

The FARMER'S ADVOCATE

AND HOME MAGAZINE

VOL. XVIII.

LONDON, ONT., JULY, 1883.

Whole No. 211

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1875.

FOUNDED 1866

THE FARMER'S ADVOCATE —AND— HOME MAGAZINE.

WILLIAM WELD, Editor and Proprietor.

The FARMER'S ADVOCATE is published on or about the 1st of each month, is handsomely illustrated with original engravings, and furnishes the most profitable, practical and reliable information for dairymen, for farmers, gardeners or stockmen, of any publication in Canada.

Impartial and independent of all cliques or parties, the FARMER'S ADVOCATE aims to present to the farmers of Canada with an unbiased judgment the agricultural news of the day. Voluntary correspondence containing useful and seasonable information solicited, and if need, will be liberally paid for. No notice taken of anonymous correspondence. We do not return rejected communications.

TERMS OF SUBSCRIPTION:

1. \$1.00 per year, in advance, postpaid; \$1.25 in arrears. Single copies, 10 cents each, postage prepaid.
2. Subscriptions can commence with any month.
3. Remittances at the risk of the subscriber unless made by registered letter or money order.
4. Subscribers who desire to change their P. O. address will send both old and new address.
5. The FARMER'S ADVOCATE is continued until otherwise ordered. The name of a subscriber is taken off from our list with the same promptitude in all cases that it is put on, provided all arrears are paid up, but we cannot stop a paper unless the name of the Post Office, as well as that of the subscriber, is sent to us.

ADVERTISING RATES:

Will be furnished on application, and manufacturers, seedsmen, stock breeders and others will find this journal an unrivalled advertising medium.

The FARMER'S ADVOCATE has the largest circulation among the best people in Canada. Its advertisements are reliable and are read.

Address—
THE FARMER'S ADVOCATE,
360 Richmond Street,
LONDON, ONT., CANADA.

I congratulate you on the success of the FARMER'S ADVOCATE, and you richly deserve the encomiums which have been bestowed by its numerous readers. May the ADVOCATE long continue to flourish, is the prayer of H. H. MAUDE, Baynes Sound P. O., B. C.

Cannot every one of our subscribers send us one new subscriber this month? Put your shoulders to the wheel. We will give you a paper which you will be proud to say that you are a stockholder in, for as a subscriber you are an interested party in its success.

"I have prized THE ADVOCATE because of the information given to farmers, and for its staunch advocacy of the rights of farmers generally; and trust that you may long be spared to continue its publication. I think that farmers generally are making a mistake by not taking a good agricultural paper, through which much valuable information is obtained. Too many farmers are doing little or nothing for the improvement of either themselves or farms, getting along in the same old slipshod way from year to year, and so are not able to compete with intelligent, wide-awake farmers."

I. SCOFIELD, Carleton, N. B.

"I was perfectly delighted with your award of seeds. Thought possibly—there being so many of them—they might be old, but, to my surprise, believe every seed to have grown."

DANIEL WOOLLY, Port Ryerse, Ont.

Our Monthly Prize Essay.

Our prize of \$5.00 for the best essay on the home curing and best method of keeping hams and bacon, has been awarded to Miss Kate Kitchen, London Township, Ont.

A prize of \$5.00 will be given for the best essay on drying small fruits, apples, &c., the best method of keeping and preparing for market, and the profits to be derived from such. The essay to be handed into this office by the 15th of July next.

A prize of \$5.00 will be given for the best essay on the Home Making of Bread. The essay must not be a mere compilation of recipes, but the process of making and baking should be sufficiently amplified to make a complete essay. The manuscript to be in before the 15th of August.

Our Fall Campaign

SELECTIONS FROM OUR GRAND PREMIUMS.

Pushing Agents Wanted in every County.

NEW PREMIUMS.

For one new subscriber, accompanied with the annual subscription of One Dollar, we offer to every subscriber, any member of the subscriber's family, each school-master or mistress, or to any Post-master, as a premium, their choice of the following:

1 pound of **The Martin Amber Fall Wheat**. This variety, never before introduced into Canada, is most highly spoken of by our correspondents where grown. Grand for yield, hardy, beardless, and pronounced A 1 by the millers.

2 plants of the "**Jersey Queen**" Strawberry. This plant, originated by E. W. Durand, is now pronounced the best variety in the market. In 1882 the "Jersey Queen" won the first prize for the Best Quart of any Variety at the Exhibition of the N. Y. Horticultural Society, and on the 19th ult. at the same Society's Exhibition for 1883, the N. Y. Tribune reports "that the Jersey Queen again showed its superiority by winning the prize offered for the best two quarts of any variety."

3 Roots of **The Lily of the Valley**. For cut and particulars of this most lovely flower, see page 206 of this issue. Nothing so sweet, so charming in its delicacy and beauty as this type of purity.

The Farmer's Advocate Hand Book for 1884. (Copyright.) This most useful Hand Book will contain a calendar with moon's phases, &c., serve as a daily farm account book, have a register of breeding cattle, and a choice collection of most useful tables and information.

The above prizes are forwarded by mail, postage pre-paid.

Cuts and further descriptions of the "Martin Amber" Wheat and "Jersey Queen" Strawberry will be given in an early issue.

Our readers will bear in mind that THE FARMER'S ADVOCATE has never been surpassed or even rivalled for the usefulness and value of its premiums.

Ladies and gentlemen who have a few hours to spare can do nothing more profitable or more useful than to canvass their neighborhood to secure new subscribers to THE FARMER'S ADVOCATE AND HOME MAGAZINE.

BEAR IN MIND

that we give a liberal cash commission, if you had rather work for cash than for our premiums. Many of our Agents are making great wages working for cash commission. If you prefer to work for cash commission send for our terms to agents.

Send your names as fast as secured. Some of our best agents are ladies. Ladies can do just as well as men. A lady can canvass her neighborhood and make a handsome sum thereby.

Soja Bean.

By the kindness of Prof. J. H. Comstock, we are in receipt of the report of the Experiment Station of Cornell University at Ithaca, N. Y. We notice therein the analysis of the Soja Bean and Pod.

	Ripe Bean.	Pod.
Moisture.....	6.05	7.71
Ash.....	5.25	6.80
Crude Protein.....	38.62	6.96
Fat.....	16.80	.97
Non-nitrogenous Extractive Matter.....	29.24	40.75
Crude Fibre.....	4.03	57.45

We called the attention of our readers in March No. to the great value of this plant for feeding purposes, and our statements by above analysis are abundantly borne out. The plant is also remarkably prolific.

By the Way.

Crop prospects are improving. Oatmeal and water make an excellent drink for the hay or harvest field.

How good people may patronize horse-racing without seeming to do so—attend the "agricultural" fair.

A medical authority informs us that buttermilk and water have medicinal properties that are invaluable for the hot weather.

Cultivate the corn not only to mellow the soil but also to make it unnecessary that the plants should share their food with weeds.

Do not leave any unoccupied land to grow a crop of weeds. When an early crop is removed sow at once any crop that will keep them down. Buckwheat or peas are good and may be turned under before frost.

Clover and grass are at their best when the blossom has fully formed. This is reasonable and can be easily understood, when it is considered that after the blossom comes the seed, and all the strength of the plant is concentrated in the seed.

Docility in cows is one of the indispensable comforts of the dairy. The milker who is in momentary dread of being overset, with his pail, by a blow from the cow's rear foot, is an unhappy man; but if the cow is one of his rearing his misery is deserved, and he alone is to blame for it.

Joshua Clothier, of Jockvale, Ont., informs us that he remitted money to the "Rust Well Auger Co.," whose advt. lately appeared in this paper, and so far has failed to receive the tools ordered or a return of his money. Our subscribers should bear in mind our notice at head of "new advertisements," and most particularly that part, "they can always find safety in doubtful cases by paying for goods only on delivery." Our readers will assist us in keeping our advertising columns free from unreliable advertisers, by reporting promptly every one who fails to make good the offer contained in their advertisements. By this means we will not only prevent dishonest advertisers from using our columns, but we will expose the schemes of any persons who seek to impose on our subscribers.

OBITUARY.—We regret to learn of the death of Mr. N. S. Whitney, of "The Hills," Frelighsburg, Q., on the 31st May last. The deceased gentleman was an enterprising Montreal merchant, but at the same time had a well managed farm, and was one of the best breeders of Ayrshire cattle in Canada.

Editorial.

The Month.

There needs a good deal of preparation for harvest, for the work to go on systematically and in order. We are fully persuaded that there is a good deal of time lost, and a consequent reduction of profits in farming, by not having everything in order for the harvest. See what delays are often made on account of some defective machinery; the farmer probably has to drive a long distance for some casting, and leaves the hands without employment at home. The reaping or mowing machine has been left out doors to rust, and some part gives way suddenly. Our farmers do not take that care of implements and machinery that they should, and hence they soon wear out, not by actual use, but through rust and dirt. An ordinary harvesting machine should and will last a dozen years at a small outlay of \$4 or \$5 a year, if properly cared for. The secret of this is in taking the machine apart and thoroughly cleaning and oiling, and not putting together again until needed for another harvest. If our farmers would do this a great amount of money could be saved in the annual expenditure for machinery. Some farmers we know use up a machine in three or four years and are continually buying, and nothing reduces the profits in farming so much as this expenditure for machinery and implements. Then there is something new coming up every year, and often good articles are discarded for a novelty, and it is not unfrequent to see barn-yards and fence corners studded with some new implement. What with mowing and reaping machines, horse rakes, hay forks, seed drills, cultivators, gang plows, long plows, harrows and scufflers, and the various and sundry requirements to harvest a crop, it will be found that unless economy and care be taken in the purchase and use of such, farming won't pay. Then labor is high, and according to present appearances is going to continue so during the coming harvest; and when the high price of labor be taken in connection with the price of machinery, farming now-a-days is not all profit. This hired-man question is an important consideration, especially during the harvest. Some farmers can get double the work out of their hands that others can. A poor man is dear at any price; get good reliable men and pay a liberal wage. Keep them in good humor by kind treatment and reasonable hours of work. Don't expect them to commence work at five o'clock in the morning and work till after dark. Feed your men the best you have and plenty of it, and you will be surprised how pleasantly harvest will pass, and what an amount of work your men will do.

Farm Labor.

During the coming harvest, according to the present outlook, farm hands are likely to be scarce and wages high. This is the necessary outcome of not having permanent labor on our farms the year round. Farmers want to employ more help. Not only do they want more labor, but it needs to be permanent. This hiring men for a few months in the year gives no encouragement to farm laborers. When they find they can only be profitably employed in rural districts for a few months in the year, they flock around towns or go on public works. Now, this could be remedied by having comfortable cottages, either in villages or on the farm, so that laboring men could have a garden, keep a cow, &c. Then the men would have an interest in the place and the surroundings, and they would become a fixed population. For the want of proper houses, only young men are employed on

the farm, and these probably for a portion of the year. If a hundred acres of land is properly worked it should give steady employment to at least three men and two spans of horses the year around. Several farmers now are offering nearly as much for four month's work as might do to hire a man for the year. Our farmers appear to think that labor can only be profitably employed during seed time and harvest, and that the rest of the year can take care of itself. This is a mistake; labor can be profitably employed all the time on a farm. And we have no hesitation in saying that unless more labor and capital is expended on our farms, that the older settled portions of the Dominion must eventually go behind. There is no doubt that colonization attracts the masses of emigrants to new places, but, yet, labor can be as profitably employed in Ontario as any part of the Northwest. But permanent employment cannot be expected unless there is suitable accommodation for married help.

