visit to Red House Farm would doubtless be an excellent practical lesson for some easy-going farmers, and even the greatly abridged account of it that we give must be very interesting and of great benefit to our readers who feel alive on the subject of agricultural improvement.

#### Rust in Wheat.

There have this season been many reports of wheat being injured by rust, though the disease has been serious only in some localities. There have been complaints of it in some parts of Canada, but not at all to the same extent as in the United States. Kentucky has suffered more from it than any other State.

Rust is a species of parasitic fungus, and attacks the crop in certain conditions of the atmosphere. The principal cause is the prevalence of heavy foggy mists or evening showers, succeeded by calm hot days with a bright sun at the time of the blooming of the wheat plant. Some soils are also more subject to it than others, low damp soils especially.

As long as the rust is confined to the leaves it is comparatively of little consequence. The leaves after some time flag and the rust seems to check a too great luxuriance; but if the spikelets and germen are affected the injury is very serious. The germen no longer receives the required nutriment, and the grain which at first was swollen becomes shrivelled.

There is no thoroughly effectual remedy known for rust. As a means of guarding against it, it has been recommended to sow only the hardier red varieties of wheat which seldom or never suffer from it. It has also been recommended to sow early varieties of wheat that it might be far advanced when the rust would attack it, and that, by this means, less damage would be done. A barrel of salt to the acre sown with wheat in the fall has often had a very good effect in preserving wheat from the rust, from which it might otherwise suffer.

The main preventions of rust in wheat however are really good farming, underdraining, a thorough pulverizing of the soil, and a liberal application of lime, with salt added. This treatment serves to make the wheat hardier and healthier, and the straw stiffer and stronger. And, after all, even the best treatment may not at all times insure immunity from the disease.

A rotation of crops is however greatly in our favour, for though rust occurs on other cereals it is less common on them than on wheat. An uninterrupted succession of wheat crops is very apt to propagate the disease in succeeding years, as so many of the spores or seeds fall to the ground that the succeeding crop would be infected if the season were favorable to the growth of the fungus.

The reports of wheat fields affected by rust are almost invariably from land lying low, and abundant in nitrogen rather than in mineral manures. A dry limestone soil is considered a pretty good guarantee against the disease.

We do not recommend early sowing. Late sowing will be necessary as long as we have any cause to dread the Hessian fly.

#### Seed Potatoes.

The cultivation of potatoes has of late years become a precarious branch of agriculture. We need not say that the stalk and tuber have been attacked by diseases before unknown, and that insects, some of them unknown to us until lately, as the potato beetle, and some not new, but in greatly increased numbers, as the grey grub, are the cause of great losses in potato raising. We are comparatively safe from the potato disease that British farmers, to their cost, are too familiar with. Though not unknown in Canada its visits fortunately are few and far between. We have had but one very bad visitation of the dreaded scourge for many years. Our dry climate is the most effectual remedy of the disease.

This season the potato crop has suffered greatly from blight. The growing ceased prematurely. By some this is attributed to the extreme heat that raged for some time. This may have had some effect, but we fear there has been a predisposing cause in the impaired constitution of the potato that renders it less able to resist extreme heat or any other unfavorable circumstance. The effects of the attack from potato bugs, when they were allowed to run riot on the plants has been very injurious. The leaves, through which the potato plant receives so much healthful nutriment have been, in not a few instances, eaten entirely, and the growth of the plant has been checked, and has ceased before the plant had come to full maturity. The quality of the potatoes was consequently inferior as an article of food to what it would otherwise have been. It was also injured no little for seed. Some farmers complain of a failure in many instances to germinate, and even in those that did germinate, the growth was in many instances very feeble.

In order to prevent as far as is in our power this increasing degeneracy of the potato, we should select for seed such tubers only as are thoroughly matured. Any others are of impaired powers of propagation, and the crop grown from them must be inferior in every respect to crops grown from strong, healthy tubers. *Like begets like.* Of this there can be no doubt. It is applicable alike to animals and plants, and it is a general rule that disease or feebleness, whether inherited or otherwise acquired, is too often a predisposing cause of disease in the offspring.

"What are the best crops for soiling?" "What number of cows can be fed on a farm of 100 acres of good sandy loam?"

To these questions of "a young farmer" we reply as briefly as we can without being liable to be misunderstood by those who have had little experience in soiling. The forage crops principally used for soiling are vetches, rye, orchard grass, millet, peas with oats or barley, and corn. The first in the rotation for soiling is, in this country, rye sown in Autumn, after the grain crops are gathered in, it will be fit for soiling from the 12th of May till it has blossomed. It bears the winter well and gives a heavy produce of forage if the land be in fair condition. Any remaining uncut after blossoming may be saved for hay or allowed to ripen for seed. It should be fed rather sparingly at first, and always when very succulent and green, it is best to add a little hay. It is especially valuable

as a soiling crop, being the earliest forage crop we can grow in this climate.

Oats sown early will succeed the rye for soiling. It is a very nutritious fodder, good for milch cows, horses, and swine. It yields a large amount of forage on land that is in good condition. If sown mixed with peas the food is of better quality, more nutritious and healthful, and the quantity of forage will be greater.

Orchard grass will be in season, at least, as early as it will be needed. No grass yields heavier crops, and it gives many cuttings through the season. This and red clover will supply all the feed that will be needed for some time.

Corn is sown by many broadcast, but we prefer it sown in drills, as the free access for air and the influence of the sun is a great improvement to its quality. It yields a great bulk of feed, and when well saved is good winter fodder.

These forage crops will give an abundant supply throughout the summer and fall. So great a variety is not really necessary for soiling, but a variety of food is always desirable, and any remaining from a soiling crop may be saved as hay. Millet or Hungarian grass is also a good grass for soiling and hay, and produces a heavy crop. It should be cut before the seeds are matured, as it is said that the seed when ripe is detrimental to stock.

A much greater stock may be supported by the same farm by soiling than pasture. One acre of average land is sufficient for keeping a cow for the whole year. This we know from experience. A correspondent of the *N. Y. Tribune* writes that he commenced soiling thirty-five cows in 1875, and now has increased the number to sixty, and during the past year has raised enough fodder, hay, corn and oats to keep them the entire year, from the farm which contains but eighty-four acres. Six horses have also been kept on the farm from the same home grown grain and fodder.

#### Home Markets vs. American Tariffs.

The *American Cultivator*, (Boston) says: "A Clarenceville man thought he could sell his potatoes to a better advantage in Vermont than on his side of the line; so he took a load to Alburgh, and sold 100 bushels for \$25. When he got home, after paying United States duties, and charges, he had \$8 out of his \$25, or 8 cents per bushel, just about enough to pay for the cartage. American produce is admitted into Canada free, but Canadians have to pay a duty of about 66 per cent. on all they send to the States."

WHEAT CROP OF THE UNITED STATES. — The *Prairie Farmer* says: "The damage done to spring wheat in some States is considerable, no doubt, and those residing in sections where the crops are injured are naturally inclined to take a rather gloomy view of the future, but it should be remembered that the United States average of wheat is very much larger than a year ago, and there is almost a certainty that the yield of almost all kinds of cereals will be of a superior quality as well as much greater in quantity than in most previous years."

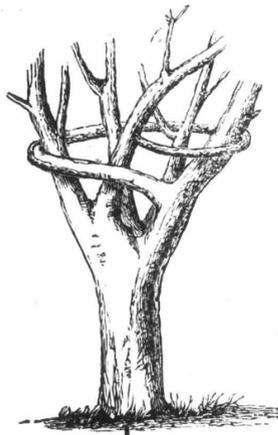
PRESERVING FOOD.—Perhaps no plan that has yet been adopted is as economical or efficient as drying food. An immense business in this line is yet to be developed in our country. We can raise any amount of some kinds of fruit cheaper than it can be grown in old and densely populated countries. The drying of potatoes is a new, and must be a valuable mode for our exporters. The great want has been the lack of efficient dryers, which we are pleased to find is now to be overcome. By applying to the advertisers whose names will be found in this paper, further particulars may be obtained by those interested in supplying the world with our products.

## Garden, Orchard and Forest.

## Seasonable Hints—September.

BY HORTUS.

In the vegetable garden much work yet remains to be done, in the way of saving seeds of tomatoes, cucumbers, melons, and various herbs. When saving tomato seeds in any quantity, an easy method to get clean seed is to put the fruit in a barrel and bruise it up into a pulp; leave it till the mass ferments when it will be found that the seed has separated itself and settled to the bottom; give a final washing in clean water and spread the seed on paper in a shady place to dry. CELERY requires earthing up for blanching; this consists in merely spading the earth up to the plants, doing this from time to time as the plants grow, firming the soil with the fingers around the stalks. SPINACH, an important crop in market gardens is sown during



this month. There are several methods of cultivating it, but the simplest, is to select a rich piece of soil, throwing the ground up roughly with the spade or plough, sow the seed without smoothing the soil, the crevices in the soil will hold the seeds and the general unevenness will retain the snow as a covering. MEDICINAL AND POT HERBS such as sage, parsley, thyme, wormwood, &c., should be found in every garden, the seeds of a great many may be always had. They should be gathered when in bloom and dried in the shade—when dried keep in paper bags or bottles away from the air, dust, and flies. For the successful growing of garden truck the soil should be well prepared in the fall—lay on plenty of manure and ashes—plough deeply and subsoil if possible.

In the fruit department this is a good time for the planting of strawberries—if the soil is sandy sow a piece in rye which will be just fit to cut for mulching the plants. This keeps the fruit from the dirt besides keeping the roots of plants cool, thereby prolonging the bearing season and increasing size of fruit. Where the rye has been cut off the ground may be put in peas or hungarian grass the same season. CURRANT AND GOOSEBERRY plantations may be made toward the latter part of this month.

GRAPES will require thinning out a little of the foliage to help ripen the fruit and the growing ends of vines may be pinched off so as to ripen the wood.

Remove blighted tips and dead branches from amongst the fruit trees. Keep an eye on heavy laden trees so as to be ready with a prop to prevent wind from breaking the branches.

A good plan practised by western orchardists is to train a branch right around the main branches of the tree for to prevent breakages and loss of fruit by the gales that often sweeps the prairies.

Of course this is commenced when trees are young and the branch is carefully tied in position it completes the circuit of the tree when the top is inserted underneath the bark of a branch like a graft as shown in Fig. 1.

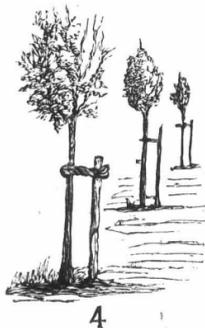
YOUNG FRUIT TREES, particularly apples, after being planted a year or two often become black-hearted, the head of the tree die or the bark becomes shrivelled and scorched, this is caused partly by neglect, bad drainage or late pruning. They



may have been carelessly planted at first and the treatment continued. We have seen many such attempts at orchards as represented in Fig. 2. Good care may restore most of such trees though replanting would be the best thing to do under the circumstances. Such a tree as shown in the foreground of cut may be treated as a bud. Neatly cutting off the diseased stem leaving it thus re-organized like Fig. 3. Cover the cut with wax or other substance to exclude air and moisture.



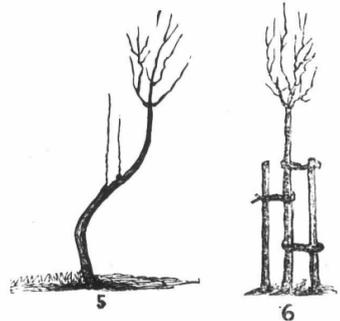
STAKING is next to planting, and should be attended to carefully and as soon as trees are planted. Without being staked the newly planted tree is entirely at the mercy of the elements—the swaying to and fro by the wind or rubbing by cattle destroys the young roots struggling to establish themselves and after a brief struggle for existence the unfortunate tree dies, to the disgust



of the planter and the detriment of the nurseryman, upon whom all the blame is put. We are safe in ascertaining that over one-half of the trees annually set out die through carelessness or ignorance.

We turn with pleasure to an orchard as illustrated in Fig. 4, planted and cared for by the wise man for futurity. Many crooked trees like Fig. 5 can be straightened by placing stakes on opposite sides and tying firmly in the various crooks till the tree is as straight as Fig. 6.

Many shrubs, roses, and softwooded plants can be propagated rapidly by inserting cuttings of each in damp sand. Make a small hot bed for the purpose and with a temperature of 75° to 95° bottom heat fill your bed with cuttings. When rooted pot off in small pots. For making any important changes around residences such as roadmaking, changing of walks, sodding and general re-arrangement the fall is the best season for such work. Beds of Hyacinths, Tulips and other flowering bulbs may now be planted, the soil should be deeply trenched and well manured where they are to be planted. Crocus, Jonguil, &c., are effective, dibbled into the lawn amongst the grass. Designs, such as diamonds, circles and so on may be worked out and filled with bulbs of contrasting colors.



Nothing is more charming than to see the bright flowers in early spring blooming amongst the green.

## New and Desirable Strawberries.

HOW TO GROW THEM SUCCESSFULLY.

By R. H. Haines, Saugerties-on-Hudson, N. Y.

The attention that is now being paid to this fruit is very marked, when compared with what it was twenty years ago. Now, thousands of acres of land, throughout the country, are devoted to its use. At that time estimates would more fittingly be made in rods or square feet of surface. Now, in the proper season they may be found upon nearly every table. Then, the cultivated cherries were largely limited to the rich alone. At the present day our exhibition tables are visited by those who talk with the utmost composure of specimens measuring from seven to nine inches in circumference. At that remote time, berries of hardly half this measurement would excite exclamations of wonderment and surprise. Certainly, as we compare the past with the present, we cannot but feel that the American people are to be congratulated that this delicious fruit is now so generally and successfully grown throughout our land. Before giving the methods for growing these large berries, it will, perhaps, be as well to briefly describe some of the varieties that are now attracting special attention.

SENECA QUEEN.

We are led, at the appearance of this royal berry, to give it the praise that its various qualities seem to demand. A merit that proves a powerful assistance to it in winning adherents is its very early habit of ripening. Another of almost equal importance is the productive habits of the plants; and when to these are added the pleasant flavor and bright color of the fruit, we are led almost to overlook the fact that it is exceeded in measurement by a number of other varieties, and that as yet it only stands in the second or third

rank in point of size. The plants are hardy and vigorous growers.

PIONEER OR "KING OF THE NORTH."

Of the fifty or sixty varieties upon my grounds, this is one of the very earliest of the larger kinds. There are others of small size that ripen about as early, but one of these "kings" will easily outweigh or outmeasure fifteen or twenty of its diminutive rivals. The specimen thus far has measured something over eight inches. This is larger than I have yet grown them, but experiments now in progress will, perhaps, in another year, give me equal success. The fruit is of a bright red color, of good quality, and promises to prove finely adapted to either market or private use. The plants are both hardy and productive.

NICANOR

Is a well-known and formerly widely-grown little berry, possessing many good qualities, but so inferior in size that it will, no doubt, soon be driven from our gardens by its more favored and larger rivals. Essex Beauty, Crescent Seedling, Matilda Duncan and President Lincoln are other early varieties—some of them possessing merits of unusual prominence. Monarch, Great Prolific, Captain Jack and Sharpless soon follow them, while Dr. Warder, Great American, Kerr's Prolific and Belle grandly bring up the rear somewhat later in the season—revealing at times berries with a measurement of from five to fourteen inches.

And now a few words as to methods for growing this mammoth fruit. Let no one suppose that we, here upon the banks of the Hudson, are the only ones that nature favors so highly. Almost any good, rich soil in this country is adapted to the growing of the strawberry—if not one variety of the berry, then another. Of course poorly drained or sterile soils must be excepted. The largest berries are grown on moderately young plants, such as have been set out 10 or 12 months. For my own plantings I greatly prefer to use plants that have been started in small flower pots—setting them out in August or September, as they give nearly a full crop the next season. Correspondents to whom I have sent them also speak highly of them. If the soil is well enriched, deeply spaded, and then frequently hoed, others will also find that suitable varieties will soon give many a rich feast in grateful return.

The English Sparrow and the Canker Worm.

Extract of a letter from T. W. Chesley to the *Annapolis Journal* :

Within about ten miles east of Boston the canker worms have made sad havoc among the orchards. After leaving Boston for Fall River, the same distressing sight presented itself for a distance of ten miles at least. The only plan of relief is by all possible means to encourage the increase of small birds.

The municipal authorities of Boston and New York, about a dozen years ago, each imported the little English sparrow. This procedure was adopted to preserve the foliage of the ornamental and shade trees of the public parks of the respective cities. The scheme has worked perfectly, both on the Boston common as in all the public thoroughfares of the city, and also in the great central park of this city, on an area of nine hundred acres. The whole of these numerous public thoroughfares are vocal with bird songs by those little feathered songsters; and substantially, the best of all is, not a leaf of those various forests of ornamental and shade trees is permitted by those sprightly little fellows to be destroyed by the caterpillar or canker worm.

The little bird I am referring to stands the Massachusetts winter nobly. They propagate their species with wonderful rapidity. The "Charleston Heights"—miles from the common—where the original importation was put, is now peopled by them; and a gentleman there told me that only two

years ago the foliage of the majestic elm trees was destroyed by the pest of canker worms, and now the little sparrows protect the trees perfectly.

Those little interesting creatures are as tame as canaries. While roaming at large over the city, hopping on the side walks and through the trees, in Boston, the climate being much like ours, little houses are constructed and fastened to the branches of the trees for winter homes. But, I assure you, they get through the winter without any protection. They are fitted with a strong beak, and are said to be wonderfully acute in detecting where a worm has secreted itself. A gentleman assured me that he has discovered them plucking buds or young blossoms from his pear tree in his garden, and feared his fruit prospects were doomed to destruction. On examination he found that the only buds and blossoms attacked were those which contained a worm, while the buds and blossoms untouched were the perfect ones, and in autumn he had a fine crop of pears, while before the visit of the sparrows his fruit was to a large extent "wormy," as we say in Nova Scotia.

In the New York Central Park the whole area of nine hundred acres is peopled by them, and in a ramble through it one evening recently I could not discover a single tree bearing the marks of the caterpillars or worms. In passing over the city on business errands, I noticed the little fellows hopping about in search of food.

Pruning Fruit Trees.

All that is required ordinarily, in my opinion, is a judicious pruning to modify the form of standard trees. Every fruit tree grown in the open orchard or garden, as a common standard, should be allowed to take its natural form, the whole effort of the pruner going no farther than to remove the weak and crowded branches, those which are filling uselessly the interior of the tree, where their leaves can not be duly exposed to light and sun, or those which interfere with the growth of others. All pruning of large branches of healthy trees should be avoided by examining them every season and taking out superfluous shoots while small. When orchard trees are much pruned they are apt to throw out numerous superfluous suckers from the boughs in the following summer. These should be rubbed off when they first appear, or they may be easily broken off while young and brittle; cutting is liable to increase their number. When not required to renovate the vigor of an enfeebled tree or to regulate its shape—in other words, in the case of a healthy tree which one wishes to retain in a state of the greatest luxuriance, health and vigor—pruning is worse than useless. I caution all to bear in mind that if the leaves and branches are in due proportion and in perfect health, the knife is detrimental to luxuriance and constitutional vigor. The best season for pruning to promote growth, theoretically, is in autumn, soon after the fall of the leaf. Next to this, winter pruning, performed in mild weather, is best, and in large orchards this is the season most convenient. I think pruning should be avoided at that period in spring when the buds are swelling and the sap is in full flow, as the loss of sap by bleeding is very injurious to most trees, and in some brings on a serious canker in the limbs. There are advantages and disadvantages attending all seasons of pruning, but experience has taught me that wounds made in June would heal over freely and rapidly. It is also the most favorable time to judge the shape and balance of the head, and to see at a glance which branches require removal.—D. N. K., in *Ohio Farmer*.

Fields of Roses.

The roses of Chazipoor, on the river Ganges, are cultivated in enormous fields of hundreds of acres. The delightful odor from these fields can be smelled at seven miles distance on the river. The valuable article of commerce known as "ottar of roses" is made in the following manner: On forty pounds of roses are poured sixty pounds of water, and they are then distilled over a slow fire, and thirty pounds of rose water obtained. This rose water is then poured over forty pounds of fresh roses, and from that is distilled, at most, twenty pounds of rose water; this is then exposed to the cold night air, and in the morning a small quantity of oil is found on the surface. From eighty pounds of roses—about two hundred thousand—at the utmost an ounce and a half of oil is obtained; and even at Chazipoor it costs forty rupees—twenty dollars—an ounce.

Pear and Twig Blight.

A correspondent of the *Germantown Telegraph*, S. Folsom, thus discusses pear and twig blight;

Myself and one of my neighbors, with the aid of Prof. T. B. Lovell, of the *Atica Collegiate Institute*, and his magnifying glasses, have brought to light one unmistakable cause of deadly blight in pear trees. It is poison from an insect that bores through the bark and from one-quarter to one-half inch into the wood of the trunk of the tree. The hole made is about the size of a small common pin. As the sap rises and descends the poison discolors the wood a foot or more above and about half as far below. If not checked, this poison will destroy the entire tree, if in the trunk. Slitting the bark with a sharp knife, through the bore and each side of it, so as to connect above and below, is the remedy. And any gnarl or imperfection in the bark on the trunk should thus be slit. I have thus saved trees where the outer bark was utterly dead, and produced new bark thereby. Twigs and branches showing blight must be cut off close. The assertion that the twig blight results from the work of an insect at the base of the twig, we find from careful inspection to be a hasty conclusion, with no insect and no trace of an insect to warrant it. The hole or vacuity at the junction of the twig with the limb is caused by the shrinkage of the path in the twig by drying.

Raspberries.

The fact that raspberries lose their flavor so readily, and carry with so great difficulty, will always prevent their being very cheap or plentiful in the market. This will make it desirable that those in the vicinity of large cities, and much more those in the country, should raise their own. When the right varieties are secured, the culture is not difficult. They will grow well in a light, rich loam, in a clayey soil, or in a sharp sand. They are not quite so impatient of shade as the strawberry, and they do well when trained up to walls, fences and sheds. Many a city lot would produce as many as a large family would need, if the proper care and culture be bestowed. Either the red or the black may be cultivated, or both. The yellow or the white are not considered so hardy as the darker colors. For a fertilizer use barnyard manure and muck, or muck with lime or ashes, or bone-dust or poudrette composted with muck, sods and leaves. Deep plowing or trenching prevents loss from drouth, and is indispensable to the best success. With these precautions, it is believed that there is not a garden in the country in which some variety of raspberries will not thrive.

Requisites of a Family Orchard.

M. B. Bateham writes in the *Country Gentleman* as follows: "In stating what I conceive to be the requisites of a good family orchard, I am guided by actual observation and experience with a family of eight or nine persons, and a goodly share of friendly visitors. Of course we are all habitual fruit eaters from choice as well as conviction, and as apples are more reliable than most other fruits, we need to calculate for a supply of these throughout the season, or from August to May; then, if there are plenty of grapes or peaches, there will be some surplus of apples to be disposed of.

We find that we need three classes of apples to be in condition for use during the whole season. First, not less than two distinct or first-class dessert or eating varieties, always in mellow or ripe condition for table use and for visitors, to send by children to school, and to give to less fortunate neighbors. This will require about a dozen varieties for the season. Second, one or two rich subacid varieties of good size for cooking in various ways. This will take eight varieties.

Prof. Prentiss, of Cornell University, has been estimating the annual crop of seed produced by some of our seed weeds:—Dandelion 2,000; oxeyed daisy 13,000; dock 13,000; burdock 24,000; mayweed 40,000; red poppy 50,000. After reading these figures the only wonder is that these weeds can be kept down at all. Seed may remain in the ground several years, only to become weeds when the ground is stirred. In evidence of this the Professor refers to a tobacco field where the seed had been allowed one year to ripen and fall. For ten years afterwards tobacco plants appeared in that field from this seeding.

**A Start for Strawberries.**

If any of our readers have neglected hitherto to provide their families with an abundant supply of strawberries in their season, we trust they will not longer defer the good work. The labor is trifling, the money outlay of small amount, and the following directions, which are condensed somewhat from the circular of the Messrs. Hance, of New Jersey, will supply all information needful to begin with:—

**SITUATION.**—Plots of land can occasionally be found which are always moist, without being wet, and the largest strawberries can be grown on such ground with but little expense; while others which are inclined to be dry will produce berries in size and quantity in almost exact proportion to the amount of moisture received. Do not mistake wet for moist land, for where water lies near or on the surface, strawberries will not do well—for that matter there are few plants that will. Good drainage is very beneficial to strawberries, and they succeed admirably, as a rule, on underdrained land. There are a number of varieties, however, that will produce a fair crop of moderate size on the driest soils and in the driest seasons, especially if well mulched—one of the best modes of retaining moisture—but in selecting a location for a bed it is well to choose one where moisture will be found a goodly part of the year, if possible. Thorough culture is another requisite to large returns. The soil should be thoroughly pulverized by ploughing or spading to a depth of at least six inches, when an application of at least two inches of well-rotted manure, which should be turned under and perfectly incorporated with the soil. If stable manure is not at hand, a heavy application of ground bone, wood ashes, hen manure, or almost any fertilizer except lime, will be found beneficial.

**SYSTEM.**—Pot-grown plants can be planted where peas, lettuce, radishes, or other summer crops have been grown (except potatoes, which unfit the soil for strawberries by the exhaustion of potash), thereby taking two crops from the ground in one year. There is also plenty of time to crop the ground with cabbage, cauliflower, celery, or other fall crop after the crop of strawberries has been gathered the following year. They should be set as soon after the 15th of July as possible, although a good crop will be produced the next June if planted as late as the middle of September. At this juncture the system of culture must be decided upon, but whatever system is adopted, if properly set, care being taken to make the earth firm about the plant, not one plant in a thousand that have been grown in pots will fail to grow. The two systems termed "hill" and "matted row" have both advantages, and neither are better for all soils and circumstances. Growers of "show" berries invariably adopt the "hill," as larger berries can be produced; while for quantity at least expense, the "matted row" is usually employed. We have noticed in our observations that growers on light soil have, in most cases, adopted the "matted row," while those using heavy soil, the "hill,"—owing, perhaps, in some cases, to the fact that it is with much labor that grass can be kept down on such land, when grown in rows. For pot-grown plants we would recommend "hill" culture under all circumstances, and "hill" culture for any kind of plants in gardens, unless the soil be exceedingly light and sandy.

**Cabbage Butterfly Destroyer.**

The *Allgemeine Hopfen-Zeitung* states that the cabbage butterfly, as also its caterpillar, cannot endure the pungent smell of the *Anethum graveolens*, or Dill, and that not only the plant itself, but beds of other vegetables, such as greens and turnips, among which it is interspersed, remain absolutely free from the attacks of these extremely destructive creatures. Gardeners would do well, therefore, to have a few of these umbelliferous plants here and there among their crops. The Dill is most accommodating in his habits, growing freely in almost any sort of soil, and when introduced will readily be produced from year to year, without further trouble, by simple self-sowing. The ripe seeds of the plant can also be utilized in making spiced cheeses, or other preparations, in place of the caraway generally employed, so that it is worth cultivating for that purpose alone, independent of its protective power against the attacks of insect plagues.—*London Farmer.*

**Forcing Pinks.**

A fragrant pink is always an acceptable flower, and it is always valued as a button-hole. There are not a great many varieties, but they include some very fine flowers, and they are certainly well deserving of cultivation. One of the most striking and useful is a variety named *A. Alegatiere*, raised on the continent, which cultivators class with the tree or perpetual-flowering carnations, but which we are inclined to put with pinks. It bears bright scarlet, medium-sized flowers, that are very freely produced. A dwarf variety named *coccinea* has very striking red flowers; but the dwarfest of all is scarlet Tom Thumb, which is admirably adapted for growing in pots to secure early flowers. The other varieties are Derby Day, deep pink, laced with bright red; Lady Blanche, pure white, very free and early; Lord Lyon, deep rosy purple, fine and distinct; Mr. Pettifer, dark centre with broad white edge; Mrs. Moore, pure white with dark centre; Newmarket, a reddish purple self; and Rubens, dark rosy purple.—*Land and Water.*

**Cineraria Hybrid.**

Above on this page can be seen a cut of this beautiful perennial. It has generally been classed as a greenhouse plant, but has been found of late to succeed very well in the dwelling-house. As the seed of this variety is very delicate it is best to make several sowings at different times. The most experienced gardeners do this. The principal things required for the success of this plant are light, warmth, moisture, air, and occasionally a little sunshine. The difficulty generally is that we keep our living-rooms too warm for plants. The atmosphere of the living-room is too dry. Keep the plants clean, with thermometer not over 70 or 75 in the day and 50 or 60 in the night. Syringe the foliage often, and never water the leaves in the house. By following the above directions the Cineraria must succeed.

For some sorts of vegetables, as lettuces, cress, radishes, and others, the Chinese system of keeping the soil continually wet is the best that can be adopted. It produces a crispness in the vegetables that is obtained only when there has been no check to the growth.

**SUITABLE CROPS FOR ORCHARDS.**—Suel Foster says, in the *N. Y. Tribune*: Plough and cultivate your orchards—both young and old. Do not sow small grain and grass, but plant corn, potatoes, and other hoed crops. Sowed grain and grass grow the early part of the season, the same time the trees grow, then the crop is taken off, and sometimes the warm rains of August and September will start the trees to a late growth, greatly to their damage. Not so with corn or potatoes; their growth is mostly in July and August, the time we wish to check the growth of the trees. Therefore do not plow the orchard after July until near cold weather; then it is often beneficial to destroy insects, and to mellow the ground through winter. Buckwheat is an excellent orchard crop.—Harvest some where the ground is rich, but where the orchard needs fertility and mulching, let it fall to the ground and rot. Mulch the ground under the trees, not close around the body, but out under the limbs.

**ALFRED ROCHEFELLER**, a farmer of Kinderhook village, Columbia county, New York, discovered a number of strange insects upon the potato vines in

his kitchen garden. Each of them was busily engaged in devouring a potato bug, and it was only by using some degree of force that they could be separated from their victims. Mr. Rockefeller secured one of them for purposes of examination, and describes them as being about an inch in length, in color black, having six legs, armed with powerful claws, and having a fan-shaped tail. He says they fasten upon their victims immediately under the wing, and do not leave them until they are dead. Farmers should be on the look out for these visitors, who may, perhaps prove saviors of the growing crop of potatoes.—*Chatham Courier.*

**A SURE REMEDY FOR THE CABBAGE WORM.**—For 200 plants, 8 gallons soap-suds, 3 ounces capsicum, 3 ounces saltpetre, 4 ounces borax, 1 pint kerosene; dissolve the borax in 1 pint of warm water, then put the kerosene and borax water together, and let stand till the borax cuts the oil, then add all to the soap-suds, and sprinkle with a fine sprinkler. This will destroy all worms and eggs, and will not injure the cabbage at any stage of its growth.—*J. M.*

**Improvement of Pastures.**

The pasture question is one of the most difficult the farmer has to meet. For years, as a rule, the fertility has been removed from them; and in too many instances, and on too many farms, the appearance of moss and bushes, and the feebleness of the grass growth give evidence that the process cannot be carried much farther. Just consider the matter. For years the cattle have left the pasture nightly, each with their stomachs loaded with food, and this and the milk is left behind; and the one day is a repetition of the other. The young stock are turned on the pasture to get their growth, and then this growth is sold from the farm. For years there has been a continual process of carrying off, and not a single instance of carrying on. Is it strange that barrenness should creep, during these years, on a field thus treated? In many, too many, instances barrenness has come, until it at present seems a public calamity through the gradual abandonment of large areas. If cattle are kept from the pasture so as to allow, through a species of fallow, the natural fertility of the land to return, then weeds and bushes spring up—a source of vexation and future expense. We have now come to the question of

definite outlay we can be justified in making for its amelioration. The product of an acre of pasture is not in a single crop which we can take off and weigh and value, but consists of a series of crops which are harvested by the animals each day of the season. Hence, if we apply fertilizer, we cannot measure the good it has done, in a way that is sufficiently striking to produce the impression that it has paid. If by applying bone dust to a pasture we obtain a ton of extra growth the first year, and if we suppose that the harvesting of this ton is going on during each one of one hundred days, then the two thousand pounds divided by one hundred days gives but twenty pounds a day per acre,—a quantity evidently too small for us to appreciate. There can be no question but that pastures can be improved by the application of plant food; the only question is, can we make ourselves believe it?

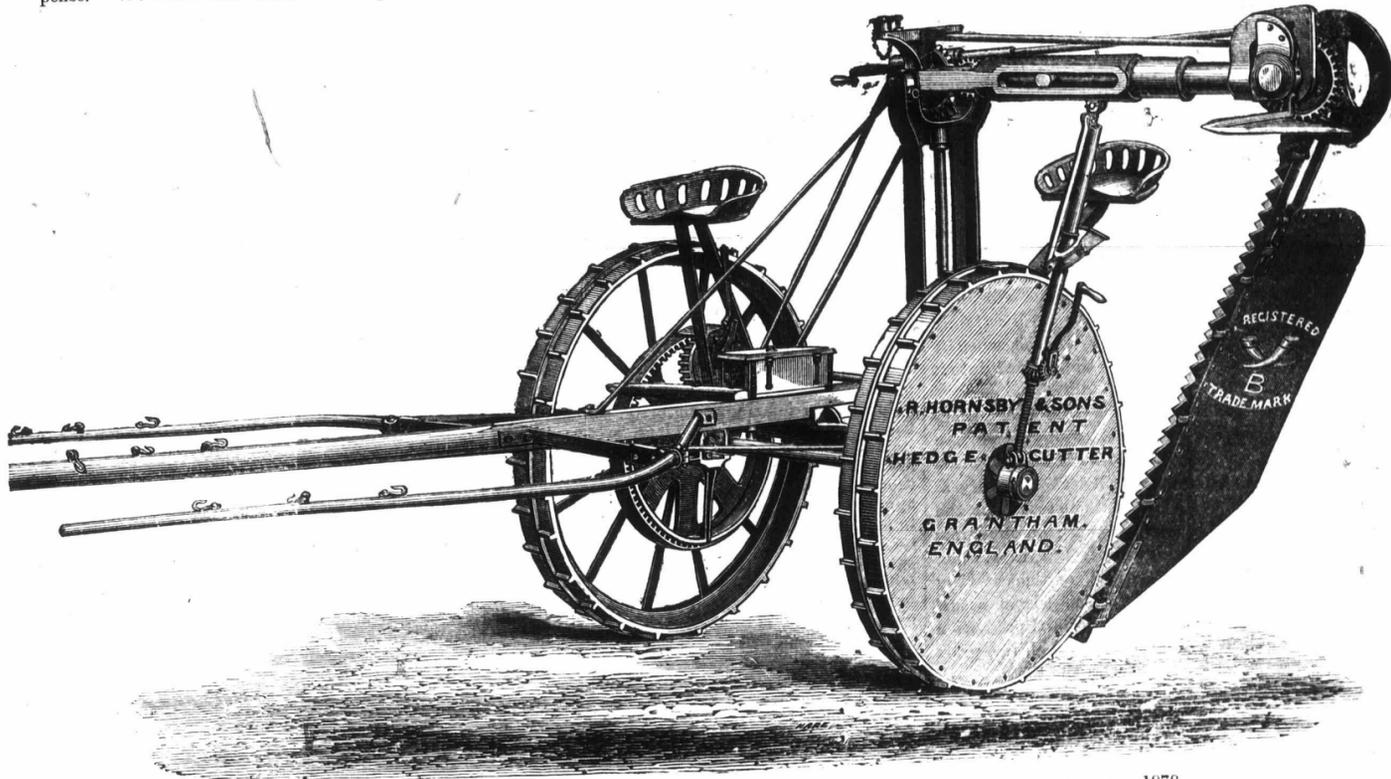
Let us suppose an ordinary New England pasture, worn out, abounding with moss and rock, the turf firm and close, the grass grazed to the roots, and brown with drought during the dry season. How can it be improved? First, an admirable way is to secure a flock of sheep, and overstocking the pasture, feed liberally of outside products, such as cotton seed, wheat bran, etc. The food

A good way to apply is to sow broadcast, then tear the sod with a harrow sufficient to open a seed-bed, but not sufficient to destroy the sod. Then sow a heavy seeding of mixed grasses, and roll with a heavy roller, or if with a light roller, or if the land is too rough, brush the seed in the crevices made by the harrow with a brush.—*Scientific Farmer.*

**New Hedge Trimming Machine.**

EXHIBITED AT THE ROYAL AGRICULTURAL EXHIBITION IN BRISTOL, ENGLAND, 1878.

The below cut represents the new hedge trimming machine manufactured by Richard Hornsby & Sons, of Grantham, in Lincolnshire, England. No machine drew more attention than this; every person was talking about it. The Prince of Wales made a personal examination of it, and all spoke highly in its favor, considering it a complete, practicable and useful implement. It can trim both sides of a hedge by traveling on one side; it will also trim the top of the hedge, and requires only a man, a boy and a span of horses to work it. It will



NEW HEDGE TRIMMING MACHINE.—EXHIBITED AT THE ROYAL AGRICULTURAL EXHIBITION, BRISTOL, ENG., 1878.

what can we do? and we can see but two answers that seem reasonable. Either the pastures which are too far exhausted to yield sufficient profit must be abandoned to the forest—and here comes in the present interest in and claims for forestry—or else the pastures must receive that treatment which shall improve them so that they shall soon yield a return, and ultimately a profit.

We cannot usually plow and fertilize and re-seed pastures, for various reasons, among the most prominent of which are the roughness of the land, the steepness of the slopes, and the treading of cattle. If the sod is once destroyed the rains have a tendency to wash the soil down the slopes, together with the seed, while the treading of the cattle hinders the quick formation of a firm sod; and weeds come in and increase. Certainly it is only where the pasture fields come within a system of rotation that we can be justified in breaking up an established sod; or those few instances where the state of the surface is so bad already that we need have no hesitation as to any process of ours making it worse—provided always, improvement can be made in a more economical way.

The fundamental difficulty of pasture improvement is with ourselves. We know not the real value of an acre of pasture to us in dollars and cents, and cannot make up our mind as to what

furnishes an increase in wool which will sell, while the sheep attribute their dung, which is in an especially available form, over the ground they wander over. When sheep husbandary is not advisable, then the same process may be followed cattle, keeping them in the pasture night and day, and feeding liberally with outside material as in the case of the sheep. A flock of hens kept in the pasture will scratch over and distribute the dung as it falls, so that in general there is no waste. We here reverse the process which has been followed,—carrying on instead of carrying off. In both these methods, sheep and cattle, we are not appreciating the cost, because we seem to be obtaining, and under proper care are obtaining, the value of our extra feeding in meat, milk, or growth.

If we desire to use our money directly, and have faith to wait a couple of years or so for a recognized return, then we can purchase fertilizer—bone dust is excellent—and apply in as large a quantity as we can afford. The more we apply, the sooner shall we be satisfied of its good effect; for bone takes time to act on the land, and it is only the portion which becomes soluble each year which one crop of grass receives. A way we recommend is for the farmer to decide how much money per acre he is willing to spend, and then buy as much fertilizer as this sum will purchase.

be of great advantage to many in England, and it would also be useful in the States, where hedges are extensively planted, and the time is not far distant when we must either have live fences or none.

We are pleased to introduce to the notice of farmers on this continent any new labor-saving machine that may be of use to any section. This implement appeared to be complete in every respect, and so strong that there appeared to be no danger of breaking it, even when cutting through wood over an inch thick.

ORNAMENTAL TREES.—Mr. George Ellwanger, at the late meeting of the Western New York Horticultural Society, gave the following as a list of deciduous ornamental trees possessing real merit for planting. For a small place he advocated: Birch, cut-leaved; yellow wood; thorn; Paul's double scarlet; Judas tree; beech, River's smooth-leaved purple; alder, imperial cut-leaved; Kolreuteria magnolia soulangean; mountain ash, oak-leaved willow, Kilmarnock. For larger places to the above he would add: Elm, Camper, down weeping; and Blandford; linden-white leaved; oak, scarlet; birch, Young's weeping; beech, weeping and cut-leaved; maple, Norway; and, Wier's cut-leaved; horse chestnut, double flowering.

## Agriculture.

## Construction of Tile Drains—No. 4.

BY PROF. MANLY MILES.

As in this series of short articles on laying tile drains, it is proposed to direct attention only to those points in construction that are the most common causes of failures; we now notice the results of leaving *open joints* to allow the water to enter the tile freely.

This is too often a cause of obstruction, the silt or earth washing in at these openings and filling the tiles so that they become useless as drains.

If those who have fears that the water will not find its way into the tiles when the joints are laid as close as it is possible to make them, we will for a moment consider the matter from a different standpoint, their difficulties will be seen to be imaginary.

Suppose for illustration that the tiles are laid for carrying the water of a spring a considerable distance; they will say at once that the joints cannot be made tight enough to retain the water unless they are covered with a layer of cement.

In looking upon the tile as a conduit to convey the water through the soil they cannot fail to see that a water tight joint cannot be made by merely placing the ends of the tile in contact. They know that such a pipe for conveying water will leak. Now they must as readily perceive that it makes no difference whether the water is outside or inside of the pipes, so far as leakage through the joints is concerned.

A pipe, with joints every foot, that will allow the water conveyed in it to leak out, will certainly allow the water on the outside in the soil, when it rises above the bottom of the tile, to lead into it and run off in the drain.

If tiles are laid with their ends in as close contact as the roughness of the earthenware surface will permit, the soil will not wash in to form an obstruction, but the water will leak in rapidly at every joint, and as they are but one foot apart the leakage in but a few rods in length of the drain will be sufficient to fill it to its full capacity.

Even when the joints are made as tight as they can be by placing the ends of the tile in actual contact, it is but to take the additional precaution of covering them with a thin firm sod, the grass side being placed in contact with the tile.

Sometimes inexperienced persons place a layer of straw or gravel immediately above the tiles to furnish a porous stratum, through which the water can find its way to the top of the tiles, where they suppose it should be admitted to the drain. This is not only objectionable, from its being a needless expenditure of time and money, but it may also prove a source of obstruction, from the washing of channels that bring loose fine earth in contact with the tiles where it is liable to find admission to the drain.

Water should never be allowed to enter the drain at the top on account of the fine earth it brings with it to the drains.

In all well-constructed drains the water enters at bottom and sides.

If holes are dug in soils that need draining the water will be seen to stand in them at a certain level. The surface of this water in the soil is called, for convenience, the water-table, and the object of drainage is to lower it and keep it below the stratum of soil in which the roots of plants feed.

When tiles are laid below the level of the water-table, the water leaks into them until the water-table is brought down to the bottom of the tiles, when they stop running. When a rain occurs the water soaks down through the porous soil and raises the level of the water-table, and the leakage

into the tiles at the bottom takes place and continues until the level of the water is again brought down to the bottom of the tiles. Where springs occur to keep up a constant discharge from the drain the level of the water-table in the soil remains as high as the surface of the running water in the tiles, and as the water in the drain runs off and is discharged at the outlet, new supplies are received by the leakage through the joints of the tiles, at or below the surface of the water running in them.

From this it will be seen that water only enters the tiles when the water-table is raised high enough to bring the drain within its level, and that it is necessary to provide for the entrance of water at the top of the tiles when the silt is liable to be washed in with it.

In filling in the trench after the tiles are laid, the earth should be well packed to prevent the water from soaking through to the tiles, and the earth at the surface should be well rounded up on the line of the drain so that any storm water may be turned to its sides to soak down through the soil that has not been disturbed in making the drain.

## Saving Seed Corn.

We have sometimes had no little difficulty procuring seed corn that would germinate. Some seasons the corn is not sufficiently ripened before the frost. On this subject the Cincinnati *Grange Bulletin* tells why these failures occur, and adds a few seasonable hints on the saving of tomato seed.

The perfecting of seed is the whole end and aim of all annual plants, the whole energies of the plant from germination of the seed down to the frost that kills the plant and stops the flow of sap, are absolutely required to make perfect seed.

The immature sap of a young plant never could produce a mature seed; it requires all the whole volume from infancy to maturity, the weak and the strong life blood of the plant, to give the seed its full power of transmission. Especially it is necessary that the last remaining flow of sap from the stalk, matured by age, the season and the approach of winter should enter the seed. Hence to deprive seed of this final act, is to weaken it; it may have vitality enough without it to grow and produce other seed, but it is itself immature, and must produce immature seed.

To gather corn in the glazed state, and hang it up in the shade, is to deprive it of all the mature sap of the plant, and also of the ripening influence of the sun.

Nature never ripens seed in that manner. She gives it every chance, every influence, every particle of nourishment from the plant itself, from the sun's rays, the night's dews and the perfecting influence of the waning season. This much for corn especially, but also for all others.

Tomato seeds require a little different management, because they are more tender. In this case leave the earliest, finest, smoothest, largest fruit on the vines till a slight frost admonishes us of winter's approach. Then gather them, lay them on a board in the sun during the day, but in the house at night, for three or four days, then cut the tomato in half across the stem way, scoop out the core, seeds and all, throw them into a bucket till they sour and ferment, wash out the seeds, dry perfectly in the sun, not in the oven, and put away in a dry place.

## Chess and Wheat.

The "scientific opinion" on the chess question has never been changed, altered or amended. It has been and is that there is no proof whatever that chess has changed into wheat, at any time in the past or the present. More than forty years ago this question was brought up in New York with exactly the same statements as Mr. Wood recites to-day as the alleged facts, and they were exploded. It is a fact that some new pieces of land generally liable to be wet in rainy seasons, and to hold water during the fall and winter, have been known to yield a growth of chess and only a few stems of wheat, and it *seemed* as if the wheat had turned to chess; but the wheat had been killed out and the chess, which is a well-known weed, took possession of the ground. That was all there

was of it. We have had many times (once not later than last year), presented to us a head of wheat with a cluster of chess growing apparently out of the head. Once, some eighteen years ago, we sent one of these heads to Dr. Gray, the distinguished Botanist of Harvard University, Cambridge, Mass., and he returned it to us, showing that the elastic slender stem of the chess had been broken off the chess plant by the upward growth of the head of wheat, and it was so intertwined that the deception was perfect. Last year a head of wheat with a stem of chess interwoven was presented to us by a farmer of Macomb County as a proof that chess grew on the head of wheat. We made him sit down and right before his eyes we stripped the head of wheat of its grains, one by one, and then we came to the slender stem of the chess or cheat, and showed him just how it had cheated him. A series of experiments were tried with wheat; tramped and pounded, and half drowned in water, some years ago; but there never was any chess grown from wheat where there was none in the wheat seed. We have frequently been shown seed that was called clear and free from chess, but we almost invariably found chess seed in the sample. We know that no farmer has yet succeeded in gathering a crop of chess from good wheat land, when the seed was not sown. On low-lying lots of new land, where the wheat plant is killed by the water, the chess plant comes up so like wheat that it is mistaken for wheat in the fall, when in reality the plant that is growing is chess. In the spring it is recognized, and then we are told the wheat had changed. We might as well be told that a good game fowl had been changed to an owl in the process of incubation. The change would be about as great in the animal kingdom as the change from wheat to chess in the vegetable. No sir, plants continue to yield seed after their kind just the same now as they did in the time of Adam.—*Mich. Farmer.*

## Notes from Kentucky—The Wheat Crop.

The want of winter freezes in January and February is now telling upon the corn crop. The soil has been cloddy and badly pulverized during the entire season, and in some sections of the country this difficulty has been increased by plowing the land when too wet for cultivation. This has caused the soil to become baked and hard.