This high price of labor and scarcity of good farm hands has a disastrous effect on the general production of the country. Crops have to be hurried in, and the ground half prepared, and then in the harvest time work is crowded, and the crops are garnered in a slipshod manner. Then draining cannot be done on account of this labor question, and the consequence is wet fields and late and poor crops. The labor question is at the bottom of all this, and we see no remedy only by employing more and permanent labor, and this can only be done by having better accommodation for married men.

Agricultural Exhibitions.

For a long time we have thought that our exhibitions have been degenerating into too much of the Barnum line. Grants originally intended for agricultural exhibitions and the encouragement of agriculture in its various branches, and managed by practical farmers, have been alienated to the furtherance of questionable sports and amusements. In fact, many of our so-called shows are only fancy fairs and Punch and Judy exhibitions. The management has been taken out of the hands of the farmers, and is now mainly controlled by others, whose principal object is to draw crowds to the city to spend their money. Without exception, the horse-ring constitutes the leading attraction. However we may admire racing in its proper place, it should have no place in an agricultural exhibition. They should be schools for observation and instruction. There should be sufficient recreation in viewing the varied display of productions and stock to satisfy any mind imbued with a love of farming. Indeed, these exhibitions of fast horses and dog shows have a tendency to divert the minds of the people into frivolity, and hence the true design of agricultural fairs is lost sight of. One of the most successful agricultural exhibitions in the world—the Royal, of England,—eschews everything not directly pertaining to agriculture, manufactures, and kindred branches of industry.

About one of the most absurd connections with our fairs is the encouragement of dog or bench shows. Here we have a host of yelping curs petted and fondled, and money spent on them, to go through the country and destroy the farmers' sheep. It has been conclusively shown that these sporting dogs which are inuading the country, are the ones that commit all the ravages. Yet the managers of the Western Fair in their wisdom appear to think more of a lot of useless curs than a flock of Merino sheep. There is in fact a plethora of sporting dogs in every city, and in London in particular, as has been brought to notice recently in the killing and maiming of over

60 valuable imported sheep in London Township. On principle we deprecate the idea of making our shows anything that would tend to lower the standard of morality in agricultural exhibitions. It was a noticeable fact that last year, both in Toronto and London, whiskey was sold openly, and the authorities winked at it. The sum and substance of all this is to make money out of the farmer, no matter at what expense. However desirable music may be, we fail to see why \$700 should be offered as prizes for bands at the Western Fair, whilst several classes of animals are neglected altogether and some but meagrely supported. There is certainly inconsistency in this; and as managers of large fairs appear to be so hard up for novelties to amuse and attract our farmers, how would it do to get Barnum's Jumbo in the show line, and Mitchell and Sullivan in the prize ring? With such an array as this, surely the people would be gratified to their hearts' content, and their morality brought down to the level of professional sports.

TOWNSHIP EXHIBITIONS.

We strongly urge upon our farmers to maintain their township shows and keep them intact. A number of the best township shows we know of have been amalgamated with larger ones, and the management got out of the hands of the farmers and run by outsiders and speculators. Township exhibitions can be managed easily by a few practical farmers, and with few exceptions give satisfactory financial results, but when citizens and townspeople presume to control the management there is always dissatisfaction, and the funds are appropriated to objects which have no connection with the elevation of agriculture. At our township shows, farmers, their wives and children meet without witnessing anything of a doubtful and demoralizing character. These township shows act as a greater stimulus than larger ones from the fact that neighbors come into more direct contact in their exhibits and they have a better chance of seeing what their neighbors are doing.

The Quarantine.

At the extreme ends of the Provinces of Quebec and Ontario—at Point Levis and Point Edward—the Government has a quarantine, and the expenses of such paid out of the funds of the Dominion. As the American Government makes no preparation for the quarantining of stock in or near any points between the two countries, the whole onus of keeping both Canadian and American cattle falls upon the Dominion. Not one-third of the stock that are quarantined in these two places ever do any benefit towards improving the stock of Canada. The fact is these quarantines are kept up by the Dominion solely for the benefit of dealers in stock in Canada, who run them to Chicago, Kansas City and other marts of stock in the west. Originally the quarantine was established for preventing diseases from the infected districts of Great Britain and the Continent being brought into Canada, but by the present working of the quarantine on the borders, the Dominion has to foot the bill for both Canada and the U. S. There are but few purchases of stock of any kind from the U. S. to Canada, compared with what is exported there. Indeed, Chicago and Kansas City in the west are the marts for the thoroughbred cattle of both Canada and the U. S., and why make the Canadian Government pay all the bills of quarantine?

We should like to hear from the Minister of Agriculture what rate is charged for stock in these quarantines, and what ratio is paid by American importers. Nearly all importations of stock to this country pass on to the ranches of the Western States. Our principal importers of cattle only make this country a shipping place and a con-

venience for American breeders, and Canadians have to foot the bill of keeping up the quarantine. This gross abuse should be looked after by the authorities, and American stock by no means allowed to occupy our quarantines, as our U. S. cousins are so extremely jealous of their own rights in this respect. Some guarantee should be given that stocks imported by Canadians should remain in the country a sufficient time to benefit our herds and flocks, since there is such a scarcity of real good thoroughbred bulls.

A Mixed Husbandry.

The failure of fall wheat in Ontario this year should be a salutary lesson to our farmers. For several years, now, there have been good crops of wheat, and, until the last year, fair prices, and farmers went heavily into wheat. Every nook and corner of the farm was plowed up and sown, and a great many risked nearly all they had on this crop. It was thrown in, too, in a slipshod manner, and our farmers commenced to think that wheat would yield a good crop, no matter what or how it was sown. But even if wheat had been a success this year, it does not follow that raising any particular cereal pays in Ontario. It does not, no matter in what light you look at it. If a farmer judiciously varies his crops and productions they can't all fail at once, and hence a mixed husbandry is the surest investment. You are not risking your money on one horse. As far as wheat growing is concerned, the Western States of the American Union and the Northwest of the Dominion can always discount Ontario in wheat raising. Leave this to the virgin fertility of these vast belts, that need no manuring for years to come—that to plow and sow is all that is requisite to raise the best crops of grain. But in the older portions of Ontario manure must be heavily applied, or a crop cannot be expected. But manuring land means so much outlay of capital, first in the material and then in the labor. There is such a storage of plant food in these organic soils of the Northwest that for years to come wheat can be raised at one-half the cost that it can be in the older settled portions of the country; and from this Ontario had better stand from under in this wheat business, and adopt a mixed husbandry, and use her lands for that which they are best adapted. Farmers have altogether too much land under cereal crops, or they plow too much. If about one-half of the land in Ontario that is now in cereals was in pasture and meadow, and more stock kept at the present time, we should be millions ahead in our productions, and the land would be in a better condition for future crops. There is nothing probably drains a country so much of its fertility as wheat raising, from the fact that this cereal is exported to other countries to enrich them, and the land here is robbed of so much of its production. Even were it consumed here it would never get back to the soil; but all the coarser grains being principally consumed by animals, gets back to the soil in the shape of barn-yard dung, and thus the land receives back what it gave out. By a system of sewerage and manufacturing such, the large cities of the older countries of Europe are centres for the production of enormous quantities of manure or plant food, which is used to enrich the land of these countries. Every bushel of wheat that is exported to England, we say, is robbing our land of so much food and enriching theirs. Hence the more coarse grains we can grow here, and the more cattle we can feed, the more manure we will produce, and the richer our land will become, and at the same time we will be making more money out of our land by less labor. For what pays equal to stock in this country?

Wool.

The wool season has opened inauspiciously, and combing or long-wools are down. In Boston today last year's clip can be had for twenty-one cents a pound, and according to all advices the markets are stocked. This glut of long-wools shows there is over production, and that manufacturers cannot make them into goods that will command the market. Fashion has a great deal to do with this, and no doubt this influence has brought long-wools to the price they are now. Alpacas are not worn now by women, and worsted coatings are not fashionable with men. Here it is, fashion rules. Farmers, then, are thinking about growing a finer class of wool to suit the demand. But this should be done cautiously, for fashions are ever varying, besides it might be well to look farther into the profits of long and fine wool sheep. If the fleece were all that a farmer looks at for sheep breeding, certainly Merinos and Southdowns would be the sheep; but then the mutton must be considered, and then the proposition of fine or coarse wool sheep being the best presents itself in this shape: If so many cents a pound are lost on a fleece of Cotswolds or Lincolns, what is gained on the increased weight of mutton of these over a Down or Merino sheep? This should not be lost sight of. A farmer is making more out of a flock of long-wool sheep by selling wool at 20 cents a pound and mutton retailing at 15 cents, than when formerly he got 40 cents for his wool, and only 8 and 9 cents for his mutton. This question will bear a great amount of sifting, and certainly we would not advise our farmers to make any radical changes in their breeding, for what you gain in the price of wool you will lose in mutton. There is another mistake we are afraid our farmers are making, and that is by trying to produce a medium wool by crossing Shropshire and Hampshire Downs with the coarse-wooled sheep. Now this only produces a common wool, and is simply classified as such by buyers. In grading wool, dealers only buy for combing and clothing wools. The manufacturers may make eight different grades out of the same fleece, but the buyers or dealers make only two. There are but few manufacturers on a large scale that buy their wool directly, in fact none of the large houses. Grading does the whole business; and since two are only made by dealers, it is plainly evident, considering the factors of mutton and wool, that to keep fine wools and coarse wools separate is the best plan.

Canada Thistles.

With all that has been written and said about the destruction of this pest, and with all the efforts that have been put forward, they are still on the increase, and owing to the humid weather they have this year made a luxuriant growth, and at the present time the thistle is further ahead than we ever saw it. The destruction of these is becoming a formidable item in the expenses of a farm, inasmuch as the price of labor is so high. Like the potato bug, their stamping out requires concerted action on the part of individuals, municipalities, and railway companies. The different railways are studded with this and all kinds of noxious weeds, and probably this neglect is due to the laxity of putting the law in force by the pathmasters and township and county officials. The law in this respect is satisfactory, and if put in force would be a safeguard against the ravages of this thistle. But what is the use of farmers contiguous to public highways, and railroads, trying to rid their lands when these allow them to go to seed and spread? The pathmaster exercises no jurisdiction further than nominally notifying a few individuals in his beat to cut the thistles, and further than this the law is never put in force. In fact our public highways are a scandal, and are hot-beds for the growth of all kinds of pernicious weeds. When these are neglected how can our officials expect to put the law in force with regard to individuals? At the present time our highways are grown up with both Canada thistles, rag-weed, and what is vulgarly termed "Blue thistle," which is as harmful as any we have. By all means let the law as regards noxious weeds be put in force against individuals, municipalities and railway companies, or else there is little use of a few farmers trying to rid their lands of thistles.

Special Contributors.

A Chatty Stock Letter from the States.

[From our Chicago Correspondent.]

A very important thing at a fat stock exhibition is the accurate account of the gain of the beasts from birth. Too much precision cannot be exercised in this matter, though one might easily think that the matter had heretofore received little or no attention at the hands of those in charge of the Chicago Fat Stock Show.