Wheat has generally been threshed, and much of the crop has been sold and delivered. In all the counties bordering on the Tennessee line and extending north to the Lebanon branch of the L. and N. Railroad, which embrace the heaviest wheat-growing portion of the State, the yield has been very poor in many of the best counties, not exceeding eight bushels to the acre. North of the L. Railroad the yield is much better, and in the "Blue-glass counties proper" is 15, averaging in some counties over 20 bushels to the acre. Where the crop was good, the grain is of excellent quality, but where the crop was injured by smut and rust the grain is quite faulty and shrivelled. The cause of this failure in the wheat crop in the western and southern counties is doubtless owing to the want of winter freezes to disintegrate the soil and to prepare the fixed elements of plant food, so that they might be easily dissolved by the spring rains and assimilated through the digestive organs of the plants. Wherever bone-dust, salt, and nitrogenous fertilizers were used, the wheat got the requisite amount of nourishment and made a good heavy crop. The reason that the Blue-glass wheat excelled is because the silurian of blue limestone rocks underlying the soil are more easily dissoluble on account of their shelly nature, and gave out their elements freely to the action of the carbonic acid of the rain water.

Experiments were recently made in one of the Eastern States by which it was ascertained that, on an average, one beetle will eat an inch square of potato leaves in thirty hours, the maximum rate being, ten hours and the minimum thirty-seven hours. One beetle is able to defoliate entirely one plant of potatoes during its beetle life.

EXTRAORDINARY WHEAT.—A farmer in Monterey county, Cal., has a variety of bearded wheat, of which he harvested two years ago one hundred sacks from one sack sown, and his crop this year seems as good. The straw is over seven feet high, and a large man in it can tie the heads together above his head. It is so thick that one person can not see another four feet away. The variety is known as the "Snowflake." So it is said.

**A Lesson From American Authority.**

There is no other class of periodical literature that is compelled to dwell on the importance of home markets to the prosperity of a country as the *Agricultural Press*. The importance of a home demand for all that the farm produces is made evident by all our financial transactions, and especially by the demand or want of demand for the minor products, that will not so well bear shipment to distant markets. The *American Cultivator* says:

"It is a wonder to the superficial observer how any nation that is so dependent upon foreign food as Great Britain can become and continue so rich, powerful and prosperous. It must be borne in mind, however, that since no nation can enjoy permanent prosperity that exports its agricultural produce and raw material, the reverse is equally true, that any nation that, like England, becomes the workshop of the world, receiving its contributions of food, wool, cotton, hides and the products of the soil from needy nations in exchange for products of its looms and spindles and forges and manufactories, soon monopolizes the lion's share of the world's trade, commerce and profits. The future prosperity of the United States depends upon the encouragement of commerce and manufactures in connection with agriculture; upon the establishment of home markets for the products of the soil, and upon foreign markets for the productions of skilled labor."

**The Plow and Plowing.**

Old John Worlidge, who wrote his "Systema Agriculturae, or the Mystery of Husbandry Discovered and laid Open," so early as 1681, calls the plow "the most happy instrument that ever was discovered;" and then he goes on to enumerate the advantages that come from its use in tillage—to read which one would not think, aside from the quaint wording, that his language was nearly two hundred years old, so completely does it conform to the practices and principles of the present day. He says: (1.) "The plow layeth the ground by degrees in ridges in such order as the nature thereof requireth; (2.) This often stirring the land makes it light, and fitter for the seed to take root therein, the clods being apt to dissolve by being exposed to the weather; (3.) It kills the weeds which in strong lands are apt to overrun the corn and waste the nitrous fertility of the earth; and (4.) It fertilizeth the land—the *sun* and the *sull*—(an ancient term for plow) are some husbandman's soil."

The following hints on plowing, slightly abridged from an American writer, will be of interest to many of our readers.

I will commence on the science of plowing. What? Plowing a science? Why there is no science in plowing; any ten-year-old boy can plow. Perhaps he can the mechanical part, after a fashion; but I beg your pardon, there is a science in plowing, and a great one, too. From my observation, there are but very few who know how to plow a field, and especially a small plot of ground, gardens and other vegetable patches. Most farmers think that all that is necessary is to drive into a field with a strong team and large plow, at one side of the field and take the whole area of a ten or fifteen acre field in one round, and roll and bank up the dirt close against the fence, to kill out the briars and weeds that grow there, going round and round until the entire field is plowed, ending in the centre. And they think it is done beautifully, without a ridge or middle furrow to be seen. This they will do year after year, and perhaps their predecessors have done the same thing for a half century or more, until there is a bank of the very best soil in the field covering the third or fourth rail of the fence, all rotted away, and the briars extending for a yard or two out in the field, and a great sink in the centre. They never think that they are only cultivating the briars by such a process; they don't think that the only way to prevent the growth from spreading, if not kept down by cutting, is to cut off the roots by ditching, or, which will answer the same purpose, and much cheaper, by running the bar of the plow next to the fence and throwing the earth from it, leaving the fence-corner easily to be cleared, and all the fence rails above ground. They would last four times as long as if buried in soil, and be a great saving of money and time in repairing them.

I care not how level a piece of ground is, its productive qualities can be increased by being banked

up and made a little rolling, which may be done by plowing your field in small lands, say from 10 to 15 steps, and on each side be sure to plow what is termed a back furrow, which is done by running a furrow from 3 to 5 steps from the fence, (varying the distance at different plowings), then turning to the right at each end; when you finish you have a land from 6 to 10 steps wide, with one-half thrown from the fence; finishing with the same process across each end. If you don't like the small land process you can commence in the middle, and proceed as I shall hereafter explain in plowing gardens, and other small patches, which should always be headed up and the dirt thrown in the centre. This is easily done with the plow, in the following manner: If your garden or patch is perfectly square you commence in the centre, running the first furrow very short, on all sides alike. If you have a plow with the wing throwing the dirt to the right, you will turn your team to the right; if left, to the left. If your ground is longer one way than the other, measure in from each end, half the distance it is across the narrow way. To illustrate, if your ground measures thirty yards long and twenty yards wide, ten yards would be the centre of the width, from that centre; at each end measure in the long way ten yards, and there set stakes and run your first furrow from one stake to the other, and no further; then proceed as before, and then your horse is walking and turning all the time on unbroken ground. When you finish you will finish all sides at once; your ground will be headed up, and not a foot-print of your horse or self on the broken soil.

**Hungarian Grass and Fodder Corn.**

The objections raised by some to Hungarian grass are so well met by a correspondent of the *American Cultivator* that we transcribe from his communication the following extract:

At a recent meeting of a Farmers' Club I spoke in favor of Hungarian grass as a fodder crop, and as producing more to the acre than the best of hay, and knowing of nothing which would produce more milk. Having grown it a number of years with good success, I expected no disagreement, but was greatly surprised when a neighbor replied, and said he would not have it in his barn, as it had produced abortion in his cows, and would cause a mare to cast her foal. This was quite contrary to my experience, and I found no one to agree with him, though one writer thought if it was allowed to mature its seed, the seed itself might have an injurious effect, and the straw, being hard, would have a hurtful effect on the stomach of the horse.

I am very much in favor of cutting everything intended for fodder while in blossom, but farmers cannot always control their own actions. Last year, when my Hungarian was in blossom, the weather deferred me two or three days from cutting it, and the result was that seed was formed. This crop of Hungarian I fed to my cows the latter part of last winter and early spring, with no bad effects, and it yielded a good supply of milk; while cut up and mixed with a little meal it was fed to my mare, and I never saw her in better condition than she was while being fed with it. I really had success where I looked for failure. This success was two-fold. In the first place the Hungarian was too mature when cut, yet it produced no injurious effects on either the cows or the horse, even in this condition; in the second place it produced about as much milk as if cut earlier; at any rate my cows did not shrink in milk when changed from good English hay to this Hungarian.

Spring opened early this year, and I thought I would have some very early fodder corn. So on the 4th of May I planted a few rows; then on the 11th and again on the 18th of the same month; but it came up scattering, while the cold, dry weather which followed kept it back to such an extent that there was no perceptible difference between these three plantings and another lot planted on the 25th of May, and, although in past years I have never planted corn before the 20th of May, I never was so late in feeding it as this year. While I have had heavy crops of rye, barley, oats and clover, I look upon my corn for fodder as almost a failure; but even this has been relieved to some extent by a weed. Lord Palmerston is recorded as having said there was no such thing as dirt, it was only something in the wrong place; the same has been said of weeds something growing in the wrong place.

On examining my fodder corn I found it to appearance exceedingly weedy, and on examining these weeds I found them Hungarian grass. I

said, my corn is very light, but I will let this Hungarian grow, for it is the result of my cutting it late last year, the seed having gone into the manure and thence to the land. The last week I have been cutting Hungarian and corn mixed for my cows, and with the very best results, and it is now a question with me whether these two failures—the first to cut my Hungarian before the seed matured, the other the failure of my fodder corn, through early planting and drought—will not lead me in future years to feed green corn and Hungarian mixed, as the very best food which can be fed to milch cows.

**Preserving Fence Posts.**

The proper seasoning of timber before being used in any sort of structure is far more important than the season of the year when it is felled, kind of timber used, or preventives employed. There are paints, washes and heterogeneous steps recommended for preserving posts; but each is comparatively costly, and only partially successful. One great objection to the application of solutions externally, rests on the fact that the sap, being confined, accelerates decomposition in the interior. Most foresters must have observed this. What I would recommend with fencing posts is—the materials, when felled, to be directly sawn into posts and stored under sheds thoroughly ventilated, where they will remain at least a year exposed to "sun and wind." The neck or part between wind and water of each post should be slowly charred over a strong fire—slowly, because our principle means heating the timber thoroughly to the heart, so as to extract any moisture which may be still lodged at the centre, and hardening a crust on the surface of the posts.

Afterwards, to prevent the posts absorbing water, they should be well coated with coal tar, having its acid destroyed with fresh quicklime. The tar should be thoroughly boiled, to evaporate all watery matter, and applied boiling hot. A large tank holding the posts set on end, and filled with the scalding tar from a boiler, answers the purpose very well. Of course, the upper half of the posts can be painted when placed in site. I am fully convinced coal tar, properly applied to thoroughly seasoned timber, is far more effectual in preserving posts than creosoting, poisoning, kyanizing, or all the paraphernalia of iron prongs, sheeting wrappers (an American invention), &c. One great recommendation in favor of the above process is, that it requires no skilled labor, and the cost is a mere trifle.—*Journal of Forestry.*

**Good Hay From Marsh Grass.**

The *Michigan Farmer* says: "In regard to the marsh grasses, this is peculiarly the case. One farmer will cut his marsh grass and find that it is eaten readily by his live stock. On inquiry it is found that he has cut it early, and though somewhat longer in curing it is of considerable value, and the stems and leaves contain a proportion of flesh-forming matter, and a flavor that renders it palatable as well as satisfactory to the appetite. Another can never see any good in marsh grass; his cattle waste more of it than they eat, and they only eat it when they are starved to it and can get nothing else. He cuts his grass after all his other work is done, takes but little care in curing it, and does not care much about it. The result was his labor in cutting, in curing, in hauling and stacking, was all so much capital thrown away."

**Solid and Liquid Phosphates.**

J. B. Lawes, writing to the *North British Agriculturist*, says: "The relative value to agriculturists of finely-ground mineral phosphates compared with the same phosphates dissolved by acid, can never be properly estimated by the continuous growth of roots. We have evidence that the gypsum, which is present in large quantities in soluble phosphates, has a very beneficial effect upon clover which forms part of a rotation, though the superphosphate has not been applied directly to the clover, but to the roots, two years previously. When soluble phosphate of lime is precipitated in the soil it is in a finer state of division than can be effected by any mechanical operation; and as minuteness of division is one of the great objects to be attained, it would be reasonable to conclude that a dissolved phosphate would be more efficacious than one that was merely ground. Although, however, phosphates in every possible form have been under experiment here for about forty years, I have nothing conclusive to bring forward in regard to the great superiority of soluble over insoluble phosphates."

### Our Paris Letter.

#### The Paris Exhibition.

CEREAL EXHIBITS OF THE WORLD — EXHIBITS AND EXHIBITORS.

(From our Regular Correspondent.)

12 Boulevard du Temple, Paris, }  
July 25, 1878. }

The countries which may be considered the great producing sources of supply are the United States, Russia, Germany, Denmark, Turkey, Egypt, France, Austria, Spain, Italy and Portugal. These countries export more or less, in seasons of plentiful crops, to their neighboring nations in Europe, but some of them are frequently compelled to import largely for their own use. England, with her prolific fields and splendid system of agriculture, has a positive, permanent and increasing deficiency of supply.

In the department of cereals the United States should have equalled, if not excelled, all other nations, but it is to be regretted that there are but comparatively few exhibits which, however, in quality, demonstrate the superiority of the American grains.

Canada surpasses her American neighbors in the tasteful arrangement of her cereals. The specimens embrace many excellent varieties of red and white winter wheat, and some very fine samples of spring wheat; also some very good specimens of oats, rye and barley, all giving evidence of an excellent system of cultivation. Russia, through her Minister of Agriculture, contributes more than five hundred specimens of cereals from her extensive grain-producing districts. Throughout this wide spread region, possessing great diversity and adaptedness of soil and climate, wheat, corn, oats, rye and barley are successfully cultivated, producing a large and annually-increasing surplus for export, sufficient, in the opinion of some persons, were the means of transportation adequate, to supply the deficiencies of Europe.

Egypt contributes a well-arranged and interesting variety of specimens. The native varieties of wheat are of the type peculiar to that country—long, rough and flinty, badly cleaned, and infested with weevil, evincing an imperfect husbandry. The best specimens in this collection come from Upper Egypt, labelled "acclimated," and grown from some of the best varieties which improved cultivation has produced in Europe, which once obtained their supplies from the prolific delta of the Nile.

The specimens of corn are of the ordinary round flint variety. The samples of barley, rye and oats are of fair quality, but are badly cleaned.

The agricultural interests are carefully represented, and the specimens of cereals are numerous and arranged with good taste. The samples of wheat consist of red and white winter, no specimens of spring being observed in the collection. All are of excellent quality, evincing a high state of cultivation; and some of these varieties, if introduced into America, would undoubtedly prove a valuable acquisition to its agricultural interests.

Prussia is unsurpassed in the neatness and finish of its agricultural departments. The numerous and admirably-arranged specimens of very superior qualities of grain give evidence of the high state of cultivation which that country has obtained under the fostering care of its government and the ability of soil and climate to produce the best varieties in great proportion. The specimens of winter wheat—white, red and amber—are of excellent character, plump, thin-skinned, and good color, possessing properties necessary to yield the largest quantity of superior flour.

Norway and Sweden excite some surprise by their well-arranged and excellent display of cereals grown between 58° and 70° north latitude. Barley is successfully cultivated; even in latitude 70° the specimens are of fair quality. Rye and oats are cultivated to considerable extent between 68° and 70°. Some very good specimens of corn, of the round flint variety, are noticed. They were grown in latitude 59° 55'.

Spain.—The specimens of wheat, with the exception of a few of superior quality, are of the usual type of Southern Europe, rough and thick-skinned. The specimens of oats, barley and rye are generally good. The specimens of corn are small and flinty.

PERE.

### Veterinary.

#### Earth and Swamp Miasmata—Their Effect upon Mineral Organisms.

Noxious effluvia, or miasmata, emanate from the surface of the earth everywhere where organic substances, in contact with air and moisture, are decomposing and putrefying. Consequently such emanations take place especially in swamps, sloughs, marshes, bogs, and in such low or level localities in which a compact and impervious sub-soil—hard-pan, for instance—is underlying a loose and porous top-soil, rich in humus or organic substances. In such localities the rain water cannot escape into the ground, stagnates in the loose top-soil, and dissolves and permeates a great many organic substances. The latter, on account of the loose and porous condition of the surface of the ground, are accessible to the influence of the atmospheric air, and the soil itself, being usually dark colored or black, absorbs a great amount of heat; consequently, all the conditions necessary or essential to the decomposition and putrefaction are abundantly provided. New broken ground (prairie) especially frequently develops noxious effluvia, or miasmata, because the breaking or plowing has loosened the formerly compact top-soil sufficiently to bring atmospheric air and moisture in contact with its organic constituents.

A distinction may be made between the miasmata emanating from ground or soil rich in organic substances, and loose and porous enough to absorb sufficient air and water to effect a rapid decomposition (earth miasmata), and the effluvia arising from bogs, marshes, sloughs, etc., or from low ground with a rank vegetation, saturated and periodically covered with stagnant water (swamp miasmata). The differences in the condition under which, and in the materials of which, these miasmata are produced, but especially the physical and chemical condition of the soil, the origin and nature of the decomposing or putrefying substances, the temperature of the atmosphere, the more or less liberal supply of air and warmth—a very active factor in generating earth miasmata—the scarcity or abundance of stagnant water—a great abundance, excluding to a certain extent the influence of air and warmth, constitutes frequently an essential factor in the production of swamp-effluvia,—seem to cause the specific differences which are existing between the various miasmata, and observed not only in their effect upon animal organisms, but manifested also by the specific (musty, moldy, marshy, or swampy, etc.) odors of certain (swamp) effluvia which are absent, or at least not perceived, in such miasmatic emanations. Still, the real nature of those differences is but little known.

Noxious effluvia remain usually confined to the immediate neighborhood of those places in which they have been produced, but, under favorable circumstances, may be carried off quite a distance by winds, etc.

#### THEIR EFFECT UPON ANIMAL ORGANISMS.

Great differences are observed as to the effect of the various earth and swamp miasmata upon animal organisms. Some of them act very suddenly, cause extremely acute diseases, effect sudden changes in the composition of the blood, or cause poisoning and decomposition—anthrax diseases and typhus. Others act gradually, or have a comparatively slow effect, cause chronic and cachectic diseases—such as rot, chlorosis, dropsical conditions, etc.—and undermine the constitution. All, however, agree in effecting serious changes in the composition of the blood—cause, blood-diseases. Differences are manifested also concerning their actions upon different animals. As a general rule,

sheep suffer sooner and more seriously than horses, horses more than cattle, and cattle more than swine. Still, there are exceptions. Some miasmata seem to affect only, or at least principally, a certain class of animals or only a certain species—hogs, for instance—and have but very little or no influence whatever upon others. Besides that, young animals, as a general rule, suffer sooner and more severely than fully matured or older ones. Further, all noxious effluvia, without exceptions, are much more dangerous in the evening, night, and cool mornings following a hot and sultry day, than in the day-time. They are more effective in a stagnant atmosphere than in an atmosphere moved by winds; and cause more damage—probably because more fully developed—in the latter part of the summer and in the fall than at any other season of the year. They are most dangerous to young animals driven out to a miasmatic pasture early in the morning, before the dew has disappeared from the grass, because at that time the miasmatic principle, whatever its nature may be, not only hovers close to the ground and is inhaled, but it is also contained in the dew and is consumed with the herbage of the pasture. That food and water, besides being frequently the vehicle or bearer of the miasma, is also otherwise, as to quality and quantity, of considerable importance in increasing or decreasing the effectiveness of a miasma, by strengthening or weakening and predisposing the animal organism, may not need any special mentioning. As a general rule, dry food, especially if fed in the morning, has a tendency to weaken the effect of the miasmatic principle.

As the most dangerous must be considered those effluvia that emanate from drying swamps, marshes or bogs, or, after an inundation, from ground exceedingly rich in organic substances, such effluvia, especially during the latter part of summer, cause frequently acute blood disease of a very malignant character—anthrax and typhus. Effluvia emanating under usual conditions from swamps partially covered with water, or from other low and wet places, are less dangerous and are usually productive only of chronic and cachectic diseases.

Swamps, bogs, sloughs, pools of stagnant water, and low and wet places in general, besides producing miasmatic effluvia, become dangerous to the health of domesticated animals, also, by affording the means of development for a great many entozoa (intestinal worms) and other animal parasites.

—Veterinarian, in American Paper.

#### Hints on Horse Keeping.

The wide stall is a luxury, and ought to be six, or even ten feet wide, if room can be spared. Loose boxes are important for horses of great value; in such stalls they can get perfect repose by changing their position, recover from the fatigue of a hard day's drive, and be ready for their task the next day. The food best adapted to the horse is oats and hay of the best quality, occasionally varied with a bran mash, with turnips or carrots as an alternative. The growth and development of bone and muscle depend greatly on the food they eat. It is important to select such as contains all the elements needed to form the bone and muscle of the horse. It is self-evident that the nutritive matter supplied by the food must be equal to the exhaustion, or natural waste of the body, to keep up condition.

The horse that is about to be driven on a journey needs hardening by exercise—preparing by sweating out the body to purify and increase the circulation of the blood, and also by hand-rubbing the legs to make them firm and elastic—a preparation in some degree corresponding with that attained by a horse that is daily driven on the road for ordinary work. For one week previous to the start they need daily exercise, commencing with eight or ten miles, and gradually increasing to twenty per day. This exercise, with appropriate food, will harden their muscles, strengthen their limbs, and prepare them to perform their tasks without giving out on the road, materially declining in flesh, or seriously exhausting their physical powers.

If we perform long drives with horses accustomed to short work only, the sudden transition from indolence to great exertion will relax their muscles, weaken their joints, depress their spirits and break down their constitution. The leading cause of so many valuable horses being spoiled by long drives is from being short of work. They are not prepared for such severe exertions. Condition will prepare them to perform their work cheerfully, last out with sound limbs, and preserve their constitutional vigor for future usefulness.



NOTICE TO CORRESPONDENTS.—1. Please write on one side of the paper only. 2. Give full name, Post-Office and Province, not necessarily for publication, but as guarantee of good faith and to enable us to answer by mail when, for any reason, that course seems desirable. 3. Do not expect anonymous communications to be noticed. 4. Mark letters "Printers' Manuscript," leave open, and postage will be only 1c. per 1/4 ounce.

SIR,—In your next number please give an account of, 1st—The proper time to cut clover for seed, how ripe, etc. 2nd—The process of curing the clover before bringing it in. 3rd—The best time and how to thresh it, and about the average bushels per acre for a fair crop. We never raised a pound of clover seed in this township. Tell us the best kind of a machine to buy to thresh it. You have a good many readers here and will have more. Wm. A. W., Lansdowne, Leeds County.

[In reply to the above we would say that clover seed can be cut any time after the heads have all well turned and you can rub the ripest out in your hand. The usual way of cutting now is to take a self-rake reaper and lay it off in bunches, and these bunches can with care, on the part of the chiver, be put in nice rows. These bunches, if the machine works properly, will be laid with the heads all standing up. In this position it can remain till ready to go in the barn, which is, when sufficiently dry that it will not heat. When laid in rows you can drive between and lift the bunches with a barley fork on to the wagon.]

The best time to thresh is in frosty weather during winter. Nearly all the machine shops that manufacture grain separators make clover seed hullers, and there is a great diversity of opinion as to which is the best machine.

The yield is from 2 to 4 bushels per acre and 5 bushels is considered a very large yield. When a good crop and a good price it is a very profitable crop to the farmer.

SIR,—Please confer a favor on a subscriber by answering the following questions: 1—Would cedar for ornamental hedges do to plant in fall, and what time is best? 2—How far apart will two-inch tile drains stand to be put, that are six hundred feet long and three feet deep, with medium fall, in ground that is so porous that I have seen water soak from one hole to another eleven feet away, almost as fast as it was being lowered in order to put in gate-posts? 3—What time is best for sowing salt in order to benefit fall wheat; before the wheat is sown, or next spring?

CANADIAN, Chatham.

[1—The tree Arborvitae, commonly found in our swamps, and generally known as cedar and as American cedar, will answer; it will do well for ornamental hedges, can be readily kept and will look well at any season. 2—The distance apart for tile drains varies according to the kind of land to be drained. On very stiff lands they should be nearer to one another than on lighter soil. They should on very stiff lands be not more than 24 ft. apart, and we have laid drains on such land at 16 1/2 ft. apart. On light lands of ordinary porosity they need not be nearer than 10 or 12 yards. In some lands a few drains to tap the springs and to draw off the water from wet places will be enough, instead of thorough draining. 3—All soluble manures, such as common salt, are to be applied during the season of growth. This is the rule practised by English farmers, who use salt, as well as other fertilizers, liberally on their lands. And this rule is sanctioned by the authority of such writers as the author of "Cyclopedia of Agriculture." The common cedar may be planted either in the fall or spring without risk of failure, if done carefully. We have transplanted cedars in August, September and October, as well as in spring. September planting is especially recommended by some.]

SIR,—Will you kindly inform me, through the columns of your valuable magazine, how I shall keep hens laying eggs the year round. I have now twenty-five hens, and all the eggs I get per day is seven or eight—a very small yield. I feed them on oats, barley, wheat, grain, wheat-bran and coarse wheat flour, with boiling water, mixed together quite dry, all they want. They have

plenty of fresh water, and quite a large field to run in, but I never let them out of that one field after the spring crops are sown, until gathered in in the fall. Then they have the full run of the farm from the first of May until the last of July. My 25 hens averaged about 15 eggs per day. I thought that was pretty good, but since then they have not done so well. Some of them eat their eggs. Can you tell me the reason, as they have lime, gravel, and all the kinds of earth, nearly in their field or yard. The lime I keep in a dish in the building. I intend to increase the number to about 50 or 60. I keep a small stove in their laying apartment in the winter. Will hens lay in winter if they have a good warm place? Is Cayenne pepper good to increase their laying? What kind or breed of hens are the best layers? Mine are all part Spanish. Can you give me a description of the best laying hens. E. A. B.

Lower Sackville, N. B., Aug. 22, 1878.

[Your hens require fresh meat. Sour milk or buttermilk would be a valuable addition to their food. Kill any hen that has ever broken and eaten an egg. Do not let eggs freeze or crack, or the hens may learn the habit. Your hens require salt, also. The Black Spanish are good layers. The Leghorns may lay a larger number of eggs, but they are much smaller than the eggs of the Black Spanish. Hens will lay well in winter if properly fed and their house kept warm. Cayenne is sometimes beneficial. Perhaps some of our subscribers will furnish us with the results with their laying hens during the winter season.]

#### Keeping Apples in Winter.

SIR,—I hope I don't trespass on your precious time with my correspondence. You are so willing to indulge that we take license in asking questions about one thing and another. My first query is:—I saw in one of the numbers of the ADVOCATE some directions about packing apples in buckwheat bran. That may do very well where it can be got handy, but I am sure we could not get as much of it in this country as would pack thirty barrels of apples. I would like to know what is the best thing to pack them in. How would planing-mill shavings or dry sawdust do? I have tried wheat chaff but the apples rotted in it. I have been told that oat chaff is good, as it absorbs the dampness from the apples—some say dry sand. I have been thinking about the hull of oats that have been kiln-dried. It is of some importance to preserve winter apples here, for in fall or winter we cannot get more than fifty cents per bushel, whereas in spring or late-winter we can get one dollar per bushel—and a treat at that same. We have not as large a crop of apples as we expected earlier in the season. The worms are still doing their work amongst the apples—notwithstanding all our remedies.

Plums are scarce in some places—others about half a crop. Red plums were all blasted by frost and fly—the fly rolling up the leaves with green lice. I dredged my plums and pears with hellebore water, but it failed to affect or dislodge them, as they were in the leaves rolled up. A blight has attacked our plums; a dark brown spot shows on one side of the plum, and in two days it will be all over—black and rotten like a hatched egg—and those I have pulled green have rotted in a few days. Some others have caught the same blight. What must the cause be?

I hope you will give us some useful information in the next number of the ADVOCATE about packing apples. M. B. C., Walkerton.

[Saw-dust and shavings will injure the flavor of apples. We think the hull from the kiln-dried oats would be a good material to pack in. A good plan is to have a lot of square boxes made of the same size, so as to hold 1 bushel, 1 1/2 or 2 bushels; then pack the boxes in a cellar and keep the temperature right. If the apples are sound when put in the boxes they will come out all right. Perhaps some of our fruit-growers or entomologists may furnish us with more light about the plum and insect questions.]

#### Wheat Growing.

SIR,—In 1877 Mr. William Hewgill, Lot. 17, Con. 12, had as the yield of 48 acres of fall wheat 1176 bushels; Mr. Thos. Irwin, 9th Con., from 2 acres had 115 bushels of wheat; Mr. Joseph E. Alexander, 9th Con., from 3 acres had 141 bushels of spring wheat. Many others had from 40 to 50 bushels per acre; from appearance of crops throughout the township this year, heavy yields may be expected. The following figures will give some idea of the value of land in the same township.

Mr. Nicholson, 12th Con. paid for 20 acres at the rate of \$57.50 per acre, and has been offered \$60 per acre for 100 acres; Mr. Spaul, 10th Con., has been offered \$6,000 cash for 100 acres, his price is \$7,000; Mr. John Anderson, 9th Con., bought 100 acres of bush land (no improvements) at \$20 per acre; Mr. Todd, 9th Con., has been offered \$4,200 cash for his farm of 100 acres, his price is \$4,500; Mr. James Kinmer, 11th Con., paid \$1,600 cash for 50 acres of unimproved land. The future of this township, who can tell?

J. N., Collingwood Tp.

SIR,—Would you please inform me through the columns of the FARMER'S ADVOCATE of the proper way to cure tobacco without a drying-house and fire. N. K., Lynedoch.

[Would some of our readers who have experience in growing tobacco reply to the enquiry of 'N.K.'?]

#### Drain Tiles.

SIR,—A correspondent of the ADVOCATE in the May number wanted to know where drain tiles could be obtained; if lumber would not be preferable to tiles, etc. I would say to every man that owns a piece of land, drain tile is the best and most durable; but if tiles are not obtainable, use stone or lumber made into boxes, two boards nailed together or three pieces nailed together.

Three straight poles about four inches thick make a very good drain. Dig the drain ten inches wide, lay two poles in the bottom of the drain and one on top, and put in a small quantity of straw or brush to keep the soil from falling through the joints.

We commenced to drain twenty-five years ago, using pine lumber, slabs, rails, poles, etc. The lumber or wood drains were all right for twelve or fourteen years, when the wood began to rot, and we had to re-lay with tile. This summer we opened a tile drain that was laid in 1863, to run a lateral drain into it, and the tiles were so hard that I could not cut a hole into them without breaking them.

Drain tiles are made and can be obtained at the following places in the County of Oxford: Plattsville, near the G. T. R. Road; Woodstock, on the G. W. R. Road; Tavistock, on the G. T. R. Road. In the County of Waterloo: New Hamburg, on G. T. R. Road; New Dundee, on G. T. R. Road, and Doon, on G. T. R. Road. They make about twenty thousand tiles in each of the above-mentioned yards weekly.

W. C. S., Wilmot, Waterloo Co.

#### The Weevil (*Calandra granaria*).

A correspondent wishes us to publish in our journal an account of the insects that are to be so much dreaded by farmers who keep their wheat stored in the granary for some weeks or months. The following article on the subject is from an essay by Prof. Hind, of Trinity College, Toronto, a standard authority on such matters:—

A snout-beetle, about one-eighth of an inch in length, with a slender body of a dull reddish-brown color, furrowed wing cases and long punctured thorax. A single pair of these insects may produce six thousand descendants in a year. They are destructive to stored grain in both the perfect and larva state. The female lays her eggs in wheat in the granary. The young maggots burrow into the grain and consume its contents, leaving only the husk. Their transformations are perfected within the husks they have chambered out in the larva state, and so secretly are their operations conducted that it is impossible to detect their operations by simple inspection of a heap of wheat.

On the approach of cold weather the weevils retire from the heaps of wheat, and seek shelter in crevices and cracks of the floor and walls. They remain torpid for a while, and after having paired, soon die. They avoid the light, hence one reason why constant turning of the wheat and sifting is advantageously employed to drive them away. They lie in general four or five inches below the surface of the heap, and here the majority pair. Kiln drying appears to be the only certain destruction to this pest. Frequent turning and airing of the heaps, whitewashing the walls, and keeping the granaries clean, with abundant ventilation, are artifices strongly recommended for the purpose of diminishing the numbers of this pest. It is not likely, however, that farmers in Canada will suffer much from its depredation for some years to come. Where large quantities of wheat, and particularly of foreign wheat, are allowed to accumulate in store, there, no doubt, the ravages of this insect will be felt.

## Stock.

### Cattle Feeding.

Mr. Peter Love has sent the *Irish Farmers' Gazette* the following interesting account of certain results which he obtained by forcing calves into flesh from birth to slaughter:—"Four years ago, my engagement called upon me to provide by the most economical means farmyard manure for the requirement of a hundred-acre growth of hops. Having a dairy of fifteen good crossbred cows and good pedigree shorthorn bull, I determined to rear and fatten for sale to the butcher, at the most profitable age, fifty head per annum. The extra calves were bought in Aylesbury market, of the best shorthorn type—after they had had their dams' milk for a fortnight—at 50s. per head, and I allowed our own dairy credit for the same amount, and 4d. a gallon for skim milk of which each calf had an average of a gallon per day for 108 days. With this they had an average of five-eighths of a pound of equal parts pure linseed, rape, and de-corticated cotton cake meal, boiled and blended with the milk; also an average of 4lb. of roots, green tares, or clover, and a pound of hay per day. After four months old they had a daily allowance of compound composed of one part bran, one malt dust, two rape-cake, two pure linseed, and four de-corticated cotton cake. The cakes were all broken fine, and the compound thoroughly mixed. Of this each calf had 1½ lb. per day, and at the end of each subsequent month ¼ lb. was added to the daily allowance. The allowance of roots, green tares, or clover was 7½ lb., and 2 lb. of chaff, equal weight meadow hay or pea straw for each pound of the compound given. The compound at that time cost 7-8ths of a penny per pound, or £8 5s. per ton; roots, &c., I charged at 12s. 6d., and the chaff at £3 15s., making the rations cost 2 1/6 pence per pound of consumed compound."

He then proceeds to give the exact cost of feeding the same as if he were to purchase all the food. This gave data easily to calculate the cost of each animal the day of slaughter. All were sold by weight and he saw each weighed. The average price was 9d. per pound. He gives a table showing the results from twelve head sold from eighteen to twenty-five months old. Of these were two Sussex and one Welsh the rest were very good common shorthorns. The table shows that the profit per annum on the price varied from 6 to 30 per cent., averaging about 20.

"These results, as far as the feeding, are very satisfactory, and when viewed from a farmer's standpoint, price made, and value of manure per head, the longer the animal is kept the more profitable. But when treated financially all is reversed, and it is found that during the time of most active growth more meat is produced from the food consumed; but when the body gets large a large per-centage of the food consumed is taken up to keep up the heat and meet the wear and tear, and the time comes when this is greater than that assimilated into flesh and fat; therefore after this age gradually daily loss begins.

These circumstances are very different to those where stock are reared with healthy rough pasture to graze inexpensively till they are at the best stage of growth to put up to fatten on feeding pasture or artificially."

### Dogs versus Sheep.

In some parts of the United States so great have been the ravages of dogs among the flocks that farmers have deemed it better to cease altogether the keeping of sheep. In Canada we do not suffer so much from dogs, yet the losses borne by farmers from this instrument of destruction is very great. We would recommend to our county and township councils, for their consideration, the following item which we clipped from the *Michigan Farmer*:

"The Legislature of Connecticut passed a law relating to dogs, under the provisions of which every dog kept must be registered on or before May 1st, of each year, and \$2.15 paid therefor to the town clerk for each male dog, and \$6.15 for each female dog. Each dog must constantly wear around the neck a collar distinctly marked with the register number and the owner's name. Every dog not so licensed and collared is to be killed; \$1 bounty is paid for the killing. Any person keeping an unregistered dog may be fined \$7, or imprisoned for thirty days, or both; and it is made

the duty of the grand jurors and all other prosecuting officers to prosecute any violation of this act. All damages done by dogs to sheep or lambs, or cattle, are to be paid for by the town, and collected in full from the owners of the dogs. Any person killing a registered dog, unless such killing be justifiable for the protection of life or property, is liable for the value of the dog, as established by competent evidence, and to a fine not exceeding \$7, or imprisonment not exceeding 30 days, or both. It is to be sincerely hoped that this law will be rigidly enforced, and that it will never share the fate of many laws heretofore enacted in the States. Usually when one legislative session passes a law which promises adequate protection to the property of sheep owners, the next session undoes the good work."

### Sheep and the Fertility of the Soil.

In an article on this subject the *Prairie Farmer* says:

Sheep husbandry is one of the essential means which has been successfully used in England to bring into the highest productiveness the worn-out lands of that country. There it has been turnips and sheep. In the South it may be mangel wurtzel and sheep, supplemented with corn, to which many portions of the South are well adapted. It is true, grass must be the foundation of all successful farming. In this respect the intelligent farmers there must experiment with a view to finding the varieties best adapted to the climate. There are undoubtedly varieties of clover which will do well there. Alfalfa should be at home in the South, but this plant is better adapted to soiling than to pasturage.

There is no farm animal that with proper care—and this they must have—will do more for a worn country than sheep. So well known is this that their tread has been called golden. It is so inasmuch that while paying well for the care bestowed on them they are constantly enriching the soil on which they feed by their droppings. It has also been said that sheep pay twice, once in the fleece and once in the carcass. This again is a truism, but to be applied with profit the conditions must be congenial and the care exact.

### Grades vs. Scrubs.

A few years since, an experimental test was made in Illinois with a view of ascertaining the actual difference in value and weight between calves sired by shorthorn bulls and out of common scrub cows and those sired by scrub bulls and out of scrub cows. The test was, in fact, between half-blood shorthorns, and full-blood scrubs. In every respect the cattle were upon an equal footing in regard to food and careful attention. At the end of three years the half-blood shorthorns weighed each 500 lbs more than the scrub three-year-olds, and sold for \$25 each more than the scrubs brought. This experiment was conclusive, that the calves of a full-blood shorthorn bull gained an average of \$8.33 in value and 166 lbs in weight every year for three years more than the calves from a scrub bull did—all the calves being out of scrub cows.

This test was an actual demonstration; and the fact ascertained thereby will be fully corroborated by the practical experience of every farmer who has used a pure-bred shorthorn bull with a herd of common cows.

The common scrub cows of this country are the descendants of the cattle of Europe, imported one, two and three centuries ago. During all this long period they have been kept entirely for their milk, and when exhausted from old age or from insufficient food and neglect, they have been sold for butchering. Thus the breed has dwindled in size, and assumed a characteristic type well expressed by the designation of *scrub*; that is, scrawny, thin fleshed, large boned, pot-bellied, big-bagged, crooked-legged little runts.

This breed is so well known that a further description is unnecessary. Their size, shape, and large udders are the results of long continued devotion of the cows for many generations to dairy purposes, and leaving them to shift for themselves in feeding and breeding the best way they could. —*Michigan Farmer*.

An experienced wool-grower says he has abandoned the plan of having but one large field for sheep, because experience has convinced him that a number of small ones covering the same acreage are more desirable. The sheep like a change of pasture and do better on several than on one pasture.

### Shepherd Dogs.

There are many varieties of shepherd dogs—the English, Spanish, French, Hungarian, Scotch and many others, all differing in appearance and disposition more or less. The Scotch Collie is the only reliable, genuine and original sheep dog of Scotland, and from this stock has sprung what we call our shepherd dogs of this country, which are mongrels ninety-nine times out of a hundred. They have enough shepherd blood in them to give them many of the characteristics of the original Scotch sheep dog. There is a class or breed of shepherds very numerous in Eastern Ohio and Pennsylvania, called the Scotch Fox Shepherd. They are smaller than the Collies, and when young have much the appearance and disposition of the common red fox. They vary in color, but are mostly a light red, or brown and red, with white about the neck and face. Some claim them a cross of the Collie and the red fox, and that they were brought here from Scotland with their present characteristics.

The Scotch Collie stands about twenty-one inches in height at the shoulders, is very gracefully shaped, muzzle pointed, ears half erect, coat long, fine and silky, tail and hams fringed with long hair, color usually black and tan, but frequently sandy yellow. His disposition to tend sheep is inherent and hereditary. As to the spaniels and other varieties of dogs, I have no knowledge—am an enemy to all mongrels of the canine race, and I hope that legislation will eventually make the dog tax so oppressive as to totally eradicate the vast army of worthless curs now in this country.—*G. W. H., in Rural World*.

### Raise More Sheep.

The following extract from an American paper will doubtless strike many of our readers as being applicable on this side of the border as well as "ayont" it. We, too, need some means of giving employment to thousands of laboring people, and increasing our manufacturing interests and sources of industry. From the St. Lawrence to the far north sheep thrive better than they do more southward.

During the year 1877 the United States imported \$7,156,944 worth of wool. The importation of manufactured woolen goods during the same time amounted to \$32,000,000. This enormous sum of money might have been kept in the country as well as not. It would have added just so much to our real wealth. It would have done more—it would have given employment to thousands of laboring men, women and children, and increased our manufacturing interests and sources of prosperity. It seems strange that so much money should be allowed to leave the country each year, when our whole area is especially adapted to sheep-raising. From the St. Lawrence to the Gulf, from the Atlantic to the Pacific, sheep find a genial home. They are a source of revenue among the rock-clad hills of New England and on the wild prairies of Western Texas. Their wool and their flesh are staple articles of commerce, and their skins are in demand for many purposes.

According to Mr. McDonald, of England, who has recently visited Canada and the United States, the greatest drawback connected with the stock growing interest is the indifference and carelessness of the farmers in the selection of bulls for breeding from. This evil, he says, is not nearly so great as it was, but still it is very prevalent. If Canadians are to profit by the British meat market, great change must take place. To send inferior beef to Britain would be simply to kill the enterprise at its very inception. The expenses are all the same, and only a small percentage of British people will take hard, inferior beef so long as they can do better.

Sheep dung decomposes more rapidly than cow dung, and not so quickly as horse dung. It is richer in solid matters than the former. The pig being almost an omnivorous animal, its excrements vary in composition, according to the nature of its food. Its dung is soft and compact, and it decomposes slowly. It is one of the richest kinds of animal manure, but it is alleged that when used alone as a manure it gives a disagreeable flavor to roots. On the Continent pig dung is largely applied to the hemp crop.

In growing cattle, the most popular breed ought to be that sort capable of producing both good beef and plenty of good rich milk, the more of both on the least feed, the better.

**Dairy.**

**Oleomargarine.**

There has been quite a storm among dairymen and writers on matters pertaining to the dairy in the United States on Oleomargarine, some contending that it is unfit for human food and liable to beget disease in any who eat it; others asserting on the contrary that it is in no way injurious to health, and is a better article than second-rate butter. It has also been stated, and the truth denied, that dairymen have been in the habit of adulterating their butter by an admixture of Oleomargarine. The *Prairie Farmer* in an article on the subject writes as follows.

"The fact is oleomargarine cannot be used to any considerable extent without detection, if proper means are used. The fat must be bought in the market and shipped to the factory. The manipulations cannot be carried out without employees knowing something about it. If found out it would forever ruin the reputation of the adulterant as a first-class butter maker. That it has been used we are well aware, and so far as we are advised it has always worked to the detriment of the maker. Yet oleomargarine is in itself innocent. It is not butter; never can be. The oil churned with sour milk or a portion of cream may look like butter, but it can never have the peculiar aroma and taste of first-class, cleanly dairy or creamery butter, and this in fact constitutes the essential value of butter. Oleomargarine, if cleanly prepared from pure sweet kidney fat of neat cattle, is as healthful and as nutritious as butter. It is really the liability that the fat contains noxious germs that renders its use reprehensible. If individuals pay for pure butter they want it and nothing else, and the manufacturer who vends the spurious article for the pure ought to go to the penitentiary.

We do not believe—have never believed—that the first-class butter in our markets was largely adulterated with the fat of animals. That inferior grades of butter have been composed largely or wholly of oleomargarine, there is no doubt. The only safeguard to the purchaser as the *Prairie Farmer* has repeatedly stated lies in the brand of the maker. Honorable men who have a reputation to sustain will not adulterate their wares. Those who do will eventually be found out. When found out, their occupation will be gone so far as first class prices are concerned. If they suffer no one will feel sorry.

We repeat what we have heretofore said. The only way for dairymen to fight oleomargarine is the true way. Make a far better article than the "fat butter." Intrinsically, oleomargarine if well made is cleanly, and healthful. It is a standard article of export, and the French, who are said to rather favor it, like it, we have no objection. If pure oleomargarine is churned with milk and worked in a cleanly manner, the fat, buttermilk and water resulting are better than what is denominated grease butter in the markets of our cities. If people choose to use it we have no objection, but we want it sold for what it really is. It should not be called butter. That is a swindle. The individual or firm who makes really good butter and sells it on the reputation of his own integrity, has little to lose through the flooding of the market with the spurious compound.

**Grades as Milkers.**

BY PROF. LEVI STOCKBRIDGE.

A recent writer suggests two very important questions, the facts in relation to which, and the principles controlling the case, should be well understood by all dairymen and breeders of dairy stock. His query is, do heifers, from native or scrub mothers by bulls of thoroughbred milking stock, make better milkers than their dams; and if so, why? Why take the qualities of the stock from the sire, rather than the dam? It is an indisputable fact that many native cows are superior milkers and butter-makers, and this quality is transmitted to their daughters in some cases, until a family exists of local celebrity. This characteristic, however, has generally been lost in the course of three or four generations, for want of care in keeping up the regular line, or by the yearly infusion of blood of base or unknown quality. It is quite possible that remarkable milking qualities in an individual native cow might

be perpetuated to remote descendants, and even increased, by careful selection of the sire, and in-and-in breeding. But this is the method by which thoroughbreds are produced, and requires skill and intelligence of a high order, and years of observation and labor. With a good native cow as the basis or stock, much anxiety and time may be saved, by an immediate infusion of the fixed blood of a thoroughbred of the desired type, and the result will always answer the first query in the affirmative. The calf will be better than its dam, in some respects, and worse in none. As an accident or sport, it is possible the dam might be a better milker than the dam or breed of the sire, and the calf taking the type of the sire be inferior to her, but the rule taught by experience is the other way. In this case the characteristics of the offspring are determined by the long-known law, that the longer a class of animals is developed in a single line, the greater is their transmitting power, with the more certainty do they impress their qualities on offspring. The blood of the dam having no line of descent, and no accumulated force, is overborne by the thoroughbred sire. Theoretically the progeny of such a connection is more than half-thoroughbred, and should develop more than half the sire's stock qualities in milk and form. There is but little danger of reversion to original form if this method of breeding be adhered to; but even if there were, it is undoubtedly the cheapest, quickest, and surest way to develop fixed milking qualities from native cows.