Of course some will rightly think that it is far easier to see that something is wrong than to see how it could and should be righted. Nothing can be more intolerable than a chronic fault-finder; he sees no good in anything he has not had a hand in, and succeeds in making himself and everyone around him thoroughly miserable without righting any of the wrongs that are not purely imaginary. However, if there was not an active critical spirit constantly at work, there would be very little material progress made; everybody would be satisfied with the faulty methods of old, and would soon cease to go forward, and would be mere imitators.

The fault of which we wish to speak at present is the inaccurate method of averaging the daily gain of a bullock by dating the number of days from the animal's birth, without taking into account the weight of the animal at that time. This may appear a very small ground to some for entering a complaint, but as any one can see at a moment's reflection, the principle of the system is wholly wrong.

Suppose the calf at birth weighs 50 to 60 pounds; is it fair to give the animal the benefit of that weight in reckoning how much it has gained per day, when the number of days is only calculated from the date of birth? It is on precisely the same principle as if a yearling weighing 1,000 pounds were put on daily rations of strong fattening materials for a given period, and, when fat, the feeder took the entire weight of the animal, without deducting the original thousand pounds, and by counting only the number of days from the date of putting on full feed, calculated the gain per day! There is no difference in principle, be the number of pounds fifty at birth, or one thousand at the time full feed is commenced.

How would it do to arrive at an approximate average of calves at birth, to be deducted when the average gain per day is calculated? That would be one, and probably the most practical way, of overcoming the difficulty, though a calf was recently reported from Indiana as weighing, at birth, 85 pounds, which is nearly double the weight of a large number at birth. If the average weight to be deducted were placed at say 50 lbs., such a calf as the one mentioned would have an unfair average. To entirely overcome this, it would be necessary to count the number of days from the date upon which the dam was served. This would undoubtedly be the fairest possible way of determining exactly how much actual gain the animal had made each day. This is a matter which should be seriously considered by fat stock and fair associations and agricultural societies.

In this age of early maturity, when animals are taken to the shambles about as soon as it was in former times thought necessary to place them in the feed lot or stall, there is a grave danger of the matter being carried too far, and lack of vitality and disease invited by too early breeding. There is no worse mistake made on the average farm of to-day than the premature breeding of cattle, hogs and sheep. A rule which would do much toward solving the many questions of how to keep our animals in perfectly healthy condition, and how to

ward off diseases which, when they have taken hold, are almost impossible to successfully treat—a rule which would solve these and many more, would be never to allow an animal to breed till it has attained its full development. Like surely begets like; and if an immature sire is employed, strong, vigorous offspring cannot reasonably be expected. The sire may be of the finest breeding, but it cannot impart qualities which it does not possess; and no animal, however fine, can possess the requisite qualities of a breeder until the vigor which only full development can give is acquired.

A boar will enjoy serving sows at six months of age, but his future usefulness is greatly impaired, while at the same time his progeny does not receive the necessary transmission of vitality and bodily vigor, if he is so used before one year old.

In adopting this plan many may, at first, consider it rather expensive; but it is one that pays most liberally in the long run. Farmers who adopted this course have been known never to have a case of hog cholera on the place, while their very barn-yards were permeated with the stench from the hogs of their neighbors which succumbed to the scourge. Make a good, vigorous beast of your boar, bull, ram or stallion, and thus render him able to bring the power and vitality of maturity to his work of reproduction, before you set him at it, and it will be found to amply repay the trouble. It is well enough to hurry the fattening stock and keep it in fair to good market condition from the time of weaning, but be sure not to hurry the breeding stock.

Not long since we gave in these letters the experience of a western man who has been successfully breeding heavy stallions to very small, native mares. So far as the danger to the latter of being covered by horses so much heavier than themselves, no difficulty is found, but another gentleman of experience gives it as his opinion that it is a poor practice on other grounds.

It is argued, and with reason, that great disparity in sire and dam causes undesirable qualities in the offspring. If the sire be much heavier and more perfect than the dam, the qualities of both will be transmitted in a greater or less degree, and the colt, while having the large frame, perhaps, of the one, will have the narrow chest and other undesirable characteristics of the other. It is simply impossible to get a perfect animal out of an imperfect mould, no matter how fine the substance put into it. It is better to grade up by less violent stages than coupling a Norman or a Clyde with a mustang mare.

Recently a colt sired by a fine stallion, but out of a blind mare, was born stone blind. There is in this an obvious moral to those who persist in thinking that "a mare is all right for breeding when she is unfit for anything else."

The recent speculative panic in lard on the Chicago Board of Trade, when prices went down \$2 per tierce in 24 hours, was started by the charge that 18,000 tierces on the market had been adulterated. The panic was the wildest that has been known in 13 years, and some of the oldest and strongest of the operators were caught foul and carried down in the vortex. From the proof thus far adduced it looks as if the charge may be substantiated. It is time to have societies for the prevention of adulteration.

A factory for condensing milk has been established at Truro, Nova Scotia, and as soon as contracts for supplying milk have been made, the machinery will be put in operation. The demand for condensed milk is increasing, and as all of this commodity now used in Canada is imported, the prospects are that the home market will consume nearly all that the company can manufacture, and we feel assured that if a similar establishment is started in Ontario it will prove a success.

PRIZE ESSAY.

The Home Curing and Best Method of Keeping Hams and Bacon.

BY KATE KITCHEN, LONDON TOWNSHIP.

The subject of curing and keeping bacon is of the greatest importance to farmers and other families in the country, as during the summer season, when the greatest strain is put on every member of the household, pork is the only meat they have, and unless in the vicinity of towns and cities, farmers are unable to procure fresh meat conveniently. Unless pork is properly cured and kept, it is indeed an unsavory dish, and from my experience in an old and well settled country place, well cured hams and bacon are the exception and not the rule. What with the lack of knowledge of the method and principles of curing meat, bad keeping, and also the worse cooking, the ordinary pork (bacon) found on our farmers' tables is anything but inviting. But this should not be the case, as what is more savory and relishing than well cured ham and eggs? And what more appetizing than a piece of cold boiled ham or spiced side meat, that is not too fat? Nothing! So instead of pork being the nasty, indigestible food we generally find, by proper management in curing, and keeping, and cooking, it should take the highest place at our farmers' tables as one of the best and most nutritious foods. It may not be generally understood that whether bacon be nutritious and digestible depends solely on its condition at the time of eating, and this will depend on whether it has been properly fed, so as not to produce too much fat or too much muscle—or in other words, to have the fat and lean well mixed. No method of curing, keeping and cooking can make some pork a desirable article of food. Take a side of bacon, for instance, that is solely formed of fat, and nothing can make it palatable, either by curing or cooking. But if badly cured, this kind of bacon becomes nauseous; and this is the kind of meat generally found on farmers' tables.

If not digressing too much, Mr. Editor, I think to make the subject complete, the feeding of pork and cooking should be taken into consideration a little, along with curing and keeping. I have invariably found that pigs that were allowed a free run all summer on grass, and kept in a fair thriving condition, put up early in the fall, and fed—not with too much corn in the start, made the best and most evenly mixed pork; and for this reason home feeding has as much to do with producing a good article of bacon as has the subsequent curing and keeping. It is a well established fact that exercise produces muscle, or the lean part of any animal, and pigs cooped up in a pen and fed on nothing but fat-producing food as soon as weaned, have no chance to produce lean meat, and the consequence is, pen-feeding young pigs until the time they are killed produces nothing but fat. This pork may do well enough to sell, but if our farmers want a good home article, let pigs have plenty of exercise and a free grass run during the summer.

The kinds of feed is another consideration. We always find in our family that hogs fed all on corn never make such a mixture of fat and lean, which is so desirable in properly fed pork, as when there is a mixture of other grains. Of course this can be accounted for from the excess of fat-forming elements in corn over, say, peas and barley. Corn has a low percentage of flesh-formers in its composition, and hence would not make lean meat like peas, which contain just double the quantity of gluten, which is flesh-forming. Hence, mixing peas and corn, or peas and barley, we have found better for the purpose of producing a good quality of pork for the farmer's family, than if corn, or peas, or barley, were fed separately. Peas are the most valuable when the pig is first put up to fatten, by filling up the flesh on the bones; but when once the bones have become covered with flesh, corn will be found to be the best food to form fat, on account of the large amount of starch and sugar it contains. If our men will follow this plan of feeding, along with a free range of grass in summer, they will have no four-inch thick blubber pork, but

a good mixture of fat and lean. If the men will give us an article like this, we women folks will present them with a relishable article of home-cured bacon.

Now for the curing and keeping. With regard to the curing of bacon and hams, there are two processes—the dry salting and in brine; and if the same ingredients are used, the results will be the same in both methods, as far as the curing is concerned. But it is the keeping, the age, and the treatment after that produce the mellow, high-flavored bacon and hams. For home use, hogs from 200 to 250 lbs. make the best bacon for general use on a farmer's table. For convenience, the hog should be cut up into hams, shoulders and sides, although some prefer to leave the whole in a flitch and take off no shoulder. It is always preferable for family use to take the ribs out, as then there is no trouble for the women to take them out when cutting up the bacon in summer time.

I need hardly say that curing is nothing more than arresting the ordinary process of decomposition, which would take place at a given temperature in meat if left in its natural state. The two most active agents, and upon which all curing must depend, are salt and saltpetre, but proper drying is a main factor, and these are all the ingredients that are needed to produce the finest and most relishable bacon and hams. You may flavor with sugar or spices, but the curing will depend solely on the two first named. But then the majority of bacon that is spoiled in curing is by not applying them in proper quantities. If you apply too much saltpetre your meat will be hard or horny; if only salt is used, or not enough nitre, your meat will lack color, firmness and flavor. The quantities that I have found to be efficient and that can be relied upon to produce properly cured bacon and hams are: To every 9 lbs. of salt use 4 ounces of saltpetre. You can put it on singly or mixed with the salt. This quantity is sufficient for about one cwt. of meat. In curing hams some rub them hard with coarse salt, both flesh and stem sides, and let them lay four or five days on boards or a table for the brine to drain off; then the hams are treated with the salt and saltpetre mixed. This, however, is needless and a waste of labor. Our plan is to thoroughly rub the hams and bacon with the quantities of salt and saltpetre mentioned, and put them away in a trough or on some boards, and let them stay for a month or five weeks, and turned occasionally as the salt is absorbed in order that the different sides of the meat may come in more direct contact with it. Some give a second salting at the end of a month, but if you have the proper quantity to start with your bacon won't want any more. I prefer dry salting, but others are in favor of a brine pickle, and in that case all that is required is to add 6 gallons of water to your 9 lbs. of salt and 4 ounces of saltpetre, and you have a proper pickle. Some boil the brine and take off the scum, but salt and saltpetre are properly dissolved in cold water if left long enough, so boiling can add nothing to the efficacy of the brine. If sugar-cured hams are required add to the quantity of salt and saltpetre mentioned 3 lbs. of sugar, or a couple of quarts of molasses. Then if you want spiced bacon, put in allspice, cloves, cinnamon, &c., to suit your taste. There is a prevalent idea among farmers that meat will only take a certain quantity of salt, and no more than is requisite to cure it. There never was a greater mistake; meat may absorb so much salt that it is almost unfit for use; and this is the case with the greater part of our home-cured meat.