[Upon a great majority of the old farms of New England, and the Middle States, cows have been used for milk; and neglecting almost every other quality, bred for milk for many generations. They are well-bred in no other particular, but not a few of them are in this. When such cows are crossed with a bull of any of the established breeds, is it surprising that even a grade Hereford proves a grand milker? That shorthorn grades, even by sires of families bred rather for beef than for milk, should prove great milkers would be looked for from the fame of their dams and from their own superior form and higher grade as animals. That Ayrshire grades from such a cross should give much milk, and Jersey grades rich milk, we look for as a matter of course.—Ed.]

**Lowest Cost of a Pound of Milk.**

The most important fact for farmers to know is the lowest practicable cost of a given product. The elements that go to make up this knowledge are very diverse, and if every dairyman could answer accurately the heading of this article, he would have more knowledge than any one at present possesses. This is a humiliating confession, but it is nevertheless true. It would, at first thought, seem an easy matter to determine the cost of a pound of milk. The simplest method to determine it, in reference to a particular cow, would be to keep an accurate account of her food, attendance, and yield of milk for a season; but this would only give the cost of milk from that particular cow, which might be less or more than that of another cow of the same breed. Then, suppose we were to take twenty native cows, so-called, and accurately determine the cost of food and attendance, and the yield of milk for one year, this would give us the facts necessary for estimating the average cost of a pound of milk from these twenty cows; but these cows might be very unlike in their yield of milk—a few of them producing a pound with one-third less food than others—and thus not give the lowest practicable cost of milk, even from native cows, since selections could be made that would yield much more milk from the same food. It will thus be seen that the lowest practicable cost of milk, of a given breed, can be found only from the selection of a large number of the best cows of that breed. If attention had been given to the selection of the best cows of a given breed, and accurate weighings of the milk made on so large a scale as to test the best capacities of the breed, so that we might find the proper average, and then if we had studied practically the most economical food to produce the best quality of milk, we might find, with great precision, the lowest practicable cost of milk for the breed; but the data has not yet been found to determine this, except for individual cows or herds, and in these cases only an approximation can be given.

The few points we have mentioned only go to show how extensive and complicated are the questions that arise in finding the lowest practicable cost of a pound of milk. All these questions would have been solved long since had agriculture been pursued with the same intelligent care that is shown in manufacturing enterprises.

The best data at hand for the solution of this question is found in the report of Colonel Zadock Pratt, made to the New York Agricultural Society, of his dairy of native cows, commencing with the year 1857 and ending with 1865, or nine years, with an average herd of 58 cows for the whole period. The average production of milk was 4,642 lbs. per cow, per annum. In the year 1863 he kept 82 cows, and had an average of 5,071 lbs. of milk per cow. This is the best case on record of the continued yield of native cows, in such large numbers and for so many years. These cows were fed, in addition to pasture and hay, during the milking season, two quarts of oats, corn and buckwheat, ground together. Let us see how near we can approximate to the cost of this milk. If we supposed the land on which the cow is pastured to be worth \$100, and interest to be six per cent., the cow to be worth \$40, and the annual interest on her value to be ten per cent., and hay to be worth \$8 per ton, the account will stand:

Value of cow, \$40—10 per cent. . . . .	\$ 4 00
Pasturing . . . . .	6 00
450 lbs. of ground feed . . . . .	3 60
Two tons of hay at \$8 . . . . .	16 00
Labor, over value of manure . . . . .	5 00

Whole cost of 4,642 lbs. of milk . . . . . \$34 60  
or .77 cent per pound.

This would make 464 lbs. of cheese, or 200 lbs. of butter, as Col. Pratt actually produced, per cow. If this was good creamery butter, worth 30 cents per pound, it would yield a profit of \$25 per head.

We hope some of our readers who keep pure bred cows will give us the cost of producing a pound of milk, figured on the actual product for a herd. Such definite knowledge will be of great value to the dairy interest.

**PEAS FOR CATTLE.**—A. W. Stokes, Hernando, Miss., says: I have for years kept fatter cows and had more milk and butter, and for less money, than anybody I know of. First—I sow peas broadcast, three pecks to a bushel per acre, in the month of May, harrowing them in after breaking the ground well; then, in September, I pull them up just when a few begin to dry, and make hay out of the vines and peas. I get from 4,000 to 5,000 pounds per acre of hay that is eaten by cattle and horses as eagerly as if it were the best clover. Pulling up is far preferable to mowing, as cattle seem to love the root better than the tops, and it is said to be more nutritious. No manuring is necessary, and one acre sowed in peas is worth six of fodder.

Joseph Pfunstein, of Illinois, has a curious device in his yard for salting. It is an elevated circular platform, in the center of which is fastened a round box holding a peck of salt; the box has a conical shaped bottom, resting on a pivot, which revolves as the cow licks for the salt, and as it gently oozes out.

A correspondent of the *American Farmer* writes on the subject of the capacity of sheep to improve soils, or renovate worn-out land. He says: "From many years' experience and observation I am fully convinced that plowing in green crops with lime—such as clover and others—is the most economical and speediest means that a farmer can use for bringing up worn soil. Yet it can be very profitably done by the use of sheep—in pasturing even. More than once, and on more than one farm, I have seen dry, barren spots, such as gravel knolls and side hills, made fertile and productive in a single season simply by salting a small flock of sheep on those barren spots twice a week during the summer. The sheep would be sure to resort there several times a day to lick up the salt, and thus leave their droppings, both liquid and solid, which are very rich fertilizers; then the next season the most rank and luxuriant growths of grass or grain would be produced on these 'galled spots' of any other portion of the field; thus the best kind of manure was applied and spread just where most wanted without any hard labor. Weight for weight, sheep manure is more fertilizing than either horse or cow manure, and next in value to hen or hog droppings."

The flax of which the Oneida Indians have sowed a large quantity this year is an excellent crop with them. With improved educational facilities and abundant crops they may rejoice in their prosperity.

In the use of bone manure it is well to bear in mind that the more finely it is pulverized, the more quickly it acts.

**Dairy-Women.**

On large dairy farms in this country the milking is of necessity done by men; but on smaller ones it were better, in many cases, that it should be done by women. They seem to understand how to do it almost intuitively, and cows themselves prefer to be milked by them. It is said that they frequently accommodate themselves to women-milkers, while they refuse "to let down" or yield a ready flow to men. It was formerly the case, when the occupations of the dairy-maid were considered among the pleasantest duties which engaged the attention of the daughters of our well-to-do farmers. Milking cows is known to be one of the most healthful of all rural employments. The aversion which girls of the present day have to this branch of dairy work arises in part from the unfavorable conditions under which they are frequently required to perform the service—exposure to storms, untimely hours, filthiness of the stables or barn-yard, long distances to carry the milk, etc. These, where they exist, are valid objections, but they are such as may readily be removed.

It should be the business of the head of the farm to see that the females who attend to the milking are afforded proper helps and conveniences. They should be provided with a dry and clean place to milk; the cows should be placed; and, where the distance is great, the milk should be carried—everything, in fact, but the actual milking and manipulation of the milk should be done by boys or men.

Give the girls a fair chance, and restore to them what fashion or pride has for a time taken from them—an occupation or industry at once pleasant and invigorating, and one which will give bloom to their cheeks and strength and health to their systems. In Holland the milk-maid is accompanied by a boy. The boy tows a little boat along the canal, and the maid with her full blue petticoat and her pink jacket walks beside him. Arriving at the pasture, she brings from the boat her copper milk-pails, as bright as gold, and with a kindly greeting to her cows, sets down her little stool on the grass and begins to milk. The boy, having moored his boat, stands beside her with the special pail which is to hold the last pint from each cow; the creamy pint, which comes last, because it has risen to the top in the udder. Not a drop is left to turn sour and fret the cow. The boy fetches and carries the pails. The girl milks the cow, and the boy does all else. The services of the girl are brought into use again in the dairy-room; but from the lifting and harder kinds of the work she is exempted.—*American Dairyman.*

**HOW TO CHOOSE A PLOW.**—Plows frequently annoy those who use them in a most mysterious manner. They refuse to run evenly in the ground and refuse to keep to the land as they ought to do. On examining them nothing seems to be wrong. Every properly shaped plow ought to have a slight concavity along the base of the land side, of one-eighth or three-sixteenths of an inch, so that the implement will "suck" into the soil and run steadily. This concavity may be shown by holding a steel square to the bottom of the plow. If this part is convex, as it not unfrequently is, no matter how high a reputation the maker of the plow has, it will not stay in the ground, and will annoy the plowman till the evil is remedied. The land side of the base should also be slightly concave, to the same extent of one eighth of an inch or more, and never ought to be convex or bulging under any circumstances. If these apparently trifling items are properly attended to at the time of selecting a plow, much trouble may be avoided which often seriously perplexes the plowman, and causes him to lose much time which may thus be saved.

**HOW I MANAGED THE CURCULIO.**—Not having trees big enough to bear last year, I thought I would try good cultivation for one season, and see what the prospects would be for fruit this year. In April my eight young Damsons were full of bloom, but I did not like to apply the smoke, as was recommended by the writer, under the trees, as they were too close to my building. I simply kept the ground clean of weeds and grass under each tree all the season, and have done the same this year. And I make it my business every few days to pick up all the falling fruit and give it to the pigs. In the spring, I dissolved one pound of soda and one pound of salt in two gallons of water, and applied on the ground close around the stem of each tree. The result is, my trees are healthy and loaded with fruit.—*Cincinnati Bulletin Correspondence.*

**A REMEDY FOR CHEAT AND COCKLE.**—Some years ago my wheat was very much "turned" to cheat and cockle. As I had just as much faith in wheat turning to one as the other, I resolved to sow no more of the seed of either, and took a screen off an old fan, put a rim around it, sat down by my heap of seed wheat, cockle and cheat or ches, and sieved it so long as any cheat, cockle or small grains of wheat would go through. I sowed only what would not pass through. The result was, scarcely a stalk of anything but wheat could be found in 45 acres the next harvest, and what few stalks appeared I presume had been in the manure. I treated my seed the same way the next fall. The following spring, in sowing grass seed over 50 acres, I found but one stalk of cockle; and in harvesting, not a handful of cheat, and no cockle was found—notwithstanding the wheat had been badly winter-killed, and one field near the barn had been run on, tramped and eaten by the lambs and chickens very much.—*Cor. Farmers' Friend.*

There is now in progress of organization in Charleston, S. C., a factory for the manufacture of cotton bagging from jute, which, it is said, will be in operation in less than two months. Jute seed has been distributed by the agricultural society of that state to about sixty planters along the coast, so that it is believed that within a very short time the South will raise, spin and weave jute; not only for its own use, but for other districts. The culture and manufacturing of jute have become very extensive, as a million acres of land in India are devoted to its cultivation, and one factory near Calcutta employs 4,000 workmen, while at Dundee, in Scotland, there are said to be about a hundred jute mills, employing some 20,000 operatives. It is believed that the south can grow jute as successfully as India can, and manufacture it as profitably as it can be done in Dundee, and that it will be done if the import duty on jute be allowed to stand until the Southern plantations and factories are allowed to have a fair start.—*Rural Messenger, Petersburg, Va.*

**MOWING STRAWBERRY BEDS.**—For several years past I have adopted the practice of mowing my strawberry beds at the period that the plant ceases to put forth new leaves, and the old ones look dry and rusty. The treatment prevents the production of runners to any great extent, the beds being renewed by offshoots from the crowns of the old roots. Usually by fall the plantation will exhibit one mass of fresh-grown leaves. This treatment fails only when a dry and hot spell succeeds the mowing. I have never suffered but once in this way, when the beds were badly burned and thinned out. I did not lose them, however, as they afterwards revived, and though five or six years old, look, this season, like new beds. I am so well satisfied with this system, that I shall always continue it, taking the risk of having the operation defeated by a drouth which, after all, only happens occasionally. With plenty of rain it succeeds perfectly.—*Horticulturist.*

**ROOTS AND STRAW.**—We take the chaff cutter and the root pulper to be the two bases of the stock-breeder's operations. The moisture which turnips contain, forms, when absorbed by the chaffed straw, hay or pea haulm, a bulky food on which a greater number of stock—of all kinds and ages—can be kept, than by any other treatment; and this material may be used as the basis and vehicle for the profitable consumption of not only bulky, but of concentrated food. Whether for feeding or breeding, and whether for beasts or sheep, there is no form of food with which we are acquainted which will keep going so large a stock as pulped roots and chaffed straw combined.—*Agricultural Gazette.*

In a recent speech in the U. S. House of Representatives, Hon. H. C. Burchard, of Illinois, presented some interesting statistics relative to the commercial condition of the country. He showed by official figures that the increase in all the sources of national wealth in the United States has been greater in the seven years since 1870 than in the ten years between 1860 and 1870. He also cited the astonishing fact that the exports during the past year exceeded the imports in value by more than \$200,000,000, and argued from this that the country is suffering, not from poverty, but from its plethora of everything valuable, combined with a lack of markets for the disposal of the surplus.

**HOW TO KILL THE HESSIAN FLY.**—A practical farmer writes that, being much afflicted by the Hessian fly in New York State years ago, he "sowed one barrel of salt per acre, immediately after sowing the seed. That made it come in ear all of five or six days earlier, and that saved it from the midge. In 1853, when all crops around me, far and near, were almost ruined, mine gave twenty-nine bushels per acre; salt saved it. I never sowed less than one barrel per acre." He has never been bothered with the midge since. He says salt prevents rust.

**PUBLIC SALES OF HORSES.**—The *Live Stock Journal* says that horse breeders are beginning to take courage. The active European demand for American horses is already bearing its legitimate fruits, in the increased confidence with which breeders in the country are regarding the business, and the active demand which is apparent for large, stylish, well-bred roadsters, and strong, hardy draft horses. Farmers can now take hold of stock of this kind feeling assured that there can be no loss at present prices, and with every prospect of continued improvement for some time to come.

At a farmers' meeting in Barrie, Mass., a member asked, "Why is it that one-third more seed is required now in planting grain than in former years, before the threshing machine was invented?" Another thought that the germinating power of a large portion of the grain was destroyed by the "lightning speed of the cylinder;" of late years he has used the flail and the result had justified his conclusion. The suggestion was made that there might be other causes, perhaps of an insect origin.

**TO GET RID OF CANADA THISTLES.**—Mr. Stephen Burrows, after trying for several years to eradicate a patch of Canada thistles on his farm, with very indifferent success, hit upon a plan last fall that he claims finished up the job. The pomace from his cider mill applied to them did the work effectually. Canada thistles, whenever they get a foothold, are a terrible nuisance, and the greatest exertions should be made to subdue them on their first appearance.

One of our exchanges, in speaking of the demand in all our large cities for large, stylish, high-stepping, well-bred horses, says:—"Such horses are wanted to drive on our avenues, in our parks, on our fair grounds, and everywhere. And such horses are not only in demand in double teams for carriages, but for barouches, buggies, or even drays and carts—for such horses fill every bill nearly that a horse can be used for."

Make your farm so valuable by constant improvement, skillful culture, good fruit, ornamental shrubbery and pleasant surroundings that no money will tempt you to leave it. We think it should be the settled purpose of every young man to put down his stakes for life, to make a permanent home which he will never wish to part with till he is called to the better land.

A Bordeaux journal states that a wine grower in the Gironde has discovered a means of getting rid of the phylloxera. He has remarked that a parasite of the strawberry plant carried on a war of extermination against that insect, and that where the strawberry is grown among the vines, they have not been attacked.

It is said that Dr. Chevalier, of Norfolk, Eng., observing some very fertile ears in a crop of barley, separated them from the rest, and, by sowing the grains separately, gradually propagated the variety which goes by his name. Its prolific quality has been tested by the extraordinary fact that 380 stems have issued from a single grain.

**RATS IN IOWA.**—A leading agriculturist of Iowa has called public attention to the enormous destruction of property by rats in that State. It will surprise most persons to learn that after careful investigation he estimates the loss from this source at not less than \$1,000,000.

**SORGHUM SUGAR.**—A Nebraska farmer claims to have made 600 pounds of bright sugar and 153 gallons of amber syrup from two acres of cane. The seed planted was of the early amber variety. The sugar was obtained by hanging the thick syrup in coffee sacks after it began to granulate.



**The Family Circle.**  
"Home, Sweet Home."

**Retribution.**  
WRITTEN FOR THE FARMER'S ADVOCATE.  
BY LU.

It was near sunset. The yellow orb was hastening to kiss the summit of trees that barred the western horizon. The sun-kissed mantle that draped the shoulders of the mountain reflected beautiful roseate tints, deepening into red and purple in the hollows of the ravines, and seeming all the more lovely from the contrast of the dark forest that presented itself to view.

It was a sunset more brilliant than common. The western sky was filled with masses of colored clouds in which gold and purple and cerulean blue mingled together in gorgeous magnificence, and in which the eye of the beholder could not fail to note the outlines of strange forms, and fancy them bright and glorious beings of another world.

It was a picture to gladden the eye, to give joy to the heart, and make happier the happy. Two forms majestic—of soft graces and wavy outlines—were bathed in the rich halo of golden ochre sunset as they stood near a brightly-blooming arbor that rivalled that ancient bower of Eden.

One was a manly form, tall, dark and handsome. His companion was a beautiful young girl, possessing beauty—not alone confined to the exterior, but—of mind that shone with more lustre than all the gems that gild the mine in distant Brazil—"More precious than gold; yea, than much fine gold." Her face was of that rare expressive type; her eyes were handsome, and gifted at times with a winning beam that stole into the heart with a language that spoke softly to the affections.

So here I find you, Miss Admirer-of-Nature! Is this reflective mind you possess the secret of your amiability? But there I did not come to question—'twas merely to offer my sincere thanks for the pleasure your company has afforded during my stay in this charming rural vicinity, and to utter that harsh little word, "Farewell."

"Farewell!" came like an echo from the blanched lips of Edith Mortimer, who statue-like stood gazing upon the retiring figure of Ralph Walters.

Only a few short weeks had Ralph and Edith met; he, with a zeal worthy a better cause, during the intervening time had won—for self-amusement—the affections of this beautiful and imperial girl. And has it ended thus? she wailed; has he really cast me aside to lay siege to new citadels! to weave new webs of victory, with hearts for the warp and wool? to shipwreck new victims on the selfsame sandbar, and his "conquests" held up to the admiring world as trophies, similar as the semi-civilized Indian would his number of "human scalps."

"Farewell!" Ralph Walters—you have "sown the wind; you may yet reap the whirlwind."

Beauty, wealth and intelligence graced the stately hall of Mountain Tower. Willing feet moved lightly through the maze of merry dance to music that rivalled Rizzio's sweetest productions.

Holloa, Ralph, old fellow, you here? Pray, when did you arrive? questioned Ralph Walters' old friend and college-chum, Roy Fitzgerald, with a cordial grasp of hand.

Last evening in the "Minnichaha." But, Roy, in heaven's name tell me what glorious being that is robed so artlessly yet so bewitchingly with foam of white at throat and wrists, and a single moss rose in her hair?

Waltzing with Arch Fortesque?  
The same.

Why, the most brilliant young lady in T——; the belle of the season; the heiress of Belvoir, and niece of our charming hostess.

But the name? gasped the eager listener.

Miss Mortimer. Come, Hiawatha, "you old sentimental owl;" a new set is about forming—come, and I will present you to "Laughing

Water." Give the key of your heart an extra turn, for to her conquest comes natural.

Miss Mortimer, allow me to introduce my old college friend, Mr. Walters.

Recognition and reminiscences caused each heart to beat a quick-step, but each guarded the secret of the past—they met as strangers, each uttering some commonplace remark.

Miss Mortimer, will you confer the pleasure of dancing with me the set of lancers about forming? asked Ralph Walters in a deep tone of voice.

With a graceful inclination of the head Edith gave consent, and the next moment they were whirling among the dancers. Excitement gave double lustre to her black dreamy almond-shaped eyes, heightened her color, and added new buoyancy to her already-graceful step.

We will now leave our heroine for the present and ramble to the conservatory in quest of our hero. Reader is your imagination vivid enough to call forth six feet of manhood, of fair complexion and tawny hair and whiskers? If so, I will not enter into a more minute description of Boyer Edwards. Boating excursions, picnicking, etc., had daily thrown Edith Mortimer and Boyer Edwards in each others' society. To him it was the same old, old story. Love came wandering like a lost angel to the door of his heart; knocked and was admitted; welcomed, embraced, his quiver was not seen, and when his arrows penetrated their wound was like a thrill of new life; no fear of poison dreaded; none of the bard that no leech's hand can extract. The foliage whispered "She loves thee, Boyer," and in this belief he reposed his trust and went on weaving an enchanted web of fairy tissue, as bright and as beautiful as the film of the gossamer when it is pearled with dew and glimmering in the morning sun.

But Ralph Walters had this evening obscured the disk he always wanted to see clear. She loves him, he murmured; he can not gaze upon her but her eyes will presently flash upon him. Cruel fate, why hast thou woven around my heart such a net-work of fine links from which I can never break free? Edith, you shall never know the depth of my soul's sorrow. The mazy current that flows on the exterior shall not fairly indicate the depth and force of the restrained waters.

He was startled from his reverie by the entrance of the twain that had stepped into the arena of his fancy and played such a prominent part. Ralph Walters was speaking in low, passionate tones, telling his tale of love, that ever since the world began there has been scarcely variation enough to make it interesting to third parties. Each feature of Edith Mortimer's face was lit with rare animation, and calmly she replied:

Mr. Walters, you have very much improved as an orator since you lisped that self-same story to a little country girl, who, believing you the soul of honor, believed your story as well. Fate has again brought you and that self-same country girl together; you plead now in earnest, but there is no heart's response to that pleading.

Edith, forgive, I implore, the freaks of my boyhood; you are certainly using stratagem to prove my affection.

I have answered you according to the dictates of my heart, and I will say even further, I love another one with whom you can no more compare than "might the wayside weed with the stately monarchs of the forest." Mr. Walters, will you please retire to the ball room? I wish to be alone.

Silent and crestfallen, he withdrew, leaving Edith to muse, mingling the past with the future, and blending memory with imagination. So engaged with dreams of the mind, she did not observe the form that stood before her until the stillness of the air was broken by that one little word—Edith!

Boyer!

True love always battles the pen of the readiest writer, and the sequel to this tale is simply this:

By the Rev. D. D. Layton, assisted by T. L. Dallas, Boyer Edwards to Edith Mortimer.