When bacon and hams have lain a sufficient time, as pointed out, either as dry-salting or in brine, they should be wiped off and allowed to dry gradually. Hence, farmers, to have a good mellow article of bacon, should have it hung around the kitchen during the winter, far enough away from the stove and pipes in a cool, dry temperature; this is what makes the mellow bacon and rich hams, age.

With regard to smoking bacon and hams, I am strongly persuaded that it is not a home way of curing with the majority of our farmers, as they kill their pork in the fall or winter and only commence to smoke-cure in the spring, when there is no chance for the smoke to penetrate the meat; anyway a nice side of bacon or ham cured during the winter in a farmer's kitchen is preferable to anything smoked, in my opinion. But if smoking is preferred, and in the absence of a proper smoke-house, get a sugar hogshead and place it on an incline and dig a narrow trench five yards away—old stove-pipes may be used. Your hogshead with holes cut in the bottom will be at one end of the trench, and the fire at the other. Hang your hams and bacon on nails around the barrel, and

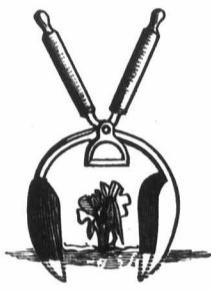
smoke with corncobs or maple chips. To be properly done the smoking process should commence as soon as the meat comes out of the salt or brine, and continue from 15 to 20 days.

When you have your meat properly cured it is an easy matter to keep during the summer from flies, which are the principal enemies to bacon. There are several ways, such as covering with canvas bags saturated with lime, whitewash, or packing in sifted ashes, dry oats, or baked sawdust; these are all good. My plan is to sift fine ashes into hot water until it comes to the consistency of paint, dip in the meat and hang up to dry, and a fly will never go near it.

If these directions be followed out, our farmers will have mild, nutritious and relishable bacon and hams.

Transplanting Implement.

The engraving shows a new implement for transplanting flowers, young plants, etc., in such a manner that they are not injured by being transplanted, and do not have their roots loosened from



the earth in which they are embedded. The transplanting implement is formed of two spoons or scoops provided with arms which are pivoted to each other. The scoops can be separated and forced into the ground and gradually closed, and the cone of earth containing the roots of the plant will be held between the scoops and can be withdrawn from the ground. Plants, flowers and shrubs can thus be transplanted very easily and rapidly without any danger.

A New Wheat Insect.

THE WHEAT BULB-WORM.

A new insect enemy of winter wheat has lately come to notice in central and southern Illinois, where it has done most serious mischief in some localities; and, as it will soon be too late to make observations upon it, the immediate attention of those interested is earnestly invited to this subject. Wherever it has thus far been detected, it has previously been confounded with the Hessian-fly, and it is not impossible that much of the damage attributed to the latter insect, in the southern half of the State, is really due to this hitherto unknown pest.

The insect is now burrowing in the base of the stem of the wheat, just above the root; and the pupa occurs in the same position. The effect is to stop the growth of the plant, and ultimately to kill it. There is abundant evidence that the grub leaves one stalk for another, so that a single insect may perhaps destroy an entire stool. Fields have been completely ruined by this pest, so they are now being plowed up for other crops. Where the injury is less complete, it has the effect to deaden the wheat, more or less completely, in spots. The insect may be found by carefully stripping down the leaves of the affected stems until the centre is reached, where, if it still remains, it will be found buried at the base of the growing stem.

As this insect has only been known to us for a few weeks, it is of course impossible to give any sufficient account of its development. It is certain, however, that the worms hatched in the fields in the fall, after the wheat was sown, and that the principal part of the injury was done before frost. It will now soon transform into a minute fly, which will probably rear a second brood later in the season. This fly will be no larger than a mosquito, but much thicker and more robust.—S. A. Forbes, State Entomologist for Illinois.

A lawsuit about \$200 worth of land between two farmers in the Province of Quebec has just come to a conclusion. The costs amounted to \$7,000, which the defeated party will have to pay. The victorious party was ruined by lawyers' fees. This is the old story. If these farmers had belonged to a farmers' club, and had agreed to leave their differences to be adjusted by their friends, in a just and amicable way, there would have been two rich farmers and two poor lawyers now, instead of two ruined farmers and two rich lawyers.

The Dairy.

Good Butter Demands Work and Thought.

BY L. B. ARNOLD.

It is often said that it is just as easy to make good butter as poor, but such an assertion is not true. In the first place, it costs much more thought and attention to make good butter than it does poor. Good butter-making requires unremitting attention, but poor butter will get along with very little. Thinking is *work* for anybody, and *very hard work* for most people—so hard that there is very little of it done whenever there is a possibility of shirking out of it. Eternal vigilance is the price of good butter, as well as of liberty, and with those who aspire to such goods there can be no let up to watchfulness; but the man who don't care whether his products are good or indifferent, will slide along with but little work and little care for anything. The matter of cleanliness, so important in fancy butter-making, demands a deal of both thought and work that indifference will get along without. It is easier to let milk vessels go half cleansed than to wash, and scald, and scrub, and rinse, till everything that can defile or infest is off of them. I have seen churns that smelled more like swill barrels than like vessels in a clean dairy, because it was easier to let them go than to cleanse them.

The use of such implements don't make gilt-edged butter. There is a like difference between cleanliness and filth running through all the manipulations of butter-making, that requires extra steps on the part of cleanliness, but after all it pays.

The severity of the brain labor necessary with a thorough-going dairyman becomes very much alleviated by continued use. Practice lightens the burden. Mental labor, it is acknowledged, is much more exhausting than bodily labor, but the severity of either depends largely upon habit. A man who has been accustomed to labor on a farm till middle age, can work day after day without becoming exhausted, and an accountant who has been accustomed to his business can also work continuously without any special fatigue. But put the accountant on the farm, and the farmer at the desk, and both alike will soon give out from fatigue, because organs which are comparatively feeble from lack of use, are suddenly brought into activity. Dairymen do as much brain labor as other agriculturists, and perhaps more, but they seldom do enough of it to make it pleasant and easy work. Dairying in all its departments calls for a high degree of intelligence for its proper execution, and no department calls for more than "gilt-edged" butter-making. To be successful in this direction there must be the right kind of cows in the dairy. In making a selection for this purpose, there is room for a large exercise of judgment and careful observation. The task is so difficult that few are able to accomplish it skillfully. The milk of every cow will not make gilt-edged butter, and he who would collect a herd that will, must expect to take a great deal of pains in collecting it. Then the herd must have the right kind of food, and it must be appropriately fed. Here is work for a life-long study. The whole question of cattle feeding is involved in this point. Just what to select for the best product and for usefulness, and how much, and when, and in what condition it should be given, are intricate questions which call for all the brain labor the best practical and scientific men can bestow upon them. With all the attention which the most experienced and learned investigators have been able to apply

to them, they are yet unsolved. How to perpetuate a good herd after it has been once obtained, is a matter no less intricate than how to feed it. A study and comprehension of the laws of transmission or hereditary descent, and, in fact, comparative physiology in all its bearings, should be understood, to enable a dairyman to conduct this branch of his business with the best success. Here is room for all the intellectual power he can bring to bear upon it—room for profitable, honorable, and pleasant study, to which there is no end. The dairyman sometimes complains that his life is one of drudgery and toil, and it may be such if he will make it so; but if he will open his eyes to the possibilities which it affords for usefulness and expansion of his intellect, and the promotion of his moral and physical well being, instead of complaining of his lot, he would thank the good Lord for having made him a dairyman—notwithstanding there is hard work in his occupation.

Training Heifers to Milk.

This is sometimes called "breaking," but the term is too harsh, and suggestive of ropes and clubs. While opposed to harsh treatment in training heifers to milk, we do not approve of feeding her on sugar, and singing to her, while we waste hours, days and patience in overcoming her dislike of the milking process. It is better to lay aside both sentimental and heroic notions, and take a business view of the subject. With but one or two heifers it is easy enough to pet them into perfect docility, but this plan will not apply in large herds, when heifers must be caught up after they drop their first calves and handled while in a semi-wild state. The point to be accomplished is to teach her that you neither mean harm nor foolishness, but simply business. To accomplish this you must be reasonable, firm and patient: admit that she has not much sense; is unnecessarily fractious and foolishly timid. Prepare yourself to meet these failings with those human qualities which are apt to overcome them. The best practical method to accomplish this that we have ever seen was the following: Put the heifer in stanchions between two old, quiet cows. A strong man sits down to milk her just as he would an old cow. She is not apt to make flank movements because those old cows are there, and she has a wholesome respect for them. When she lifts her foot to kick, the strong left arm of the milker meets the blow half way, and it returns immediately as though nothing had happened. In fact, the milker should proceed just as if he had milked her a thousand times, and pay no more attention to her gyrations than is necessary to protect himself in the prosecution of his work. With this treatment, she soon learns there is nothing to be gained by opposition, and quietly submits. The best regulated dairies are those where the cows are treated with firmness, made to know their places, and keep in them. A cow is as easily spoiled with over-indulgence as with too harsh treatment.

An exchange says: Whence comes the yellow color of butter? Every dairyman knows that the June butter from pastured cows has the best color and the best flavor. If we search for the cause of this, we cannot give any other reason for it than the freshness and maturity of the grass, which is then in the best stage of nutritiveness and luxuriance. The verdure is the deepest and the aroma is the most perfect. But whence comes the yellowness of the butter, although the grass may be the greenest? When we look into the greenness, we find the clue. The green color of vegetation is due to chlorophyll, a composite substance which is found in the form of minute grains attached to the walls of the cells of plants. This word means literally the green of the leaf. Chlorophyll is dissolved out of the plants with the fat or wax when treated with ether. By treatment with chlorhydric acid it is decomposed into two coloring matters, a yellow and a blue. Now the acid of the gastric juice of the stomach of the cow is in part hydrochloric acid, and this is able to separate the yellow coloring matter from the chlorophyll of the herbage. This then is most probably the source of the color of the butter. We are led to this conclusion by the fact that the "green of the leaf" is lost in the ordinary process of curing hay and fodder, and that yellow butter cannot be made from this discolored food, nor from grass, even, which is immature or over-ripe.

A Problem for Dairymen.

The *Mirror and Farmer* in a recent article says, "There is no class of farmers so much in doubt as to their future position as dairymen." Why this should be thus seems very difficult to discover. It may be the case with those dairymen who, like many farmers, are constantly on the shift from one thing to another; from butter to cheese; from cheese to milk; from milk to butter again; perhaps trying a little oleomargarine in their butter; always changing, excepting for the brief moments when they are at a loss what change next to make. "Unstable as water, he shall not excel," was written for such a man as this. But the dairyman, or the farmer, who has chosen his business, with the purpose of adhering to it and of becoming an expert in it, has no such doubts as those referred to. Food, of whatever kind it may be, so long as its quality is excellent, is always saleable; and mostly at remunerative prices. There are fluctuations in all industries. Prices vary, and the production sometimes outruns the demand; but taking one year with another, there is a general average which is satisfactory. As a rule, those men who keep to their business, through good and bad, succeed in it. But unfortunately, there is too little persistence and perseverance, and too much desire for change, among farmers and dairymen. And it works to their disadvantage. A tanner never thinks of changing his vats from tanning to brewing or dyeing, because sometimes leather is dull and low in price. He bides his time and waits, not for long, until the change comes and the slow moving pendulum of time swings favorably for him. And so it should be for the dairyman. He should, however, make it a part of his business to produce goods that need not be forced on the market, as cheese is sometimes put on after 14 days' curing, and must be sold to save it. Perhaps this may be one reason why the changing market is more dreaded by the cheese maker than by the butter maker, who knows that his tubs may be put away for months and come out all right when the market is in a better condition.