To urge a child to great mental exertion while it is passing through a period of bodily growth is to put an undue strain upon its powers. A dull child will be rendered more dull and hopeless because it cannot perform its task, and the urging to exertion may produce nothing but a solemn resistance to authority. An eager, docile child will respond to the impulse, and will exert itself beyond its powers; and then an exhaustion will follow which may permanently injure both bodily and mental health.

**Wash Day Thirty Years Ago.**

From the time I was seven till I was thirteen years old I had to help my sister on wash days. As soon as we had our breakfast we posted off with our clothes, soap, pails, lunch, etc., to the lake, a half mile from our house, (the lake has dried up since and is now under cultivation,) where our tubs and kettles were usually left. It was the neighborhood (four families) wash place. But we did not all wash on the same day. The kettle belonged to father and uncle "Ike." It was known as the "big kittle," and was the only one in the neighborhood, and as all wanted to use it, we washed on separate days. We had no washing machines then, not even washboards nor wringers. It took our combined strength to wring any heavy article. I would hold and she twist till we got all the water out. Instead of washing machines we used a "beatle" and "beating-bench." Our "beatle" was made by splitting a stick three inches in diameter, and trimming one end so as to fit the hand. We used the flat or round side as occasions required. The "beating-bench" was the half of a log, flat side up, one end resting on a stump, and the other supported by two legs (pegs).

We soaped the clothes, put them in a tub of hot water, from which they were taken a few at the time; placed on the "beating-bench" and "beatled," (pounded,) with the "beatle," being turned in various ways during the process, until so dry the water would no longer splash in the "beatler's" (my) face; when they were dipped in the water again and subjected to the "beating" process till the dirt was out sufficiently, when they were put in the kettle and boiled. While the boiling was going on, as it was usually noon, we ate our lunch. The clothes were "beatled out of the boil," rinsed in the lake and hung on the bushes to dry. While our clothes were drying we picked berries, fished, or pushed each other off the log into the lake, mostly the last.

Now girls, you who grumble on wash day with all your labor-saving improvements, think what wash day meant in the days of "beatlers," and thank God you have something better.

Yes we did get the clothes clean too—we had to, JAKE.

**That Noisy Boy.**

"O, Johnny!" cried a nervous mother, "do have some pity on my poor head! Can't you play with out shouting so?" Poor Johnny drew up the tape reins with which he was driving two chairs tandem, and called out in a loud, hoarse whisper: "Get up—whoa!" But at length, finding little pleasure in this suppressed amusement, he threw down his reins, and, laying his hands upon his breast, said, with a long breath, "O, mother, it's full of noise in here and it hurts me so to keep it in! Don't all little boys make a noise when they play?" "Yes, Johnny, I believe they all do," replied the lady. "O, then, mother dear," cried Johnny, in a winning tone, "please let me be a little boy." We will join poor Johnny in his petition. Please, mother, let your sons be little boys while they may. Let them have a free and happy childhood, that when your heads are low in the grave they may point back to those days and say, "We were happy children, for there was always sunshine where our mother was."—St. Nicholas.

This rather good story comes fresh from London. It is of an Irishman of considerable ability, totally unacquainted, however, with what is termed "society," who, entering Parliament rather late in life, felt intense enjoyment in the unaccustomed pleasures of London society. At the termination of his first session he conceived it to be essential that he should call promptly on the fair heads of houses to which he had been admitted. In one instance the lady of the house was of considerable distinction, rather in the sere and yellow, slightly *mechantre*, yet pleasant, popular and affable. She received the Hibernian with much politeness, listened to his stories, which for her had the charm of novelty, asked after his plans for the coming autumn and winter—in short, made herself vastly agreeable.

"I trust," he says, "Lady—, when I return to town next season I may have the honor of calling on you?"

"Oh, Mr.—, I may before that time be in Kensal Green"—a beautiful cemetery.

"Well, at that charming retreat you will, I hope, permit me to call?"

### Minnie May's Department.

MY DEAR NIECES,—One of my nieces writes for an easy method of washing dishes. She says "dish-washing" is her greatest trouble, and is undoubtedly a trouble with many little girls. The first thing necessary for the great task is to have plenty of hot water, of course. Make a point of having a boiler or kettle well filled before each meal, so as to be in readiness. After the table is cleared, the table cloth neatly brushed or shaken, and folded away, and dining room tidied, proceed with the dishes. First take a large dish-pan, put into it a bit of soap and pour three or four dipperfuls of hot water over the soap; then add cold soft water sufficient to make it cool enough for the little tender hands to bear. Be careful not to attempt to use too hot, or it will redden the hands and make them look coarse. Wash the cleanest dishes first, such as glasses, cups and saucers, spoons, etc. Put them in a pan, then pour hot water over the whole of them, and then put on a tray to drain. Then wipe with a clean, dry towel, and put away. The dishes should be scraped free from grease, crumbs, bones, etc., before commencing to wash them. A neat housekeeper will have the same dish-cloth in use until it is worn out, when it should be put into the rag bag. Never allow the dish-cloth to be used for anything but washing dishes. It is a good plan to rinse your tea-towel with a little clean warm water and hang up to dry to be ready for use. Hoping these hints will be of use to my little inquiring niece and others,

MINNIE MAY.

### RECIPES.

#### MATTRESSES.

"Jennie" asks "how a hair mattress may be cleansed and thoroughly renovated." Rip up the mattress and wash and scald the tick, rinsing it well in clear water. Take the hair and put it in a tub of clear, cold water, a part at a time; soak it up and down, pass through another water and lay on boards to dry in the sun. This will remove all dust and particles of extraneous matter. Then pull it all apart till it is light and fluffy. Then replace it in the tick, even it, and tack with a mattress needle. Husk mattresses are treated in the same way, only the husks are not washed, and fresh husks should be added to make up for the waste.

#### TO PICKLE MEAT IN ONE DAY.

Take a tub nearly full of water, and put two pieces of thin wood across it, and set the beef on them about an inch from the water. Heap as much salt as will stay on the beef, and let it remain 24 hours, and you will find it as salty, when boiled, as if it had been in brine for weeks, as the water draws the salt completely through the beef.

#### VARIETY IN FOOD.

We must not restrict ourselves to a few articles of food, but must have a great variety of foods to select from; we must not partake of the same fare day after day, but must vary it as much as possible. Only with a varied and alternating dietary can we be sure that what is lacking in one food will be supplied in another, and what we fail to get to-day we shall have to-morrow.

#### CORN STARCH.

When eggs are scarce, corn starch may be used instead of flour in light cakes. Take the quantity of flour prescribed by the rule, and half the number of eggs, replacing each omitted egg by a tablespoonful of corn starch.

#### LIQUIDS.

Four large tablespoonfuls make half a gill. Eight large tablespoonfuls make one gill. Sixteen large tablespoonfuls make half a pint. A common-sized wine glass holds half a gill. A common-sized tumbler holds half a pint.

#### LEMONS.

Before using lemons for any purpose always roll them awhile with your hand on a table. This will cause them to yield a larger quantity of juice.

### Leaches, Lye and Soap.

The value of ashes depends upon the kind of wood used, the soft woods yielding ashes very poor in potash, which is the important constituent so far as soap-making is concerned. Where soap is to be made from ashes, the first step is to extract their soluble parts, to get a solution of them in water, known as *lye*. To do this the ashes are placed in some receptacle, called a leach, in which water can gradually trickle through them, and come out below as a strong solution or lye. Figure 1

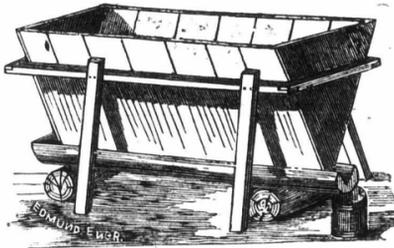
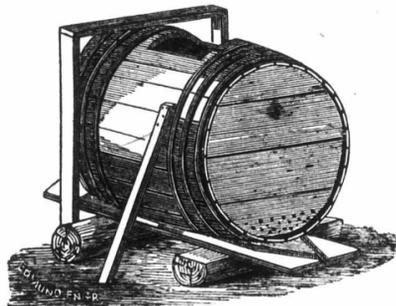


Figure 1.

represents the old-fashioned V-shaped leach sufficiently well to show its structure. There is a frame of 2 x 3-inch scantling about a foot from the top, which is stayed by side pieces; the bottom is a log, in which a gutter is dug to convey the lye to a pail, or other receptacle, placed at its lower end. The manner in which the leach is supported, and the arrangements of its side boards, is sufficiently shown in the engraving. Sometimes an old sugar or molasses hogshead, obtained cheaply at "the store," is used as a leach. The hogshead, first having half-inch holes bored in its lower staves and ends, is set up, as shown in figure 2, upon a grooved plank, which will convey the lye to a vessel placed to receive it. This is kept in proper position by a frame, or by braces at the sides, as shown in figure 2.



TO "SET THE LEACH."

as putting it in operation is called. The old method was to put in the bottom some bricks or stones, then some brush, and over this a layer of straw, and then put in the ashes. This will answer, if no better method can be followed, but it is much easier and better to place on the bottom of the leach, of whatever kind, a piece of old blanket, or old carpet. This will accomplish the purpose for which the straw, etc., are used—i. e., to prevent the ashes from clogging up the holes, and allow the lye to flow out. Ashes moisten slowly, and in filling the leach it is better to put in a small quantity at a time, moistening each layer as it is put in, and compacting it with a pounder of some kind. If the ashes are thus moistened all through the leach will work more evenly than when filled dry. It is customary to make in the top of the ashes a cavity large enough to hold a pailful or two of water, and replenish the water as it soaks way. The more slowly the water percolates among the ashes the stronger the lye will be. It is a common practice to put lime in the leach, six or eight quarts of quick lime being placed on the first layer of ashes. This makes the lye much stronger, the lime converting the carbonate of potash, as it exists in the ashes, in part into caustic potash.

#### MAKING SOAP WITH LYE.

There are some facts about soap-making not generally understood, and are here given in brief. The alkali in lye from wood-ashes is always *potash*. Potash will not, with any fat whatever, form a *hard* soap. All hard soaps contain *soda*, instead of potash. All the recipes that are sold for making hard soap from potash, or from lye, require the

use of salt. The salt decomposes the potash soap, its soda taking the place of the potash and forming a hard soap with the fat, while the potash, having formed a new combination, remains in the liquid at the bottom of the kettle. From lye alone, then, only soft soap can be expected, and this, when well made, is very useful for ordinary domestic purposes, and vastly better than the soft soap sold all over the country, which is merely common hard soap thinned to a sort of jelly with water, and is a most expensive article to purchase. While almost every farmer's wife who makes soap from lye can do it satisfactorily, and have the soap "come" every time, she will find it difficult to give a precise rule, so much depends upon practice and judgment or "gumption." In a general way she takes the strongest of the lye, and boils it with the rough grease, pours this into the soap barrel, and then adds the weaker lye as it runs from the leach. The usual result is a barrel of good strong soap, made without much reference to rules or proportions. So far as we can come at a rule, for soap with lye, an experienced soap-maker says: "Have the lye strong enough to float a potato. Take 12 pounds of clean grease, previously tried out, and add to it four gallons of lye, and boil together over a slow fire, put this into the soap barrel, and add more and weaker lye, to make a barrel of soap, frequently stirring." It will be seen that this is far from definite, and we shall be very glad if some one will give a more precise rule. In making soft soap from potash, the usual rule for a barrel of soap, is 12 lbs. of potash to 14 lbs. of grease. Dissolve the potash in about two pailfuls of hot water, poured on it over night. The potash dissolves quite slowly, especially if in compact lumps. Have the grease, previously rendered, in a barrel, and pour on it the potash liquid, stirring well. If some of the potash, as will probably be the case, remains undissolved, pour on more hot water, and the next day add this to the barrel, and continue doing so, stirring thoroughly, until the potash is all dissolved. Then add cold water, in moderate quantities, stirring each time, until the barrel is full.—S. D. Snook, in *American Agriculturist*.

#### TO KEEP GREEN CORN.

My plan is this, and it never fails:—Gather the corn when in good eating state; place the corn, cob and all in a vessel, and pour boiling water over it; let it remain in the hot water three to five minutes, then cut the corn from the cob, put a layer of corn, then a layer of salt in large stone jars; when full, weight down; keep adding layers as the corn sinks down in the jar; the salt makes a brine without water; when used, soak all night in clear cold water.

#### CANNING TOMATOES.

Skin them carefully by pouring boiling water over them; boil 20 minutes in a porcelain kettle, then take out all the water that stands on the top (or, if preferred to have them thin, only drain off a little of it). Have the jars heated by rolling them in boiling water; fill to overflowing with the boiling tomatoes, and seal quickly. I use Mason's jars, with glass lids, and think them preferable to those with metal tops, on account of the acid in the tomatoes. Mine last season were pronounced a perfect success. Keep in a dry, cool cellar.

#### PEACH FIGS.

Pare and cut nice peaches in half; weigh them and allow half a pound of sugar to every pound of fruit. Heat both gradually without water till the sugar is dissolved, then boil until clear. Take them out with a fork, lay them on dishes without any syrup; put them in the sun and turn frequently, changing the plates if the syrup oozes out on to them. When so dry you can handle them; pack them in boxes or refuse fig drums, with layers of sifted sugar, beginning and finishing with it. The syrup that remains is fine for preserves. These are better than bought figs.

#### APPLE JELLY.

Pare, core and cut up five dozen large, juicy, acid apples; put them in a pan with as much water as will cover them, let them boil gently until soft; when cold, strain through a jelly bag, put the juice into a preserving pan, and to each pint add one pound of fine sugar and the peel of two lemons. All jellies are best made by cooking the fruit syrup or juice alone, adding the sugar just a moment before removing from the fire. A piece of writing paper cut the exact size of the glass, moistened in brandy and laid upon the jelly, will prevent mould. A jelly-bag made of stout, unbleached muslin will prevent some vexatious accidents. I have never used any patent arrangement that is as satisfactory to me as this. The most convenient shape is ob

tained by folding a square piece of goods so that it shall be in the shape of a triangle, then sew up and fell one of the straight sides, fasten a strong strip of goods to this seam, and to the loose corner, you will then have a funnel-shaped bag that will not drip juice all over table and floor, and can also be suspended in a convenient place to drip until cool enough to be pressed with the hands.

**BAKED BEEFSTEAK.**

It sounds queer, but it is a good way, nevertheless, to dispose of a round steak. Spread over it a layer of dressing made of bread crumbs, and seasoned as for turkey; then roll the steak carefully and tie it in shape. Bake it in the oven, basting often, and cook long enough to be tender, but not dried. When done remove the twine carefully and put the meat on a warm platter; pour the fat almost all from the pan; to the balance add some flour; let it brown, then add water and seasoning; when it boils and thickens pour the gravy through the strainer. Slice the meat from the end in serving.]

**REMOVING GREASE SPOTS.**

Grease spots can be quickly removed from paper by scraping a little pipe-clay upon both sides of the paper, and then putting a flat-iron over them, taking care that it is not so hot as to scorch the paper. Another method is to wet the grease spot with ether, and then put a bit of white blotting paper on each side of the paper, and apply the hot iron. If a stain remains after the grease has been expunged, dip a camel's hair brush into pure spirits of wine, and draw it over the edges of the spot.

**How to be Handsome.**

Most people would like to be handsome. Nobody denies the great power which any person may have who has a handsome face and attracts you by good looks, even before a word has been spoken. And we see all sorts of devices in men and women to improve their looks.

Now, all cannot have good features—they are as God made them—but almost any one can look well, especially with good health. It is hard to give rules in a very short space, but in brief these will do:—

Keep clean—wash freely. All the skin wants is to act freely, and it takes care of itself. Its thousands of air holes must not be closed.

Eat regularly and sleep enough—not too much. The stomach can no more work all the time, night and day, than a horse. It must have regular work and rest.

Good teeth are a help to good looks. Brush them with a soft brush, especially at night. Go to bed with cleansed teeth. Of course, to have white teeth it is necessary to let tobacco alone. All women know that. Washes for the teeth should be very simple. Acids may whiten the teeth, but they take off the enamel and injure them.

Sleep in a cool room, in pure air. No one can have a cleanly skin who breathes bad air. But more than all, in order to look well be pure in mind and body.—*American Farm Journal.*

**Take Care of the Eyes.**

Persons having a tendency to weakness of sight, or those usually experiencing fatigue of the eyes in reading or similar occupations requiring close vision, should carefully observe the following rules:—

1. Cease to use the eyes for the time being; and look away from the work, when the sight becomes in the least painful, blurred or indistinct. After perfect rest for a moment or longer, work may be resumed, to be discontinued as before, when the eyes feel again fatigued.

2. See that the light is sufficient, and that it falls properly upon your work. Never sit facing it. It is best that light should fall upon the work from above and behind. Failing this, it may fall from the side. Never use the eyes at twilight. Any artificial light for the evening is good if it is brilliant enough and steady. When artificial light is at all painful, it is safer to read or write only during the day.

3. Never read in the horse or steam cars. It requires too great an exertion of the accommodation power to keep the eyes fixed on the letters. Business men are in the habit of reading the evening paper on their way out of the city, and the morning papers on their way in. This dangerous practice is a somewhat frequent cause of weakness of sight. There are those who can follow it with impunity year after year, but there are more who cannot.

4. Never read when lying down, it is too fatiguing for the accommodative power. Many a case of weak sight has been traced to the pernicious habit of reading in bed after retiring for the night.

5. Do not read much during convalescence from illness. Before the muscular system generally has quite recovered its healthy tone, we ought not to expect the muscles of accommodation to bear the continuous use to which they are subjected in reading or writing. We cannot be sure that the delicate muscles of the eye are in a condition to be used until the muscles of the leg and arm have regained their strength and firmness.

6. The general health should be maintained by a good diet, sufficient sleep, air, exercise, amusement, and a proper restriction of the hours of hard work. One ought not to expect strong eyes in a body weakened by bad habits or an injudicious amount of labor. Bright gas-lights in crowded rooms, and the impurity of the air in such places, are especially to be avoided. Medical advice should be sought in regard to any nervous debility, disorder of the organs of digestion, or functional disturbances of a general nature, whether they appear to have a direct connection with the weakness of sight or not.

7. Take plenty of sleep. It is a sovereign balm for those who suffer from weak sight. Retire early and avoid the painful evening lights. Ten hours' sleep for delicate eyes is better than eight.—*Atlantic.*

**Why Women Should Read.**

Laying aside the thought of our own rest and comfort, let us look a little higher. For the children's sakes we must make the most of ourselves. Many an unselfish mother has said:—"Oh, I cannot take all this time, there are so many things to do for the children." She does not realize that she may do more for them in the end by cultivating herself than if she spends all her time on clothes and cooking. A generosity which makes the recipient weak or selfish is not a blessing but a curse. Have you not seen grown-up sons who snubbed their mother's opinion in the same breath with which they called her to bring their slippers? The meek little woman has "trotted around" to wait on them so long that they have come to think that that is all she is good for. Their sisters keep "Ma" in the background because she "hasn't a bit of style," and is "so uncultivated," forgetting that she has always worn shabby clothes that they might wear fine ones; that her hands have become horny with hard work that their might be kept soft and white for the piano; and that she has denied herself books and leisure that they might have both. And there are other children, too noble for such base ingratitude, who feel a keen, though secret sense of loss as they kiss the dear withered cheek, and think how much more of a "woman" mother might have been if she had not shut herself away from the culture and sweet companionship of books.

**A Nova Scotia Landscape.**

Professor Lawson referred in his lectures to the marked beauty and fertility of the *Stewiacke Inter-ale*, which he had seen for the first time in that morning's sun; to its broad expanse of rich grass land, as flat and smooth and green as the fields of Holland; stretching away for twenty-five or thirty miles and scarcely anywhere less than two miles in breadth, the large square fields, here outlined by giant elms, and there adorned by scattered trees, all stately and graceful, and on either side of this immense carpet of broad and verdant acres, we have a sheltering range of beautiful rounded hills, rich in undeveloped wealth that lies at the surface as a fertile soil, underlaid by plaster and lime, to supply the means of making it still more fertile, and these gently undulating hills are inviting the plough up and over the grassy slopes, for which the healthy white flocks are now preparing the way. The whole scene, he said, presented a picture of pastoral beauty, which reminded him more than anything else he had seen on this continent of some of the richest agriculturist districts of England. We want only a steam plough and a dotting of thoroughbred shorthorn Durhams and Devons and Ayrshires, over the meadows to make Stewiacke look very much like the Rothschild farms and other rich tracts in Buckinghamshire, where the fields feed twenty thousand cows, besides all other kinds of cattle, and annually send two thousand tons or more of beautiful butter into the London market, realizing, in the poorest year, from this product alone, a million and a half of

dollars. To render the fields of Colchester as productive as those of Buckinghamshire is a very simple problem to the scientific agriculturist. Three things are required—systematic culture; selection of suitable thoroughbred stock; economical, that is intelligent feeding.—*N. S. Journal of Agriculture.*

**Foliage Plants in Autumn.**

Sometimes, as during the present fall, our flower gardens are richer and more gorgeous in appearance than at any other time of the year. The present fall has been an exception, it is true, and frost has held off so wonderfully in many places, that even the tender leaves of caladiums and cannas are yet untouched, while some of the annuals are now in their greatest beauty. And even though the present autumn be an exceptional one, it is generally true that the autumn appearance of the flower garden may be made fully as attractive as at any other period of the whole year. After the heat of the summer the annuals appear in their beauty, while the gorgeous foliage plants—which are so easy of cultivation, and may be had in such variety—appear to better advantage than earlier in the season. And so, just at this time, while the lovers of the flower garden are setting bulbs for spring flowering, picking up the brush, and giving the plants their winter covering, we ask a moment's attention to the drummond phlox, asters, verbenas, stocks, dahlias, cannas, and the gorgeous foliage plants, coleus in great variety, achryanthes and centaurea, which have clothed the autumn flower garden and border with such singular beauty. And yet these plants are all common, and are grown with as much ease as a cabbage plant or a row of peas. The use of these plants keeps up the succession of bloom and beauty which comes in with the tulip and hyacinth, and is kept up all through the year by the roses, pæonias, lilies, carnations, dianthus and gladiolus—rounding off the year, even up to severe frosts, with a splendor which even June, with its verdure and bloom, can not surpass. Put down, then, in your garden memorandum book, this little item:—"Be sure, another season, to provide at least one bed of late flowering and foliage plants, which shall lengthen out the beauty of summer till frosts of autumn."

**CANNA, OR INDIAN SHOOT.**—For adornment of the flower-garden this magnificent genus is unparalleled. Its stately growth, combined with its rich and various-colored flowers, and most picturesque foliage, render it the most striking and effective of our ornamental plants, when intermixed in groups of other plants. The roots may be lifted after the first frost and kept warm in a cellar, and be planted out the ensuing summer.

**Growing Smilax in the House.**

The beautiful winter climber—the graceful queen of decorative vines—is adapted alike to the greenhouse and conservatory. This plant is a specialty with Boston florists, by all of whom it is extensively grown as a decorative vine. With very little care it can be grown successfully as a house plant. The seed should be sown in a box, or in pots, in the house; should be kept moist till the young plant appears. The seed being rather slow to germinate, you must not think it bad if it does not make its appearance in two weeks. The young plants should be potted off into three-inch pots as soon as they are three or four inches high. Once a year the bulbs should be allowed to dry off and rest; they will start into growth again in about six weeks. The vine does not require the full sun, but it will grow in a partially shaded situation. It can be trained on a small thread across the window or around pictures. It is a climbing vine, and will attach itself to a string in about the right condition to use for wreaths, etc., or when required for lighter work, the branches which become entangled can be separated.

**Protection for Birds.**

There is in Newcastle, England, a Society for the protection of birds, which now numbers 561 members, boys and girls. The members take a pledge to protect and be kind to all birds, as far as they can, to feed them in winter and not to disturb them during the building season. The societies of this kind in the North of England have 22,620 names on their rolls. Why not have such societies in Canada?

## Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES,—Vacation is over and school has begun after a long spell of jolly fun! I know, my dears, you have had a splendid holiday from the pleasant tone of the many letters I receive from you. No doubt you feel thoroughly invigorated and will be able to begin work with earnest, good-will. But do not over-evert yourselves at first. It is better to start easily and keep up the pace than make rapid progress for a while and then falter and grow weary before half-way. Now, a few words to those who would like to become our nephews and nieces. We invariably receive letters from little boys and girls who seem to wonder if they would be admitted as a niece or nephews without paying anything. We invite and receive all most cordially, (gratis of course.) You know the old saying is, "the more the merrier"—likewise with your uncle. As an honor, we publish the name of the one who answers the greatest number of puzzles correctly each month.

UNCLE TOM.

## PUZZLES.

76.—A A A A A H H H N N P P E T Z.

No name of nation or of place  
I by these letters mean;  
But if you do them rightly trace  
And put each letter in its place,  
A word may then be seen.  
To show you where these letters dwell,  
Read your Bible, for it will tell,  
And when you've searched the Scriptures  
round  
It only once can then be found.

MAGGIE BLAIR.

77.—I am composed of 11 letters, viz., 4 S's, 2 T's, 1 H, 1 E, 1 N, 1 A and 1 I. My whole means dullness.

FELIX GABOURIE.

78.—DOUBLE CROSS-WORD ENIGMA.

In shelf, but not in seat,  
In food, but not in meat;  
In slow, but not in fast,  
In model, but not in cast;  
In hovel, but not in hut,  
In almonds, but not in nut.  
Read this aright and you will find  
Two poets will come to mind.

A NEPHEW.

79.—METAGRAM.

I am a word with meanings many,  
To plunge, is just as good as any;  
With new head, I'm a piece of money,  
With other head, I'm "sweet as honey."  
Another still, I'm a projection,  
One more, I sever all connection;  
Another change, I'm the teeth to stick in,  
Another still, I plague your chicken;  
One more new head, and I'm to taste,  
One more, and I discharge with haste.

L. W. H.

80.—VERY EASY HIDDEN FURNITURE.

1. May got a tablet for her Christmas. 2. My father walks so fast! 3. Such air as we breathe in our school-room is hurtful. 4. My brother's tools are always out of place. 5. What! not going to the party to-night? 6. Vic! Ribbons are out of place on school-girls. 7. What spool-cotton is the best to use? 8. Boys, stop that racket! 9. Lily made skips going along to school every day.

C. L. J.

81.—CONTRACTIONS.

1. Curtail a color, and leave the forehead. 2. Curtail a joiner's tool, and leave a plot or draught. 3. Curtail a machine tool, and leave an article used in house-building. 4. Curtail a shrub, and leave warmth. 5. Curtail another shrub, and leave fog. 6. Curtail an ornament, and leave a fruit. 7. Curtail a badge of dignity or power, and leave a bird. 8. Curtail a thrust, and leave an organ of the human body. 9. Curtail a number, and leave a building for defense.

I. A.

82.—DROP-LETTER PUZZLE.

M-k-h-y-h-l-t-e-u-s-i-e.

Every other letter is omitted; the answer is a well known proverb.

J. M. &amp; F. M.

## 83—EASY BEHEADINGS.

1. Behead an indication of sleepiness, and leave an artificial shade. 2. Behead another indication of sleepiness, and leave an animal. 3. Behead need, and leave an insect. 4. Behead an article used in packing crockery, and leave a reckoning. 5. Behead an awkward bow, and leave a kind of cloth. 6. Behead a locality, and leave net-work. 7. Behead to loiter, and leave a dolt. 8. Behead sudden blows, and leave parts of a horse. 9. Behead to turn, and leave a peg. 10. Behead a stain, and leave a piece of land. 11. Behead a bough, and leave a farm in California. 12. Behead loose, and leave want.

M. G. A.

## 84—GEOGRAPHICAL DOUBLE ACROSTIC.

The initials name a large country of Asia, and the initials a country of Europe renowned for its climate. 1. A country of South America. 2. An ancient name for a narrow strait in south-eastern Europe. 3. A British possession in Asia. 4. A kingdom of northern Hindostan. 5. A North American mountain system.

J. E. C.

## 85.—GEOGRAPHICAL REBUS.



## Answers to August Puzzles.

No. 66.—Seen in the midnight cloud  
67.—Growing older. 68.—Spring. 69.—Firefly.  
70.—1. Finger, fringe, ring, gin, in. 2. Wasp, paws, asp, was.  
71.—Cleopatra. 72.—Merchant of Venice.  
73.—Columbus. 74.—Clam. 75.—1. Rain, bow. 2. Bees wax.

## ANSWERS TO PRIZE PUZZLES.

## PECULIAR PUZZLE.

M  
E  
M  
IMMENSE  
N  
T  
O

"STEM" is the word forming part of a flower.

## PECULIAR DIAMOND.

S  
SHE  
SPENT  
SHEATH  
ENTRE  
THE  
E

## A VERY LITTLE STORY IN A PUZZLE.

R  
E  
S  
ASSISTS  
S  
T  
S

## Names of Those Who Sent Correct Answers to August Puzzles.

Lillian Stewart, Gertie Heek, Felix Gabourie, Maggie Blair, Mary Bailey, John Scott, Amelia Chambers, E. Stephens, R. Wilde, Nora Thompson, Mabel Eastman, Jas. Eryne, Emma V. Colson, Jennie Hamilton, Carrie A. Tupper, Katie Pratt, Mary E. Warren, Jas. V. Pierson, Fannie Grier, L. S. Brown, Anna E. Matthewson, Grace Raymond, Charlie Brooks, Maggie Gemmil, John Sharpe, Joseph Smith, Fred. Clark, C. B. Carr, Nessie Cameron, Eliza Cook, Willie Sheffield, John D. Hill, Alice Dunn, Matthew Doyle, Victor M. Sanburn, Maxwell Turner, Mary F. Johnson, Wm. J. Cooper, Sarah Duffield.

We are happy to congratulate George Mitchell upon his success in answering the greatest number of puzzles.

He that loves a rosy cheek  
Or a coral lip admires,  
Or from star-like eyes deth seek  
Fuel to maintain its fires;  
As old Time make these decay,  
So his flames must waste away.

But a smooth and steadfast mind,  
Gentle thoughts and calm desires,  
Hearts with equal love combined,  
Kindle never-dying fires;  
Where these are not, I despise  
Lovely cheeks, or lips, or eyes.

## Tim's Kit.

It surprised the shiners and newsboys around the postoffice the other day so see "Limpy Tim" come among them in a quiet way, and to hear him say:—

"Boys, I want to sell my kit. Here's two brushes, a hull box of blacking, a good stout box, and the outfit goes for two shillin's!"

"Goin' away, Tim?" queried one.

"Not 'zactly, boys, but I want a quarter the awfulest kind just now."

"Goin' on a 'scursion?" asked another.

"Not to-day, but I must have a quarter," he answered.

One of the lads passed over the change and took the kit, and Tim walked straight to the counting-room of a daily paper, put down his money, and said:—

"I guess I kin write it if you'll give me a pencil."

With slow moving fingers he wrote a death notice. It went into the paper almost as he wrote it, but you might not have seen it. He wrote:—

"Died—Litul Ted—of scarlet fever; aiged three yeress. Funeral to-morrer, gon up to Hevin; left won bruther."

"Was it your brother?" asked the cashier.

Tim tried to brace up, but he couldn't. The big tears came up, his chin quivered, and he pointed to the notice on the counter and gasped:—

"I—I had to sell my kit to do it, b—but he had his arm aroun' my neck when he d—died!"

He hurried away home, but the news went to the boys, and they gathered in a group and talked. Tim had not been home an hour before a bare-footed boy left the kit on the doorstep, and in the box was a bouquet of flowers, which had been purchased in the market by pennies contributed by the crowd of ragged but big-hearted urchins. Did God ever make a heart which would not respond if the right chord was touched?—*Detroit Free Press.*

## HUMOROUS.

OBBLIGING.—Mistress: "Mary, has that parcel of stationery arrived yet from the store?" Parlor-maid: "No, ma'am; but I can lend you a few sheets of my own note paper, if you don't mind using my monygram!"

An old bachelor said he once fell in love with a young lady, but abandoned all idea of marrying her when he found that she and all her family were opposed to it.

An old darkey was endeavoring to explain his unfortunate condition. "You see," remarked Sambo, "it was in this way as far as I can remember: Fust my fadder died, den my mudder married agin; and den my mudder died, and den my fadder married agin; and somehow I doesn't seem to have no parents at all, nor no home, no nuffin."

At a funeral in Ireland the clergyman had not been informed of the sex of the deceased. He accordingly leaned over to the sexton, and said: "Shall I say 'brother' or 'sister' here departed?" "It's neither, sir," whispered the man; "shure it was only an acquaintance!"

The clergy of Rochester are trying to bring about a reform in the matter of extravagance at funerals, but they will not succeed. People who haven't a pound of flour left in the house must have twenty-four hacks at a funeral to hide their poverty.

Fashionable Mother: "Maria, I'm almost discouraged; how many times have I told you not to say tater, but pertater?"

An excited politician to his opponent: "Did you call me a fool?" "No, sir; I never twit on facts."

Domestic Darwinism.—Natural Selection: marrying for love. Struggle for existence: marrying without money.

Yung man, don't be afrade to blow your own horn, but don't do it in front of the proceeshun; go behind and do it.

PAUCA VERBA.—Robinson (after a long whist-bout at the club): "It's awfully late, Brown. What will you say to your wife?" Brown (in a whisper): "Oh, I shan't say much, you know—'Good morning, dear,' or something o' that sort. She'll say the rest!"

Shortly after the war with Great Britain, an aristocratic English gentleman built a residence in the vicinity of Fort George on the Niagara frontier, and, in accordance with the Old Country idea of exclusiveness he inclosed his grounds with a high tight fence. There was a good understanding between the American officers at Fort Niagara and the British at Fort George and the men were permitted occasionally to visit back and forth. Among the American soldiers was a green chap who stuttered terribly, was very fond of hunting, and who was always getting into some sort of mischief. One day this chap took the small boat that lay moored at the foot of the wall of the fort, and crossed over to the Canadian shore for a hunt. He wandered over several miles in the rear of Fort George without meeting any game, and on his return, seeing a crow on a tree in the inclosure of the aristocratic Englishman, he scaled the high fence, fired, and brought down his game. Colonel B— witnessed the transaction, and advanced while the soldier was reloading. He was very angry, but seeing the Yankee standing coolly with a loaded gun in his hand, gulped down his passion for a moment, and merely asked him if he killed the crow.

The soldier replied that he did. "I am sorry," said the colonel, "for he was a pet. By the-by, this is a very pretty gun. Will you be so kind as to let me look at it?"

The soldier complied with the request. The Englishman took the gun, stepped back a few paces, took deliberate aim, and then broke forth in a tirade of abuse, concluding with an order to stoop down and take a bite of the crow, or he would blow his brains out. The soldier explained, apologized, entreated. It was no use. The colonel kept his finger on the trigger, and he sternly repeated the command. There was "shoot" in the Englishman's eye; there was no help for it; and the stuttering soldier stooped and took a bite of the crow; but swallow it he could not. Up came his breakfast, and it really appeared as if he would throw up his toenails. The Englishman gloated on the misery of his victim, and smiled complacently at every additional heave. After the man had wiped his eyes, the colonel handed him his gun, with this remark: "Now you rascal, that will teach you how to peach on a gentleman's inclosure."

The Yankee soldier took his gun, and the colonel might have seen the devil in his eye if he had looked close. Stepping back he took deliberate aim at the heart of his host, and ordered him instantly to finish the crow. Angry expostulations were useless. There was "shoot" in the American's eye, as there had been in the Englishman's. There was no help at hand, and he took a bite of the crow. One bite was enough, and while the Englishman was in an agony of sickness Jonathan escaped to the American shore.

The next morning early the commandant at Fort Niagara was sitting in his quarters, when the colonel was announced.

"Sir," said the colonel, "I come to demand the punishment of one of your men, who yesterday entered my premises and committed a great outrage."

"We have here three hundred men, and it would be difficult for me to know who it is you mean," said the American officer.

The Englishman described him as a long, dangling, stuttering, stoop-shouldered devil.

"Ah! I know who you mean," said the officer. "He is always getting into mischief. Orderly call Tom."

In a moment Tom entered, and stood all attention and straight as his natural built would allow, while not a trace of emotion was visible in his countenance.

"Tom," said the officer, "do you know this gentleman?"

"Ye-ye-yes, Sir."

"Where did you ever see him before?"

"I—I—I," said Tom, stuttering awfully, but

regaining the grave expression natural to his face—*"I di-di-dined with him yesterday."*

Tom was not punished.—*Cor. Harpers' Monthly.*

**How to Take Life.**

Take life like a man, says the Spurgeon. Take it just as though it was—as it is—an earnest, vital, essential affair. Take it just as though you were born to the task of performing a merry part in it—as though the world had waited your coming. Take it as though it were a grand opportunity to achieve, to carry forward great and good schemes, to hold and to cheer a suffering, weary, it may be a heart-broken brother. The fact is, life is undervalued by a great majority of mankind. It is not made half as much of as should be the case. Where is the man or woman who accomplishes one tithe of what might be done. Who cannot look back on opportunities lost, plans unachieved, thoughts crushed, and all caused from lack of necessary and possible effort! If we knew better how to take and make the most of life, it would be greater than it is. Now and then a man stands aside from the crowd, labors earnestly, steadfastly, confidently, and straightway becomes famous for wisdom, intellect, skill, greatness of some sort. The world wonders, admires, idolizes; and yet it only illustrates what each may do if he takes hold of life with a purpose. If a man but say he will, and follow it up, there is nothing in reason he may not expect to accomplish.

YOUNG MAIDEN. "Why Tom, what makes you carry an Umbrella such a lovely day?"

CROSS OLD BACHELOR (who has evidently loved and been deceived). Because the weather is so much like your Sex that it can't be depended on for two moments together."

ciplered men have been elected to power. They have too often neglected the public interests to build up their own fortunes.

We give you the accompanying cut. If the faces do not represent a true likeness of some of your friends, you may depend the expression shows the feelings of some of them. Perhaps some of you may find that one or the other exactly fits your own case.

**Life is Sweet.**

Life with all its joys and sorrows, its smiles and tears, its mingled cup of bitter and sweet, sunshine and storm, of prosperity and adversity, is the common lot of mortals, yet who but feels some happiness now and then, even in such a world as this? Some tell us that this is but a gloomy vale! that nothing but pricking thorns, and poisonous weeds, and dark and dismal clouds are seen over our mortal sky. Sometimes indeed the tempest darkens the heaven above, and the icy breath of winter robs the earth of its rich beauties and greenness, but the sun soon breaks through the clouds and the warm breath of gentle spring restores the wonted greenness of the earth. So it is after sorrow, and tears, and bitter grief: the dark clouds are quickly dispelled by the sunshine of happiness. In sickness how sweet to feel returning health, and how dearly prized the bounties of providence after having for a season known want. There are but few whose experience has not shown them that there is more real happiness and joy than sorrow and pain. Yes it is very sweet to live in a world of so much beauty. No wonder that the heart is sometimes filled to overflowing with pure joy, when the eye beholds the rich glory of earth and sky. It is sweet to feel the charms of nature. It is sweet to enjoy the pleasures of social intercourse, but to the real of the covenant it is sweeter far to die and put on immortality and go to a world where the skies are always cloudless, where sorrow and pain are unknown.

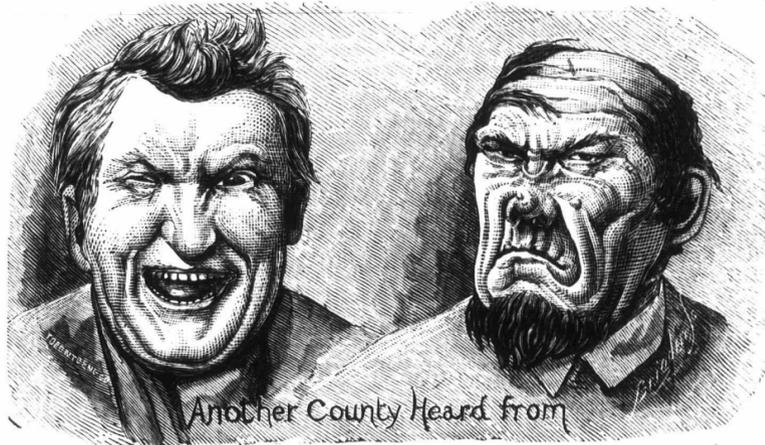
**Marriage in Lapland**

It is death in Lapland to marry a maid without the consent of her parents or friends. When a young man has formed an attachment to a female, the fashion is to appoint their friends to meet to behold the two young parties run a race together. The maid is allowed, in starting, the advantage of

a third part of the race, so that it is impossible, except willing of herself, that she should be overtaken. If the maid over-run her suitor the matter is ended; he must never have her, it being penal for the man to renew the notion of marriage. But if the virgin has an affection for him, though at first she runs hard to try the truth of his love, she will (without Atalanta's golden balls to retard her speed) pretend some casualty, and make a voluntary halt before she cometh to the mark or end of the race. Thus none are compelled to marry against their own wills; and this is the cause that in this poor country the married people are richer in their own contentment than in other lands, where so many forced matches make feigned love, and cause real unhappiness.

Some active women, who pride themselves on their housekeeping, seem to forget that the object of keeping house is that human beings may be accommodated in it. Their sole idea seems to be this, that the object of keeping a house is that the house may be kept in a certain form and order, and to the performance of the form and order they sacrifice the comfort the house was established to secure. Such active women are pests to society, because they want sense to direct and control their energies.

BUSINESS MOTTOES.—Act with dispatch and correctness. Talk business and be brief. Three points to make in business are—largest profits with the least cost of labor in the shortest length of time.



**The Elections.**

During the present month many of you will be excited about the elections. If we could record a vote that would send half of the members home that you are obliged to elect, we would record it quickly, as we consider our affairs could be managed quite as well or better with half the number of members.

Should any of you be doubting which way to vote, we would advise:

- 1—Vote for the man who has the most honor and integrity.
- 2—A man who has real unencumbered property in our country.
- 3—Prefer a plain substantial farmer, if he has only good common sense and honor. Do not vote for any man merely because he belongs to a particular party. You are apt to be led too often by a flowing speech or sharp oratory; a few quiet remarks are often of more value.

There is danger and loss in electing men to responsible positions and to power who have no stake in the country. They must make and the country must pay them. The high position that England now holds is in a great measure due to her independent members of Parliament; they cannot be bought. The reason that such depression prevails on this continent is because unprin-

### Purty Happy, After All.

A druggist had put up a prescription of some kind or other about four times a day for a certain small boy, besides filling orders for a large variety of patent medicines and porous plasters. The sales were all cash, but the druggist's curiosity was at length aroused, and he said to the lad:

"Got sickness in the family?"

"Kinder," was the reply.

"Your father?"

"Yes—all but me. Ma is using the plasters for a lame side and taking the tonic for a rash that breaks out on her elbows. Pa takes the troches for tickling in the throat, and uses the arnica on his shin. Louisa uses that catarrh snuff and the cough medicine. Bill wants the brandy for a sprained ankle, and the squills are for the baby. That's all but grandma, and this prescription is to relieve the pain in her chest and make her sleep harder."

"Rather an unfortunate family," remarked the druggist.

"Well, kinder, but pa says its cheaper than going to Hemlock Lake, and so we plaster up and swallow down and feel pretty happy after all.—*Detroit Free Press.*

### "Don't Learn to Smoke."

"Well, boys, it's to be a lecture to night instead of a story?"

"A lecture?—not much! What have we been doing?"

"Nothing bad, that I know of; but it's to be a lecture because of something I don't want you to do."

"I shan't hark."

"Oh, yes you will—and I'll tell you why: Because I'm just going to play lecture, and turn things around. We old folks always have to pay for going to lectures. Now, I'm going to pay you for hearing one. What do you say to this: You shall be the audience, and instead of having to buy a ticket to come in I'll pay you each twenty-five cents, in silver to listen to me, if you'll promise to try and remember what I say for—well, until you are twenty years old."

"No fooling?"

"Honor bright—here's the money."

"All right—the 'awjence' is ready,"—and the two young urchins straightened back in their chairs, folded their arms, and looked as chuck-full of fun as they were of supper.

"The audience will please preserve order. No peanut-chucking or monkey-shines will be permitted."

"—A-hem! Ladies and gentlemen, my subject this evening is tobacco."

Nobody smokes tobacco until they "learn"—and dreadfully sick it makes them then—though everybody eats and drinks without having to learn. And this is against smoking to begin with. If the Lord had known what use the weed would be put to, I don't believe he ever would have made it: He would have let the tobacco-worm starve to death first.

But, fellow-citizens,—my young friends I should say—I wish to give you some reason why you should let tobacco alone.

In the first place it costs too much to smoke. Unless you used poor cigars, or a nasty old pipe and cheap tobacco—as I know you wouldn't—two cigars a day for a year, at ten cents apiece, would cost you \$73. By gettin a little better cigars, and smoking as many of them as lots of young chaps I see, you would burn up one hundred and fifty dollars in a year!

Think of what that would buy. A pony, to start with, with saddle and bridle complete; more than a hundred books; a summer vacation for yourself and all the concert and opera tickets your mother would want for a whole season. In ten years your cigars would cost you enough to keep you two years in college, and give you a trip across the ocean. In twenty years it would buy you a beautiful home.

Well, what does money cost, young gentlemen? "Teasin'."

Just so—but in about ten years more you will find that teasing won't bring it. Money cost labor—work. A man who just works with his hands alone, earns now a little over a dollar a day. It takes ten hours' hard work, in the field, or on the railroad, or in the streets, to earn money enough to buy ten such cigars as your cousin John smokes,—and if he had to earn the money himself he wouldn't be apt to buy many of them!

What makes people smoke? That is the next question. Well, a great many foolish fellows learn when they are young, because they think it is manly, or smart, or "big," or something of that sort. A good many more smoke because other people do. And after they've smoked awhile, they give all sorts of reasons. Some say it "helps their digestion," or "settles their dinner;" some say it rests them and makes them sleepy; some say it keeps 'em awake; and most all say it is "good for their nerves."

I say, young gentlemen, that these reasons are all humbug—h-u-m-b-u-g—only that and nothing more. The real reason, with most of 'em, is because they like to smoke,—and if they can afford it, and it don't hurt 'em, that is the best reason I know of.

Digestion, of course you know, is the process by which the stomach changes food into blood and flesh, bone and muscle. Good digestion is at the bottom of good health. Remember that, and never abuse your stomachs. Now, if tobacco was needful to good digestion, God would most likely have made it grow where He started men, wouldn't He? Well, He didn't. The world got along without tobacco for ever so many thousand years—until after Columbus discovered America; for it is a native of this country. And they had a good deal better stomachs in those days than we have now—to say nothing of the bitter smells!