Are Thermometers Trustworthy?

Thermometers are indispensable in the dairy. But to be of use they must be accurate. At the New York State Dairymen's Meeting, Dr. Sturtevant, speaking of thermometers, said, "They are not accurate. The difference is four or five degrees sometimes. Perhaps my experience with thermometers will interest some of you. Last spring I lost all my experiments on soiling because I could not get a thermometer. I wrote to different manufacturers for a thermometer, but, strangely, they had none on hand. The real reason was, they were all afraid to have their thermometers tested."

The Dairy, in reply, says:

"We are inclined to think Dr. Sturtevant is unjust in his charge against the makers of thermometers. It is possible to have one guaranteed by paying a few cents more for it. There is no secret about making them accurate. If the tube is accurately made and even in the bore, the marking will be correct. One can scarcely expect scientific accuracy for 25 cents, which is the cost of a common dairy thermometer. We have several in use in our dairy and experiment room. One costing \$10 registers up to 620 degrees and is a fine instrument, guaranteed correct. Another marking to 212° cost \$3; another common one costing 25 cents hangs just now at this moment with the other two, and all mark precisely the same, which is 82. An hour ago they hung in the dairy room and marked 62, all equally the same without any visible difference. An hour before that they were immersed in the Cooley creamery and marked 45 all the same without visible difference. The 25 cent instrument may therefore be accepted as correct. But these cheap ones will vary as above stated, but not so much as 4 or 5 degrees in our experience with a dozen or more. Two or 3 degrees is sometimes found. But to charge the makers with a guilty knowledge that they were selling useless instruments, or to give, as the real reason for their having none on hand, this guilty fear, is not charitable or even just.

If the cows leak their milk when coming home from the pasture at night, it will probably pay to milk them three times a day while the pasture holds good.

The Horse.

Promoting the Walking Gait.

F. G., in the *Country Gentleman*, says: This is the most valuable property in the gait of a horse for the farm, where nearly all the work has to be done on a walk. A horse that is a good stepper will do from a quarter to a third more work than a slow walker, and he will do it with the same ease, as it is his natural gait, and with proportionately less expenditure of energy; that is, the work will be done with less expense of food and waste of flesh for an equal amount of work. Then there is the ready action requiring no urging, and the celerity which hastens the finishing of the work, an important item where the work is crowding, as in the spring. Besides, both man and horse are free from worry. In making up your team, have it matched in gait as nearly as possible. The pair will work so much the better, whether fast or slow walkers. Of all things, avoid coupling a fast stepper with a slow one. Where thus united, the good horse will fret, and mischief may result to his gait and his temper. Gait is hereditary, yet, like other qualities of nature, it may be greatly improved by training, especially if begun in the colt. I have long wondered at the apparent indifference on this subject. Is it that the value of a walking gait has escaped notice, or that it is considered unworthy of attention, or incapable of improvement? As well say a trotting or a running gait cannot be improved. We have a quality here to be developed which is of far more value than the sporting qualities of the horse.

What the farmer wants, and what the teamster and drayman will not object to, is a good, strong walker. Such a horse is not lazy, and less likely to be an awkward or stumbling horse. He lifts his feet and puts them down well. There is no drag in his gait, as with a slow, shuffling or creeping brute. A good walker is usually possessed of some spirit. This is necessary to sustain his gait, if he is to become serviceable. It is also an advantage in his training, requiring little more than restraint to prevent him from breaking his walk. Beginning with leading the colt to halter as soon as he has the use of his feet well, before he gets accustomed to break, his walk may be readily improved and the habit after awhile established, if he is of tractable disposition. If, while running with his dam, he should, in his capering, get into a trot or run, it will not seriously affect his halter habit, or later on, his practice in the traces. Neither does his walking practice interfere with his trotting, which, during the course of the former, may also be indulged and improved. But let each be kept distinct for the time so as to secure an impression. The colt will soon learn to know what is wanted, and if properly encouraged will respond; if he is what he should be, tractable, intelligent and sufficiently spirited to carry out what is intended. If awkward or stupid, he is not worth the trial.

In the absence of a special trainer of colts, any man of intelligence who feels an interest in the matter and has patience and control of his temper, may be trusted to undertake the work. It is all the better if he be the owner of the colt. Not that he will succeed in a full development, but he is pretty sure to so far improve the value of his horse as to pay well for the effort, and it needs but little improvement to do that when the long service of the horse—some twenty years or more with good treatment—is considered. At first, lead your colt by the halter. Gradually increase his speed. Here will occur the greatest difficulty, through the eagerness of getting him advanced. By urging him too much he will break, and frequent breaking, becoming itself a habit, will antagonize and defeat what it is intended to promote. Patience, with time, is required, and it is the only way. The colt is to have his walk so gradually advanced that he does not become aware of it. When the colt becomes stronger and an advance has been made in its gait so that leading it becomes too much of a task, mount the mare and couple the young one with its dam. This still will accustom it to being paired and kept in place. The training to a walk requires as much exertion as applies to trotting or running. The exercise may, therefore, be more frequent and of longer duration, but must necessarily be mild at first and decided throughout, giving the colt to understand that you are its master, but a kind master.

If there is a better way than this let it be employed, for the advantages within reach here should no longer be ignored. The thing is to get it

started. It was not so with trotting, the possibilities of which were not known till a thorough test had been made, and the result surprises us all. The walking gait is in the interest of farmers. No excitement attaches to it as with trotting and running, which are sustained by the excitement. It is a matter of business only, and may be classed with farm improvements.

Why Stallions are Vicious.

A correspondent to a contemporary, upon this important subject, says:

Because there are four-fold more failures from the abuse of large sires than of small ones. I visited a farm where were a dozen small Morgans and two very large horses, one French and one English. Not a Morgan was for sale at any price. They were intensely eager to get rid of their elephants at any price. The French horse was sluggish and going blind. The English horse was deaf to all control and discipline.

And why? I know little of the ancestors of these individuals; but, from the practice of the region, it is safe to assume that their sires were shut up in small, dark pens for six years of their lives, and utterly ruined.

The grade draft, a dull, sluggish peasant of a horse, mopes his life away, becomes diseased in his joints, eyes and bowels, and too weak to sustain his own weight.

Then, too, the large, powerful, high-strung, English aristocrat of a horse, when tied in his den, takes exercise enough to keep him from rotting down; but he paws and tramps his droppings into fine dust, which irritates his ears and nostrils and eyes, and finds its way to the roots of every hair on his sensitive hide; poisons the air he breathes and makes his food disgusting. He squints through narrow cracks at distorted visions around. He listens in fright to strange sounds. He is in an agony of desire for exercise, air, sunlight and society. He is often wrought up into a frenzy of rage at his confinement. But when he is led out to the terrors and tortures of the blinding day, it is with a cart-whip fiercely used on his soft, tender hide, and around his jaw a steel loop, whose every touch is cruelty. Restrained, punished, terrified and maddened, he is again led back to the worse torture of his den, and there kept, year after year, until the horse has all gone, and a wild beast is in his place.

If the dams were made equally insane, the colts would break every thing to pieces, endanger lives, and be killed as wild beasts, as they are in Uruguay. The horse I spoke of often required all the time, strength and skill of a strong man to work him, and so he was dangerous and worthless.

The twelve Morgans, on the other hand, were sired by a horse whose recent ancestors had not a drop of sluggish or bitter blood, and who since he was three years old, has cultivated, with his mate, fifty acres of corn a year.

Always standing close to the horse, very agreeable and eager to go, he has done most of the extra work. To the village, to meeting, to mill, to market (seventeen miles), hunting, breaking colts, visiting; in all the work and pleasures of the establishment, he has claimed the lion's share of all that a horse could do, and has done it with a skill and pleasure only less than human. There is bred into him a high capacity and a perfect readiness to do whatever can be asked of him in the most pliant, useful and agreeable manner possible. His every muscle is developed until it seems rounded out into its own lines of beauty. And so inwrought are these characteristics that he transmits them faithfully to his progeny. And while they have neither size nor speed, yet are they so useful and agreeable that their owners soon learn to prize them at double their apparent value.

Ten small stallions are treated thus to one large one, and so their progeny are prepared for health, strength, docility, pleasantness and usefulness.

Like begets like; and so long as large stallions are confined in dark dungeons until they become swinish or wild beasts, and small ones are made useful and agreeable workers, so long will the results produce a general prejudice against the use of heavy stallions.

A. A. Antrim, veterinary surgeon, says that to determine whether a horse has the glanders, the discharge from the nose should be allowed to drop into a bucket of pure water, with an unpainted bottom. If the matter sinks to the bottom the disease is glanders, and the horse should be killed at once. In other diseases in which there is a discharge from the nostrils the matter floats in water instead of settling to the bottom.

The Physical Capabilities and Disposition of Horses Required for Labor.

To decide by the outward appearance of a horse on the latent qualities he may be calculated to possess, and what he will prove on continual exercise, is a perfection of judgment scarcely in experience to confer. Seven out of eleven instances are so likely to deceive that the most astute dealers are betimes mistaken. Much must be left to chance.

We venture to think the above remarks will stand the test of confirmation.

The willingness of a horse for labor, with the physical capability of accomplishing that which his energetic mind suggests, perforce must be allowed to be the two great essentials to make a good and enduring horse.

Horses that have performed great feats, in all probability, were endowed with these two qualifications—viz., *the will and the power*.

Not unfrequently have we heard gentlemen say, "Oh! the best horse I ever possessed was the worst shaped;" but such an observation could be no better than mere idle boasts, and on inquiry it would be quickly discovered that they were possessed of both *the will and the power*—these must be companions, for the one is of little use without the other. What avails it if he is *willing* without the power; or has the *power* and is not *willing*?

Frequently do we see in a field a horse fifteen hands high or under, fresh at the close of a long day and in a condition for continued labor, while the horse sixteen or seventeen hands is clean beaten and out of the combat before half the day is over.

How essential, then, must be this capability for labor?

Technically speaking, it exists just in proportion to the degree of nervous excitability of that portion of the brain and nervous system which influences the muscles of locomotion, and in all cases where this peculiar nervousness is to be found existing in a marked degree, there will also be found accompanying it a very peculiar formation.

This peculiarity is not easily described, but may be learned by careful and practical observation, and by that alone. The muscular and tendinous structure in such a horse will, in most instances, be beautifully developed, and in every case accompanying this formation you are very likely to have an animal of high courage or choleric disposition. Opposed to this you have a horse of a dull or phlegmatic temperament, whose external formation has a different character; his tendinous and muscular structure will be badly defined, he presents a faulty appearance, and you might style him a sluggish beast. Extraordinary doings are looked for in such an animal, his temper is inactive, his muscular powers limited, and he will generally show the "white feather" on slight exertion.