But, my hearers, I will give you another reason for saying that tobacco isn't necessary to good digestion.

Look at the ladies. See how fresh is their color!—how round and plump and handsome they are!—how well fed and nourished they seem! That couldn't be so unless their digestion was good. And yet none of them smoke! There are thin ones, of course, but take them together and the women look a good deal better than the men do—especially the smokers. Then the men that don't smoke have just as good stomachs, and a great deal more quiet nerves, than the men that do; and their mouths are cleaner to kiss; their clothes and breaths smell sweeter; and they don't have to be shut out of ladies' parlors, and drawing-room cars, and the nicest cabins on the boats, and lots of other places where ladies and gentlemen meet together.

And this brings me, my hearers, to the last reason I shall mention:—Tobacco-smoking will make men selfish, or careless of other peoples comfort and pleasure, if they aren't very careful. You have seen the signs up in the street cars, and station-rooms and lots of other places:—"No smoking"—"Smoking positively forbidden." Think what a habit is that makes it necessary to have such rules to keep men decent and polite! If the companies would let them, the majority of smokers would puff away in the cars, or hotel parlors, or public waiting-rooms—and I dare even say in lectures and concerts, if it wasn't forbidden. The habit is so strong, and they love it so, that they don't stop to think of anything but their own comfort—unless they are very great gentlemen indeed.

And this makes me think of another point:—A cigar is stronger than a man who loves it. Isn't that strange?—to be made a slave of by a little twisted bit of tobacco! He can't stop smoking if he wants to—and if he happens to be off somewhere without his tobacco he is as uneasy as a fish out of water. He will walk miles to beg or buy a cigar. Is that the kind of a habit to learn because other people have it?

I will now answer any question which the audience may wish to ask.

"Is it wicked to smoke?"

No, my lad—any more than all waste is wicked, or any habit that hurts the body or mind.

"Does it hurt men?"

The real question is, William, whether it does them any good—and I say it doesn't. But it does hurt many people, especially if they smoke a great deal. Any doctor who is stronger than his cigar will tell you that it causes trembling of the hands, dizziness, heart trouble, loss of flesh, weak eyes, sore mouth, and other disorders in many people.

The lecture is now closed. You have been a very well-behaved audience. And if you will remember all I have said, and read and think about it yourselves as you grow older, I don't believe you will ever learn to smoke. So you will save money make your mother glad—and your wives, when you get them!—keep from offending people who dislike smoke, and not have a bad habit get the upper-hand of you.

A correspondent notes the following description of what she calls the "Island of Juan Fernandez," near Paris.

One of the most attractive places for out-door amusements, just outside of Paris, is a spot fitted out to be a counterpart of the Island of Juan Fernandez, described by Daniel de Foe in his story of Robinson Crusoe.

After leaving the depot you enter an omnibus on which are painted the words "Robinson Crusoe." This leaves you at an arch-way bearing the curious inscription:—"A mimic island of Juan Fernandez, the abode of Robinson Crusoe, dear to the heart of childhood, and a reminder of our days of innocence." You pass under this with high hope, and are not disappointed.

Inside, you find a kind of gypsy camp. Groups of open "summer-houses," built of bark, unhewn wood, and moss, are clustered here and there. Some stand on the earth, others are in grottoes or by shady rocks, and some are even among the branches of the great trees. All these houses are meant for resting-places while you are being served with such delicacies as pleasure-seekers from Paris are wont to require. In each of these huts, which are in the trees, stands a waiter who draws up the luncheon, or creams, or ices, in a kind of basket, which has been filled by another waiter below. All is done deftly and silently, and you are as little disturbed as was Elijah by the ravens who waited on him.

The trees in which these houses are built are large old forest-trees, each strong enough in the fork to hold safely the foundation of a small cottage; and the winding stairs by which you get up into the tree are hidden by a leafy drapery of ivy, which covers the trunk also, and hangs in fluttering festoons from limb to limb.

From one of these comfortable perches you look down upon a lovely scene of foliage, flowers, greensward, gay costumes and frolicking children. The view is wide, and has many features that would be strange to dear old "Robinson Crusoe." His cabin is multiplied into a hamlet, and his hermit life is gone. But you still recognize the place as a modernized portrait of the island of De Foe's wonderful book. And, as if to furnish you with a fresh piece of evidence, yonder appears Robinson Crusoe himself, in his coat of skins, and bearing his musket and huge umbrella.

Instead of Man Friday, Will Atkins, and the rest, you see donkeys carrying laughing children and led by queer-looking old women. And you have a little sigh when you think:—"How few of these French boys and girls really know old Crusoe and his adventures!" To them this charming place has nothing whatever to do with running away to sea, shipwrecks, cannibals, mutinies, and such things. It is nothing but a new kind of pleasure-ground to them."

However, everybody feels at home here, and so everybody is happy; for, after all, looking for happiness is much like the old woman's search for her spectacles, which all the time are just above her nose.

O dear delightful island, how glad we were to chance upon you right here in gay, care-free Paris! And what an enchanted day we spent amid your thousand delights and thronging memories!

### Purify Your Premises.

The warm weather is here, and it behooves every citizen to cleanse his premises of all offensive matter in order that all may become pure and healthy. There is no doubt at all that a great deal of sickness visiting families proceeds from filthy cellars, sinks, yards, outhouses, styes, &c. These things are neglected by many, as are other duties from pure thoughtlessness, while others never dream of paying any attention to them. There are several remedies for this most unhealthy condition of things that can be fully applied. The first is to put one pint of the liquid of chloride of zinc in one bucketful of water, and one pound of chloride of lime in another bucketful of water, add and sprinkle over decayed vegetable matter. For this purpose nothing surpasses it; indeed, it is a perfect deodorizer. The second is to take four pounds of sulphate of iron or copperas and dissolve it in a bucketful of water. This will in most cases prove a sure remedy in destroying all offensive odors. The third is to take simple chloride of lime and sprinkle in damp-cellars, over heaps of filth, dirty yards, etc. All these can be had at the druggist's, and as prices go are not dear.

The labor of cleansing one's premises by either one of these remedies is trifling, and the expense

is not worth mentioning. If it were ten times greater, both the labor and expense should be willingly incurred. But the best procedure of all is to cleanse your cellars, yards, out houses, styes, etc., systematically. Especially should all the cellars, sinks, and everything about the house be kept free of all offensiveness. Cellars should be thoroughly cleaned out twice a year, and white-washed once. Sinks about kitchens should be particularly attended to. Privies can be rendered completely inoffensive by the application of fresh earth from time to time.—*Germantown Telegraph.*

The Illustrated Fall Catalogue of Messrs. Elwanger and Barry (the extensive nurserymen of Rochester, New York), is received. It deserves the attention of intending purchasers.

Mr. S. Evison, of Dallas, Texas, had on board S. S. Wyoming, the vessel in which we returned from England, eleven Lincoln rams and two South-down rams. He purchased them from the Duke of Portland, of Welbeck Castle, Leicestershire. For the two best he paid £27 each, the lot averaging £25 each. He said he dare not reckon what they would cost him by the time he got home; the cost from Liverpool to New York was £4 per head, besides feed and attendance. There is a chance of loss, besides sundry expenses. One man on board said he had to throw two horses overboard on his way to Liverpool. The sheep were fine animals and arrived safely in New York, but they had a long journey yet to encounter. Mr. Evison says his next importation will be from Canada or through Canada.

Coming Exhibitions.

- The Provincial, at Toronto, 23rd to 28th Sept.
The Great Central, at Hamilton, on 1st, 2nd, 3rd and 4th October.
The Western, at London, on 1st, 2nd, 3rd and 4th October.
The Nova Scotia Provincial Exhibition, at Truro, on the 1st October.
The Manitoba Provincial, at Winnipeg, on the 9th and 10th October.
The Central Exhibition, at Guelph, Ont., on 17th, 18th, 19th, and 20th Sept.
The Ingersoll Cheese Fair, Monday, Tuesday and Wednesday, September 16th, 17th and 18th.
The Midland Central Fair, Kingston, has been postponed until the 1st, 2nd and 3rd of October.

UNITED STATES.

The Michigan State Agricultural Society show at Detroit, on 11th to 20th Sept.
The New York State Agricultural Society show, at Elmira, 9th to 13th Sept.
The Maine State Fair, at Portland, 17th to 20th Sept.
The Vermont State Fair, at St. Albans, on 10th to 12th Sept.
The Ohio State Fair, at Columbus, 9th to 13th Sept.

THE CHAMPION REAPER AND MOWER Co.—Mr. Dillon, the London agent of this Company, informs us that he sold in this vicinity \$16,000 worth more of the Oshawa machines than he could be supplied with. As it was, he supplied between 400 and 500, and this in a locality surrounded by implement manufactories. We hope Mr. Glen, of Oshawa, will be able to increase the size of his factory, although it now stands second to none in size in this Dominion.

Mr. Samuel Grigg, of this city, is now in England, his mission being to form a direct connection with English buyers of horses, so that horses may be shipped by the managers of the London Horse Mart Co. direct from this city. This we look upon as another step in the right direction, and which should enable our farmers to obtain the full value of their horses.

OFFICE RECEIPTS.—The American Dryer Company, of Chambersburg, Pa., will receive our thanks for the numerous packages of dried fruit and vegetables sent to our office. We never have yet seen any cleaner or better preserved fruits and vegetables. Such perfection in the way of preparing our produce for market must bring more money into the pockets of fruit-growers. Such samples can be kept in a good state, in our climate, for any length of time.

20 Chromo Cards, (perfect beauties) with name, 10c. Outfit, 10c. Turner Card Co., Ashland, Mass. di-1

The usual liberal list of prizes offered by the Provincial Exhibition, of Ontario, the Western Fair and the Great Central at Hamilton, deserves the attention of exhibitors. See advertisements.

HEARING RESTORED.—Great invention. Book free. G. J. Wood, Madison, Ind. di-1

Commercial.

FARMERS' ADVOCATE OFFICE, } London, Sept. 2, 1878. }

Since writing our last article we have had a month of most favorable weather, both for the winding up of the harvest, and also for the still growing crops. In some sections the harvest was well through by the middle of last month.

WHEAT.—Up to the present the movement has been, in some sections, nothing; in others, light. From the various sources of information at our command we find that the sample and yield of winter wheat will be equal to former reports. It is now generally admitted that the crop of wheat in America has been over-estimated, and prices are keeping steady; but there is no fear of any scarcity—no danger of a dear loaf. If we have not the quality there is the quantity, which will have to find its way to market at some price. The export and shipments of wheat from Michigan, via Detroit and Toledo, have been something enormous for the time of year. This State appears to have an enormous crop of very fine wheat, quite equal in quality and yield to last season, and they are very free sellers. The shipments from Detroit have been larger since the commencement of the movement of new up to the present, than they were at the close of navigation last year. This heavy movement is chiefly on continental account, France is a large buyer this season. As to the future of prices, it is very difficult to form an opinion. If a farmer can sell his wheat early at a fair price, or even what he may think a low price, by so doing he thereby saves interest, saves hazard, saves waste, and he will make money by selling rather than holding.

SPRING WHEAT.—Will be a light crop. PEAS.—Are a short crop, both in acreage and yield. We do not think they are more than half a crop.

BARLEY.—Is also a short crop. It was too quickly ripened during the hot spell, and in addition to the lack of substance which this implies, its color is to a great extent spoiled by the heavy rains. Stocks of old are entirely in the hands of speculators, and not at present offered. The U. S. will want our entire crop this season. Great Britain was a purchaser last year to a large extent but this season's quality will not suit their fastidious distillers.

OATS.—We think on the whole are a light crop. POTATOES AND APPLES will be a light crop.

INDIAN CORN.—On the lake shore and western counties where grown looks well and bids fair to be an abundant crop.

In provisions we cannot do better than quote the remarks on these goods in a late number of the Montreal Gazette.

DAIRY PRODUCTS.—Last season's disagreeable though possibly wholesome experience, when a very considerable proportion of our Western butter had to be sold at gross prices of 5c and 6c is still fresh in the memory of dealers. The only demand that at present exists is for choice quality for city trade, though shippers might be prevailed upon to pay about 10c if the quality suited. Holders remain obdurate, and the general impression of the average country store-keeper regarding this article seems to be that England could not get on without drawing supplies from Canada, and that there is some fiendish trickery among commission men and buyers to cry down both the

quality and price of their goods. What will become of our butter crop is a conundrum not easily answered at present. Cheese—Owing to the favorable weather, frequent rains, &c., the make of that article has been enormous, far exceeding any other season in the history of the trade. Factorymen have faced the music and weekly sold at market rates, and thus managed to keep their shelves clear. Western Canada has won a reputation in this article of which all parties engaged may well be proud.

LONDON, ENG., MARKETS.

London, Eng., Aug. 30. Harvest operations are being delayed by rain. Floating cargoes of wheat at the opening a turn dearer; corn a turn dearer. Mark Lane—Wheat at the opening a turn dearer. Good cargoes Californian wheat off the coast, per qr. of 500 lbs., 51s; red winter, per 480 lbs., 46s 6d; No 2 Chicago spring wheat, average quality, per 480 lbs., 42s; mixed American corn, per 480 lbs., 24s 6d.

LONDON, ONT., MARKETS.

London, Ont., Sept. 2, 1878. Dehl wheat per 100 lbs., \$1.60 to \$1.65; Treadwell, \$1.60 to \$1.62; red, \$1.50 to \$1.53; spring, \$1.25 to \$1.50; barley, \$1 to \$1.25; peas, 80c to 90c; oats, 9c to \$1; corn, 85c to 95c; wool, per lb., 24c to 25c; roll butter, per lb., 20c to 23c; tub butter, 14c to 17c; potatoes, per bag, 80c to \$1; turnips, per bush., 25c; carrots, 25c to 30c; onions, 75c to \$1; hay, per ton, \$8 to \$10; straw, per load, \$2 to \$4.50; cordwood, \$3.50 to \$4; apples, per bush., 40c to 70c; beef, by the qr., \$5 to \$7 per 100 lbs.; lamb, per lb., 6c to 8c; mutton, 6c to 7c; fall wheat flour, per 100 lbs., \$3; mixed, \$3 to \$2.75; spring, \$2.75 to \$2.50; corn, \$2.75; oatmeal, \$3; bran, 50c to 60c.

MONTREAL MARKETS.

Montreal, Aug. 30, 1878. Flour—Superior, \$4.80 to \$5; extra, \$4.75 to \$4.77; fancy, \$4.70; spring extra, \$4.75; superfine, \$4.40 to \$4.50; strong bakers', \$5 to \$5.25; fine, \$3.35 to \$3.50.

TORONTO MARKETS.

Barley, per bush., 60c to 80c; spring wheat, 90c to \$1; red winter, 90c to \$1.02; Treadwell, 90c to \$1.02; Dehl, 90c to \$1.04; oats, 30c to 34c; peas, 60c; wool, 23c to 24c.

NEW YORK MARKETS.

Flour heavy; super. State and Western, \$3.30 to \$4; common to choice extra State, \$4.05 to \$4.30; Western, \$4.05 to \$4.30; rye flour steady, \$2.70 to \$3.30; wheat, 4c to 1c better; No. 2 spring wheat, \$1.06; rye quiet and firm; corn, 47c to 49c; barley nominal; oats, 25c to 37c; pork, \$10.15 to \$10.20; cheese, 3c to 8c.

New Advertisements.



FIRST PRIZE

At Six Provincial Exhibitions throughout Canada: At Great Central Fair, Guelph; at Midland Co. ex. Fair, Kingston; and at 4 Local Fairs since 1874. The simplest, easiest operated, and most perfect Reaper in the World. No part can possibly get out of order or bother a farmer in the field. 100,000 oil-tempered Springs Steel Teeth are in use in 2,000 of these Reapers, and LESS THAN FIFTY TEETH were required to supply breakages during 1874. MADE ONLY BY C. M. COSSITT & CO., Brockville, Ont. ALSO MANUFACTURERS FOR 18 YEARS OF BUCKEYE MOWERS AND SELF-RAKING REAPERS, Threshing and Shingle Machines. Send for Circulars. Correspondence solicited from Agents and Wholesale Traders, in any part of the world. D.S.P.

BLACK HORSE HOTEL.

Corner George and Toronto Streets, TORONTO, ONT., JOHN HOLDERNESS, Prop'r.

The largest stables in Canada. Accommodation for 200 horses. Also, Breeder of Pure Berkshire Pigs. Correspondence solicited. DF-12

## Shorthorns Sale

6 SHORTHORN BULLS AND BULL CALVES  
some of them fit for the Show-Ring.  
(ALSO SOME FEMALES.)

They are of the Princess tribe—the oldest and purest among Shorthorns, which is also acknowledged to be the Best Milking Tribe, and when bred to common cows produce heavy steers.

PRICES LOW. TERMS EASY.  
Apply to

JOHN B. TAYLOR,  
London P. O.

Globe Lightning Rod Company,  
London, Ontario.

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Since buildings cannot be protected in any other way against lightning except by Good Conductors or Rods, and since the business of erecting lightning rods has been heretofore carried on by a class of wandering pedlars, known as "Lightning Rod Men," whose nefarious practices throughout the country have brought this laudable industry almost into disgrace, and well nigh shaken the confidence of the public in the utility of lightning rods, this company has been incorporated with a large capital, and established works at the city of London, to manufacture and erect lightning rods in a skilful and workmanlike manner.

The rods of this Company are made from pure copper, which has been proven by actual experiment to be the best conductor of lightning.

The office of a lightning rod is not to attract lightning, but to conduct it safely into the earth, as an eave trough conducts water from the roof of a building.

Every rod is erected under the supervision of experienced mechanics, and a guarantee given to each purchaser, that the rods will protect buildings against destruction by lightning; failing to do so, the money will be refunded with interest thereon, at any time within ten years.

The works of the Company being permanently located, and the officers and stockholders being men of well known integrity and business ability, are guarantees to the public that all orders entrusted to the company will be faithfully and satisfactorily executed, and that the conductors will fulfil the purposes for which they are constructed.

Full opportunity is now afforded the people to protect their homes against the ravages of lightning, and rest firmly assured that no swindling will occur.

Samples of rods can be seen at the Company's City Office, 424 Richmond St., or at the Works, King St., London, Ont.

This Company pays special attention to erecting Conductors on School Houses, Churches, Halls and other Public Buildings.

Orders solicited.

T. C. HEWITT,  
Manager.

## Bishop Strachan School FOR YOUNG LADIES.

MICHELMAS TERM COMMENCES SEPT. 4

President, Lord Bishop of Toronto.

THIS SCHOOL OFFERS A LIBERAL EDUCATION at a rate sufficient only to cover the necessary expenditure, the best teaching being secured in every department.

The Scholastic year is divided into four terms of ten week each. Trinity term begins April 22.

Fees per term, \$6.00 to \$18.00. Additional for boarders \$45.00.

Apply for admission or information to  
MISS GRIER, Lady Principal.  
dd-1f Wykeham Hall, College Avenue, Toronto

JOHN CAMPBELL,  
LONDON, ONT.,

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CARRIAGES, BUGGIES, CUTTERS,  
SLEIGHS, &c.,

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"CHAMPION"

## Threshing Machine!

Improved for 1878.

Driven by Horse or Steam Power

OVER 3,000 IN USE IN CANADA.

We are now prepared to deliver on receipt of satisfactory orders our CELEBRATED HALL CHAMPION THRESHING MACHINE, to be driven by Horse or Steam Power. These machines have been without a rival for the past FIFTY YEARS, nearly all the other Threshing Machines are imitations of the Hall Machines, and have failed to give entire satisfaction. The Hall Machine has been the

## Standard Threshing Machine

In the United States and Canada ever since introduced by the late JOSEPH HALL in 1828. The Hall Champion Threshing Machine has been gradually and carefully improved each year as experience proved wise and desirable. No changes have been hastily made and called improvements. The greatest possible care has been exercised in the construction of all the working parts of the machine so as to save the necessity of repair and prevent annoying delays which are caused by breakages. Nothing but the very best material has been used throughout the machine, and the workmanship is unsurpassed. Our machines are supplied with our

## PATENT DIAMOND POINTED CYLINDER TEETH

worth three times as much as the ordinary teeth. We can supply

Pitts, Planet, Pelton, or Hall Horse Powers,

(eight or ten horse) either DOWN or MOUNTED on TRUCKS as customers may desire. Also TRUCKS built specially for SEPARATORS, with Broad Tires.

We are building a special machine for STEAM THRESHING—with 36 inch cylinder and 42 inch grain belt, and we also supply a Steam Engine which we guarantee to drive our Thresher in a first-class manner as rapidly as it can possibly be fed. Our Engine is made from the most improved model used throughout the United States, and gives universal satisfaction. It is simple in construction, easily and perfectly governed, and not liable to accidents or to get out of order, and all danger from sparks entirely removed.

Circulars sent free upon application. For further information address,

Joseph Hall Manufacturing Co.,

OSHAWA, ONTARIO.

dh-4

## To Our Subscribers.

OUR FRIENDS,—

We should feel obliged if you would send us a list of names on a post card, or otherwise, of parties in your district who do not yet take the ADVOCATE, and who you think might become subscribers.

We intend printing

## FIFTY THOUSAND

## EXTRA PAPERS

About the latter end of this month to GIVE AWAY to good men.  
A card with list from you will oblige Yours respectfully,

WM. WELD,

EDITOR FARMER'S ADVOCATE.

PROVINCIAL EXHIBITION.  
OF THE  
AGRICULTURAL AND ARTS  
ASSOCIATION  
OF ONTARIO,  
TO BE HELD AT TORONTO,  
ON THE  
23rd to 28th September, 1878.

\$18,000 OFFERED IN PREMIUMS.

Entries must be made with the Secretary at Toronto on or before the undermentioned dates, viz:—

Horses, Cattle, Sheep, Swine, Poultry, Agricultural Implements, on or before Saturday, August 24th.

Grain, Field Roots, and other Farm Products, Machinery, and Manufactures generally, on or before Saturday, August 31st.

Horticultural Products, Ladies' Work, Fine Arts, etc., on or before Saturday, September 7th.

Prize Lists and Blank Forms for making the entries upon can be obtained of the Secretaries of all Agricultural and Horticultural Societies and Mechanics' Institutes throughout the Province.

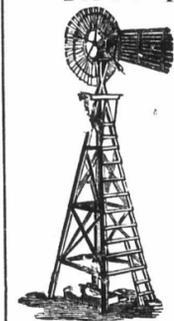
JOHN R. CRAIG,

Secretary Agricultural and Arts Association.

di-1

## J. M. COUSINS' WIND ENGINE

For Pumping Water.



The cheapest power in use for Farms, Dairies, Gardens, Lawns, Railways, Brickyards, and all places where large quantities of water is used.

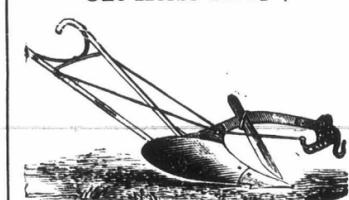
Also all kinds of Pumps—wood and iron, force and lift.

Wells dug, Cisterns, built, and Curbs made.

Water Pipes and Fanning Mills. Strawcutters made and repaired.

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For Orchards, Gardens & Nurseries.

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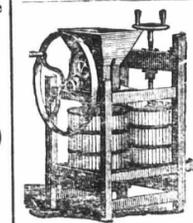
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Send for Price List.

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THE BEST EVER OFFERED IN CANADA.

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