There are very many people in this world accustomed to horses all their lives, anxious to become judges, who can never select from appearances; whilst those differently gifted can tell a good one, to a considerable extent, almost at a glance. And the first questions that may suggest themselves to a judge on investing in the high mettled horse are: Can I ride him? Will he do as he likes with me? Can I get him under control, or will he stand the trammelling of harness? This subject is an important as well as an essential consideration to the breeder; that he should not be wholly taken up with either the shape or make of his mare or sire, but his best attention should be directed to the bottom, or in other phraseology, to the state of nervous excitability of that part of the brain and nervous system which influences the muscles of locomotion; for, after all, it is the power that moves the machinery.

If it were possible to mould a horse in a perfectly symmetrical form, in every way formed for speed; still, without that great essential, that peculiar nervous excitability, he would at best, perhaps, turn out but an indifferent animal.

The future of the draft horse is likely to be a repetition of the past. All who have investigated the limited supply and increasing demand for the past thirty years, are aware that the market in Europe and America for heavy horses has called for many times the number offered. The better specimens of draft horses sell readily for from \$250 to \$350, and much larger prices are frequently realized in American cities, with corresponding increase in European cities to cover risk and cost of transportation.

Giving Young Colts a Start.

The life and development of young animals is not so unlike the life and growth of a young plant or tree as many suppose. The latter has its physiological system, and the mode in which nutrition and growth are carried on in the plant is so closely akin to the same process in the young growing animal, that the principles of treatment found good for the one will not come amiss with the other. The plant has its circulation, so has the colt. The colt gets its growth through cell growth, so does the plant. The man who grows young trees knows full well that if insufficient nutriment is supplied, the growth will be both awry and stunted, the branches will be ill developed and crooked. From the effects of this bad start they never recover. The tree when growing and grown, fails to show the attractive appearance of the well-nourished and vigorous grower.

So, a colt may have inherited the right tendencies to grow shapely, but through nutriment being withheld, at the proper time and in the required quantities, the muscles and bones become spindling, the chest and quarters narrow, and the body lank. Every animal is, through inheritance, in the regular course, entitled to attain to a given size. Like a growing plant, if fed to its full requirements, from day to day its shape will be the most comely within the power of food to give it. But if its requirements are not fully met, no one can say what part or parts will grow different from the form to which it would otherwise have attained. Even development of all parts of the carcass, without, however, such high feeding on fattening foods as will render the spirits of the growing colt dull, and the body sluggish in its movements, is the point to be aimed at.

Crossing to secure size has done much towards creating certain kinds of horse stock that are greatly larger than the stock from which they originated. But this could never have been accomplished had not this breeding for size been practiced by men who fed well from the start, acting upon the truism that light feeding gives scant growth. While it is not expected that any man will attempt to secure a growth of twelve hundred pounds on an animal bred to have only ten hundred and fifty, when matured, still, as stated, the symmetry of such a horse depends largely upon his muscular growth having been pushed to a reasonable limit during the whole of his developing years, including his colthood, from the beginning. Full muscular vigor, ambition, and agility in his movements, cannot be secured unless he has been freely nourished and exercised. The exercise is undeniably an important factor; but bear in mind always that the colt will have neither muscular tone nor courage to stand up to his exercise, in the absence of full rations.

It is a common saying that a starveling colt, so called, grows one end one year, and the other end the next year. Certain it is that the insufficiently fed colt becomes weak in his digestion, hence does not make the most out of the food given. Not a little passes off through the bowels, thus robbing the tissues of their due. Exposure of the colt to inclement weather while yet of tender age enfeebles digestion, and interrupts the growth. No amount of pushing, so far as the feed is concerned, will avail anything while the disturbance from this exposure continues, but will, on the other hand, aggravate the difficulty. The old Scotch saying, that "the breed goes in at the mouth," while very far from being true, still shows quite clearly that the Scotch discovered the potent influence exerted by food in perfecting the forms of domestic animals. No people know better than the English and Scotch, whose very living depends upon their success with their domestic animals, that to be profitable and always in demand, they must be well nourished from the start.—[National Live Stock Journal.]

Suffolk Punches are in great favor in various parts of Canada. A contemporary says this breed is well represented in Ontario, and says it is deserving of more patronage than it has yet obtained. The sires are greatly preferable to the Clydesdales for crossing upon common farm mares in order to obtain the right kind of horses for farm work. They are almost invariably bright chestnut in color all over, with an occasional white star on forehead. They are strongly and stoutly built, with feet as sound as those of the thoroughbred, the texture of the hoofs being very firm, close and elastic. They are bred and raised to a considerable extent in the counties of Wellington, Waterloo, Oxford, and some are found in Brant and South Ontario.

Stock.

Stock, Young and Old.

Cows are now in the full swing of milk, save such of them as are timed to come in again in the autumn for the winter supply, and young calves are well on in the rearing. The period of the year is now on in which, the toil and anxiety of winter being over, the farmer's fruition of satisfaction is secured. This, however, is obviously contingent on things going on smoothly, on the absence of disease, and on the condition and prospect of pastures.

Ill-farmed land, like ill-conditioned stock, suffers most of all, as a rule, from nature's scourges, because it has so little strength to resist them with; and herein, as we suspect, lies one of the chief reasons why liberal farming should be encouraged. We cannot, of course, control the seasons, but we can do a good deal in the way of turning their influences into a profitable channel. It may be that the season throughout will not be a grassy one, though of this no one can pretend to know much beforehand; but, even if it is not, cake is cheap enough, and it is surprising how well dairy cows milk, and how much richer their milk is, if they receive it in addition to grass, even when grass is abundant. A man who systematically uses cake the year round, and has so used it for years past, has his land in a condition which hardly admits of over-stocking, and it will do more business each succeeding year.

We are advocates for the generous feeding both of stock and land. Within limits, and under the control of discretion, bovine stock, young and old, in-milk and out of it, will "pay for their bite," if the bite is a generous one; but when the bite is a niggardly one, the stock do badly, and the farmer remains poor. We do not believe much in fancy farming, but we have a good deal of confidence in that which is progressive, intelligent, practical and generous. The fault with many folk is that they either underdo or overdo a thing, and we hold by the intelligent medium. Dairy cows in milk want watching on the food question; they should have always enough, with nothing to waste. So long as they eat up cleanly with relish, and keep up in condition, the rest goes well enough as a rule. Lavish and parsimonious feeding are equally foolish and wasteful, and the man who succeeds is he who steers midway between these two with his stock. Both land and cattle should be made to produce all they conveniently can, even when produce is low in price; and when this policy is consistently pursued, the greatest advantage can be taken of markets when they rise.

Bovine stock of all sorts and conditions are so valuable that men cannot afford to treat them ill. Cows in milk were probably never so high in price as at the present time, at this particular season of the year. Young stock are dear in proportion. Grazing stock, too, like store and milking cattle, are still advancing in price, though beef retreating. Everybody who can is raising as many calves as possible this year, because for several years past this department has paid better than any other in dairy farming. This, of course, is an important step in the right direction, and will raise the number of stock in the country. It is hopeless, however, to expect to keep pace with the increase of population, so that the future is full of promise to the farmer. Young stock are raised more generously than they formerly were. It is now generally admitted that they must be kept progressing from their birth up. Specially compounded foods for calves are prepared, some of which are excellent while the calves are young, but for our part we think there is nothing like linseed cake after the first three months and up to twelve or fifteen, and it is the best preventative we know of against "quarter-evil"—a functional disease which is a scourge on many kinds of soil. A little salt once a week, and a free roam on warm land; through the winter a shed for shelter against the storms, may be regarded as accessories or supplementaries to the cake for the prevention of the diseases we have named.

Frequent change of pasture has a very beneficial effect. Where the grass is scarce the fattening animals will be greatly benefited by an allowance of cake, and will leave a very good return for the outlay. Two to four pound of oil cake may be given with advantage daily to each beast. The grass is enriched by cake-eating animals.

Holstein Cattle,

Or more properly called, *Dutch Friesian* cattle, are attracting great attention in all parts of the continent; not only from their enormous milk yielding qualities, which exceed those of any other breed, but also for their beef making properties, being of large frame with small bones, and are easily fed. This class of cattle has been in existence for upwards of 2,000 years, and still remain a distinct class. In the year 1282 the inundation which produced the Zuider Zee separated Friesland from the other parts of Holland, and it is from this part of the country that the purest bred animals are imported.

The preservation of the Friesian people and their continued adhesion to cattle breeding for so long a period is one of the marvels of history. The farm houses are mostly immense structures, one roof covering everything that requires shelter, and here the cattle find protection during the long and rigorous winters, and are fed and watered for months without being turned from the doors. Being kept so close to the dwelling place of the

cows became particularly noticeable. They appear to be a hardy class of animals and are especially adapted to low pasture lands. We understand that there are, at the present time, about 100 head of this class belonging to these gentlemen now undergoing quarantine at Point Levis for our American cousins, and we believe that opportunities will be given to Canadians to obtain some of them before they are shipped out of the country, which we believe will be about the first of September next.

The cow in the centre of our engraving represents Jessie L., whose dam as a 3-year old has a record of 67 lbs. of milk per day, and her grand dam 85 lbs. of milk and 3 lbs. of butter per day. The other cow is Mima 2nd. Although only 23 months old, gives at the present time 43 lbs. of milk a day. The herd consists of 10 cows and 5 bulls, imported by B. B. Lord, of St. Clairville, N. Y.

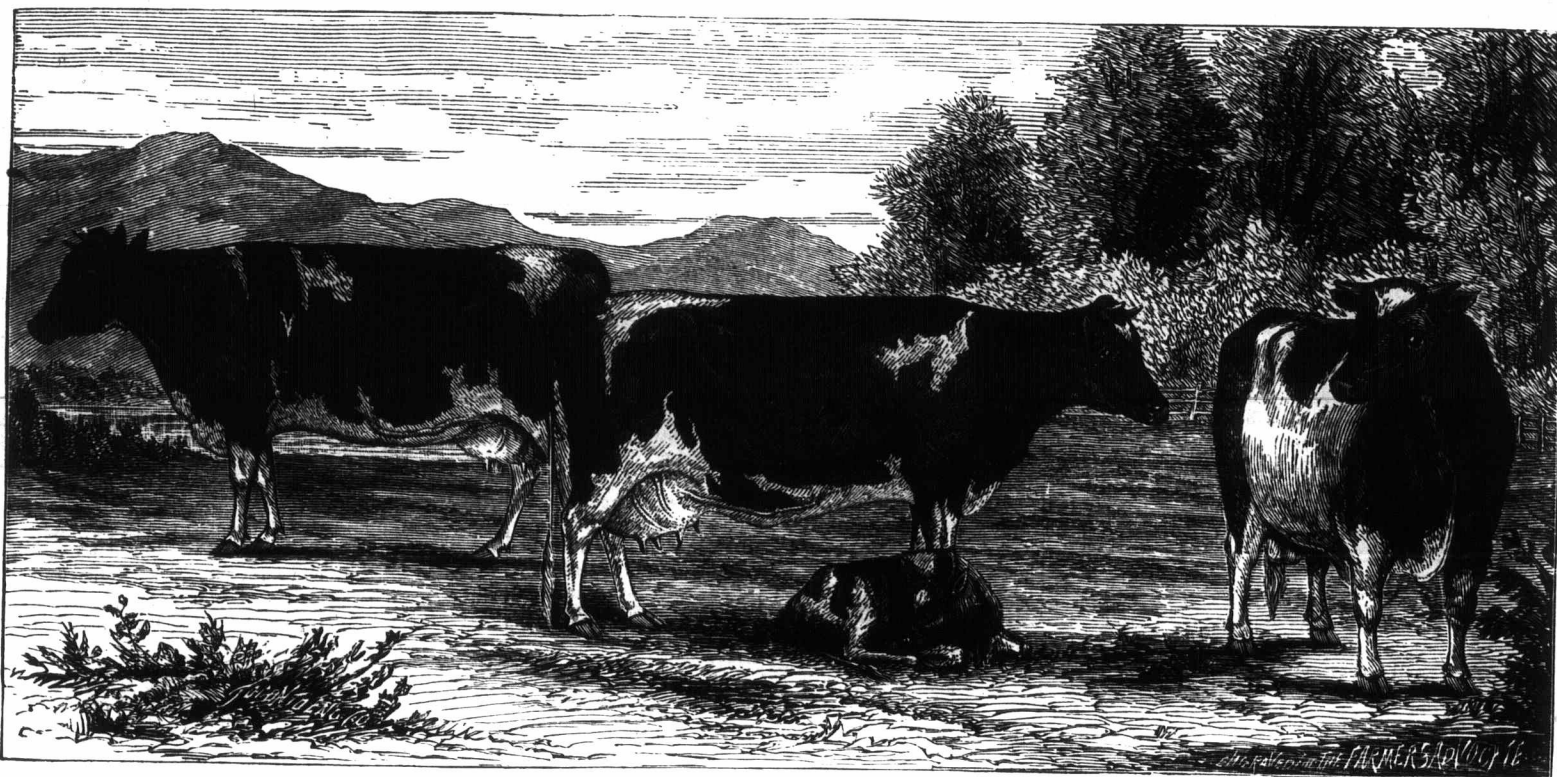
Summer Pasturage.

Pasturage is always plentiful in spring and summer, but there is often much neglect in the manner of pasturing stock, not on account of the stock, but the pasture. Pastures are not permanent in-

Selecting Animals for Breeding or Use.

The art of accurately judging animals, of selecting the best for a given purpose, is of incalculable value to the breeder, but one difficult to acquire. Experience is an essential to success, but great practice does not necessarily insure skillful judging. Some men acquire skill in this matter much more readily than others. Some seem unable to make the fine distinctions necessary to great success. Some allow themselves to be too much influenced by prejudice or by some striking merit or demerit.

Of course it is an essential that one fix upon a standard of judgment. We must know what we want of an animal before we can wisely select. If one is to select breeding stock of any well-established breed, he must, of course, be familiar with the peculiarities of that breed. But we have little confidence of the best results from an attempt to select by rigidly applying a "scale of points" with fixed numbers to indicate the value of each point. Such scales have their value; chiefly, as we think, in helping young breeders to familiarize themselves with the characteristics of breeds or classes of animals. They help train the eye and mind to see and think of little points which might otherwise be unnoticed, but we cannot advise either the awarding judge at a stock show, a



HOLSTEIN CATTLE.

family, the cattle become great pets and are kept scrupulously clean, and everything is kept with a degree of neatness marvellous to those unaccustomed to such a system. When spring opens and the grass is sufficiently long, they are put into the fields and cared for in the most quiet manner, dogs never being allowed to go near them.

It being supposed that the animals in North Holland have been crossed with other European breeds, hence some of the cattle from that district are red and white in color, instead of being black and white. Only animals of the latter color (Piebald) can be entered in the Dutch Friesian herd-book of America. For some time Holsteins have been bred in the United States, but it is only lately that they have been introduced into the Dominion. Messrs. Cook & Lord, of Aultsville, Ont., own one of the principal herds in Canada. Last year they imported 10 cows and five bulls. Messrs. Cook & Lord for many years have been engaged extensively in the dairy business, keeping Ayrshire cattle, but seeing the superiority of the Holsteins they are now changing to that class. When looking at this herd, the large milk veins and udders of the Holstein

stitutions on every farm. In fact, a heavy, thick growth of grass is quite a desideratum on nearly all farms, being hard to procure, but one-half the failures are due to the improper system of turning the stock upon the pasture before the grass has attained that degree of growth so essential to success and profit. The summer season is a trying one to pastures that are located on dry places, utter ruin sometimes being the result of a long continued dry spell. It is also just the same when the cattle and other stock are permitted to do as they please upon a pasture, which is almost as detrimental as dryness. During drought cattle should be kept off of pastures for a little while, and if a substitute is desired a few acres sown in peas, mixed with corn, will not only serve as a change to the stock, but gives a period of rest to the permanent pasture that shows its good effects till the following year. One of the principal objections to sheep is close grazing, yet sheep cannot hurt a thrifty pasture, but let a dry spell of summer occur, when no rain falls for six weeks, and the sheep will hunt out whatever there is of young green material, and between them and the cattle the pasture will be injured.—[Exchange.]

There is occasion for raising more heifer calves. Cows are high all over the United States, owing to scant supply. The increase in total number is not keeping pace with increase of population.

buyer at a stock sale, or the farmer in need of a good animal for practical use, to arm himself with scale, paper and pencil, and decide by the footing of his columns of figures.

That we, properly enough, call fancy points, must be carefully considered in selecting pure-bred stock. As a matter of fact, most judges find themselves instinctively looking for these at first glance—or the absence of them is detected almost at first sight. A black nose on a Short-horn, or a flesh-colored nose on a Jersey will at once arrest the attention of one familiar with these breeds; perhaps more readily than a deficiency in some point of much greater intrinsic importance. Such minor matters cannot be ignored when they have become fixed characteristics of a breed or class. A Clydesdale horse may be none the more valuable for a heavy feathering of hair on the legs, but we regard a clean-legged horse with some suspicion if he be shown as a pure Clydesdale. No one would choose a Galloway bull with fair-sized horns, although he might regard the hornlessness of the breed as one of the most unimportant of their qualities. In the show ring, or in selecting animals to breed from, it is quite right to give careful scrutiny to all points which are properly recognized as belonging to the breed.

Nothing, however, should be allowed to outweigh the substantial, useful qualities by which the class should be characterized, regardless of breed. There are well-established qualities common to all good

heavy draught horses; all beef breeds of cattle have common characteristics; all good hogs resemble each other in important particulars.

We count it fully as important to look for defects as it is to look for excellences. "Select the animal with fewest defects" is probably a safer and better rule than "select the animal with most good points." There is always danger that some showy and desirable characteristic may so attract one that several somewhat serious defects may be passed over. That hard-to-be-defined thing, "a fine style," may make one overlook comparative weakness in a half-dozen points. Some animals favorably impress one at first sight, yet may have only moderate excellence; while other animals, at first sight unprepossessing, are found to be "good all over" when examined in detail. High condition, good training, skillful showing have much to do with the impressions made, but little weight in deciding real merit.—[Condensed from Breeder's Gazette.

A West Highland Cow.

Our engraving represents the famous West Highland breed of cattle—a breed, the picturesque beauty of which has been immortalised on canvas by the artistic productions of Rosa Bonheur and Landseer, and which has so often furnished forth the savory roasts that have graced the feast of British Baron and Highland Chief. It is a hardy race, rather slow in coming to maturity, but furnishing probably the very choicest meat of any variety of the bovine family. The breed is but little known in this country. Mr. Geo. Whitfield, of Rougemont, P. Q., Canada, in pursuance of his plan to test the adaptability of all the various breeds of cattle in the old world to the conditions of the new, has imported several of them. Persons who have seen this heifer are struck with her

By the Way.

Allow no evil weed to go to seed.

Do not try to milk too rapidly. Many cows, or especially young heifers, are injured by the rude grasp of some strong-handed farmer, who takes pride in milking rapidly.

Yes, you now regret not saving ice.

Probably the means used in France against the root-infesting phyloxera would break up nests of ants. A few holes are punched and some bisulphide of carbon poured into each. This is an inflammable and explosive liquid; probably carbolic acid would answer; or short sticks dipped in gas-tar might be thrust down the holes, which can then be filled with sand.

Dr. Maxwell T. Masters writes that he has often seen the experiment tried of thinning potato tops by pulling out all the smaller stems, leaving only two or at most three of the stronger ones to the



IMP. WEST HIGHLAND COW, MAID OF CASTLE GRANT, PROPERTY OF GEO. WHITFIELD, LOUGEMONT, P. Q., CANADA.

A farmer has a Jersey cow which is a trouble to him. He has had the cow served by a fashionable bull at the cost of \$200, and if she has a heifer calf the owner of the bull is to give him \$1,000 for the young creature. If the calf should be a bull, it will be worth, perhaps, \$50. The owner is enjoying all the excitement and fun of an investment in a lottery without violating any law, but his sleep is not sound or sweet.

Have you sown any corn for fodder?

Rape is a very useful crop for feeding sheep at the tanning season. It should be sown in rows on a soil prepared and manured as recommended for turnips. Four or five pounds of seed per acre will be sufficient if sown in this way. It is sometimes, however, sown broadcast; in this case, the farmyard manure must be plowed in with the seed. Ten or twelve pounds of seed per acre will be required when the crop is put down in this way. The drill system is preferable for many reasons; a very important one is that the soil can be cultivated between the rows in the same way as any of the root-crops.

Care well for your men and teams.

picturesque beauty and true proportions. Her horns long and gracefully curved; her ribs sprung almost as round as the hoops of a barrel; her flank as low and her hind quarter as long and well filled out as a model Shorthorn. She looked to us the very embodiment of the model beef form. Her color is a light dun, and her hair, fine, and silky, and was, at the time of making this sketch, about eight inches in length all over her body. The picture given herewith is a faithful likeness, without the least particle of exaggeration.

We know of no better preventive for sore shoulders on horses than bathing well with salt water after the harness has been removed.

W. A. Reburn, Ste. Améde Bellevue, Que., reports that his Jersey cow Jolie of St. Lambert 5126 made 15 lbs. 13½ oz. in the seven days ending May 8th. In addition to oats, straw and hay at noon, and corn fodder at night, she received from three to four gallons of ground oats and shorts, and one pint of boiled linseed per day.

hill, and never knew an instance where the result was not larger tubers and frequently a heavier total crop.

The length of time that a young heifer keeps in milk after her first calf is likely to measure her staying qualities for all after life. For this reason young heifers should have their first calf in the fall. By good care and ensilaged food in winter an abundant flow can be established, which can more easily be kept up the next summer. If heifers calve in the spring they are very liable to go dry early in the next fall.

BIGGEST RANCH IN THE WEST.—Duncan McEachren, of Montreal, left a day or two ago for the Bow River ranching country. He will establish the largest ranch in the Northwest. It will be located near the international boundary, and will be on a much more extensive scale than the Cochran ranch. Mr. McEachren is acting for an English company, which has a capital of \$1,000,000. He goes to Fort Benton, thence he will drive across 5,000 head of cattle, and where he will also take charge of two car-loads of English thoroughbred bulls and one car-load of brood mares, which were forwarded to await his arrival. Mr. McEachren will spend the summer in the west.

The Flower Garden.

The Lily of the Valley.

Convallaria majalis.

Since fashion has decreed that this long neglected, charming little spring flower, with its snowy, fragrance-spreading bells—"May-bells," as the Germans call them—shall be fashionable, an enormous impetus has been given to its cultivation. But this perfect emblem of purity and modesty of the floral world did not require the dictates of fashion to be held as a treasure by all true lovers of flowers since time immemorial, although to many a florist it may have brought, according to the language of flowers, a true "re-tour du bonheur."

The Lily of the Valley grows wild throughout Europe, in rich, damp woods, under the shade of deciduous trees. It succeeds splendidly in cultivation, if conditions similar to those under which it grows naturally are provided, and its roots are not disturbed for several years.

In making new beds a partly-shaded situation should be selected, where the ground is not traversed by the roots of growing trees. Unless the soil is naturally rich and deep, it should be dug thoroughly to a depth of at least twelve inches, working in at the same time a good quantity of decomposed manure, and if very heavy, some sand and leaf-mold should be added. If old clumps are at hand, these should be divided before replanting; the roots sold in seed stores are generally already divided into single crowns or "pips," which is the technical name for them. These are usually set out in rows, about 12 inches apart and 6 inches in the rows. The crowns should be about two inches below the surface of the ground. They may be planted in the fall or in the spring, but most growers are in favor of fall planting, as at that season better plants may be obtained. When the ground freezes, a light coat of decayed manure and some mulching material should be scattered over the bed. During the first summer the rows should be hoed and kept free from weeds; afterward the plants will take possession of the entire ground.

Forcing Lilies of the Valley forms an important branch of floriculture near our large cities, and this art has reached so high a state of perfection that flower-spikes are now seen in florists' windows throughout the entire year. The roots used for forcing are nearly all imported from Germany, where immense quantities are grown at small cost. As soon as the "pips" arrive, they are placed closely together in shallow boxes, which are kept in cold frames, where they can be protected against severe freezing. After about four weeks those wanted for earliest blooming are removed to a forcing-house with a temperature of about 50 degrees, which is gradually increased to 80 degrees.

For window and parlor culture Lilies of the Valley may be forced as easily as any plants. The "pips" should be planted in pots at any time during autumn, six to eight to a five or six-inch pot. Ordinary potting soil should be used, and pressed firmly around the crowns, which should stand slightly above the surface. The pots have to be kept out-doors for a month or more, plunged in sand, and sufficiently protected to prevent their breaking by frost, although the plants themselves are rather benefited by being exposed to freezing weather, provided their crowns are covered with moss. About a month before they are expected to bloom they should be brought to a warm room, and gradually watered more copiously, as they grow.

The method of forcing Lilies of the Valley practiced by German florists is to plant the single crowns in a well-closed bed of pure silver sand or finely crushed coke, in a propagating-house which can well and easily be heated. The bed should have a constant bottom heat of from 60 degrees to 95 degrees. The roots of the crowns are trimmed off to about three inches from the top. The "pips" are then planted about one and one-half inches apart each way, and closer if room is limited. Water is given plentiful, and never colder than 85 degrees. The bed is kept dark, and covered until the buds are fairly started, after which light is admitted gradually, and when two-thirds of the buds are in bloom, the flowers are hardened by giving still more air, and finally removing the cover entirely. In order to keep up a constant supply of flowers, a quantity of crowns are planted



THE LILY OF THE VALLEY.

every two weeks.

To preserve the "pips," they are kept out doors, covered with six to twelve inches of soil, as it is found that they force better when the ground around them has been frozen. It is not advisable to begin forcing Lilies of the Valley before the end of November, as it has been found that those forced previously produce not over 50 to 75 per cent. of blooms, while those forced later give flowers from every crown.

When the foliage of bulbs after flowering begins to decay, the roots should be taken up and placed thinly on a shelf in a cool, airy shed to dry. When the stalks part freely from the bulbs they should be removed, and the bulbs stored thinly on shelves in dry sand. They will keep sound and plump until autumn, and then the loose scales and old roots may be removed.

To Keep Verbenas in Blossom.

We take the following from *Vick's Magazine*:—"To keep verbenas in good flowering condition during the season, pick off the seed-vessels. When the flower fades, the strength of the plant goes to the seeds; and, if they are permitted to remain, the number of flowers will become less and less. I once had a beautiful bed of verbenas that bloomed well for a time, and then gradually produced fewer flowers. Thinking it might be the maturing of seeds that had checked the flowering, I commenced cutting away the stems of the fallen flowers, and continued until I had nearly filled a milk pan. In a few days that verbenas-bed was a blaze of brilliancy. I continued to remove the faded flowers after this, and they bloomed until November. The first Sunday in November I cut a bouquet of verbenas for a sick friend.

Native Ferns.

Few plants give better satisfaction in out-door culture than many species of our native ferns. The grace and delicacy of their finely-cut foliage make a charming contrast to flowers and gaudy-leaved plants. Some of the larger species are desirable for back-grounds, or if one has a suitable soil and location, they give a pleasant effect, either in clumps or as single specimens. The native ferns of any locality in the North are not numerous. About 25 species are all that ordinarily grow in one neighborhood. In prairie countries the number of species is very small. Of these 25 species probably less than half will arrest the attention of the casual observer. These conspicuous species are usually such as grow in damp, shady woods and thickets, and are almost all easy of cultivation if one has a suitable location for them. Those species which grow on rocks and dry, sunny hills, are usually not worth cultivating. They lack the grace and beautiful fragile texture of woodland ferns.

Most of the ferns lose much of their beauty if exposed to winds which whip them about. For this reason it is not generally desirable to plant them by a corner of a building. Ferns should also be screened from the sun. They usually do well if planted to the north of a clump of trees on a wall or building, especially if the force of the wind be broken near the surface of the ground. They also require a soil rich in vegetable mould. This character can often be imparted to the soil by means of dead leaves brought from the woods. Water the plants freely; if the foliage is often wet so much the better. A light mulch of decaying leaves or some similar substance is often a convenient means of retaining the moisture in the soil. If the ferns be planted in the sun, a screen made of leaf-covered boughs placed on a rustic frame four or five feet or more from the ground, is desirable for protection.

Most ferns bear transplanting well, if a large piece of earth be moved with them. They can be taken from the woods at most any time of the year, if they are removed to a damp, cool, shady place. They are easily transplanted in summer. Even our hardy species should have some protection in the winter in the form of a covering of leaves, or some similar substance. When the plants are established in the garden they should remain undisturbed. They should not be hoed or the ground about them much broken. By observing the conditions under which they grow best in the woods, any one can succeed in making a beautiful display of ferns.

Peter Henderson finds that ants eat the flower buds of roses. To drive them away, he ties sponges soaked in paraffine around the stems of the bushes.

Fruit Garden.

Seasonable Hints.

THE CURCULIO.—It is worth while repeating at this season the remedy devised by Mr. A. McD. Allan, of Goderich, and pronounced by him to be entirely successful. With a large syringe or hand force-pump spray the trees with a weak solution of Paris green in water, just as the fruit is setting. Trees thus treated have ripened a full crop of plums, while those just adjoining and not sprinkled have hardly had fruit fit to eat. This is within the reach of everybody and too easy to be neglected.

It is very unsafe to prune, manure or cultivate pear trees very highly during midsummer, especially if they have been previously neglected. Any unusual change in the habit of management is apt to result in blight, and especially where greater supplies of food and decrease of foliage go together. Manure may be applied safely in fall and winter, and all the cultivation given should be early in the season.

Sheep are one of the best kinds of stock to keep in orchards. After a little practice they will pick up fallen fruit quicker than hogs, and this is often very important, as the codling moth worm generally leaves the apple soon after it drops. But, with either sheep or hogs, sufficient food must be supplied or the trees will be barked. The extra feed thus given goes, however, where it will do the most good, in the production of the largest and fairest fruit.

Bagging Grapes.

By this process we gain partial exemption from rot, and more or less exemption from birds, &c., and complete exemption from sun-scald. The process, however, retards ripening; but tends to preserve the fruit from injury by wind and frost. In climates where rot in the berry is to be expected, they should be bagged when the fruit is not more than one-third grown. Further north, defer the operation until the grapes commence to color, so as to hasten ripening. Grapes in bags may hang until after heavy frosts. Then, if picked and stored with the bags on, in a cool place, they come out during winter ripe and more delicious than by any other process. Good—not thick—manilla paper is best. The bags should be slipped over the clusters, folded and pinned close around the stem so as to exclude rain. The vines should be managed so as to develop large buds to obtain clusters worth bagging, and all small clusters should be cut off.

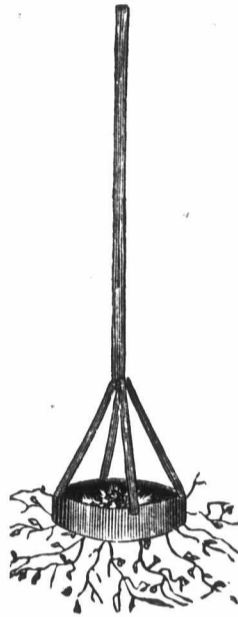
A cluster of grapes enclosed in a two-pound manilla bag, is completely protected against the germs of the fungus, the sting of the grape curculio, the depredations of birds, and safe from those deposits of insects and the elements injurious to its integrity or perfection. Concord clusters treated in this manner have been gathered as late as Nov. 24, and as perfect in all respects as could be wished. In fact, they were too perfect—too delicate—and this is one of the objections to the use of bags. The skin of the bagged grape is so thin and tender that the fruit will not bear transport to any considerable distance. Nor will it keep long after exposure.

Thinning Out Fruit.

This work can scarcely be extended beyond the garden, and even there it can be performed only on not over-large trees. The pear is especially needed to have this operation performed, and it should be done at almost any time now, the sooner perhaps the better, and the stunted, or imperfect surplus growth removed. Care should be taken to thin out the clusters, as the fruit seldom does well where the specimens touch each other. For some reason the insects are sure to attack the fruit in clusters, and instead of only one falling a prey to their operations, two or three will be included. A small scissors, such as is used in thinning out the bunches of grapes, answers very well for this work, but with care they can be pinched off with thumb and finger. When pears and apples have attained about one-fourth their size they should have a second thinning out.

A Strawberry Trimmer.

This strawberry trimmer is made of a hoop 2 or 3 inches wide, and about 3 feet long; the ends lapped by with a set screw. This hoop is of saw plate, the lower edge sharpened, while to the



upper are attached thin straps of iron, which unite to a wooden handle about 5 feet long. One downward stroke with the machine removes all the runners from the plant—like cutting out biscuits with a cake cutter; and it is much less fatiguing than stooping over and blistering one's fingers with shears.

Horticultural Hints.

BY T. C. ROBINSON.

This is the time when many people injure next year's strawberry crop by allowing the newly set plants to mature fruit now. To realize the philosophy of this fact, observe the free actions of an ordinary late set plant of Wilson, or some common sort that you don't care much about. See, after a good rain, how the blossom-stem shoots up strong and vigorous above the spindling foliage; how wide and clear the blossom opens, and how surely the fruit sets and goes on through the various stages of growth towards ripening. But when the few stray berries are picked and relished, what remains? A wretched dried-up apology for a plant, that seems little advanced in size since planting. Compare it then with a neighbor plant from which the blossoms and runners were promptly removed: the leaves numerous, healthy and large; the roots far spreading through the soil, and the crown from which the foliage springs, large, well developed, and stored with the conditions for large fruit production next year. Why these differences? The fruit-stem, if remaining, has the strongest attraction for the sap. The mutilated roots of the newly set plant can only furnish a small supply of the vital fluid, and when most of this is absorbed by blossom and fruit, of course new leaves and roots cannot properly develop. Moral: Nip off all blossoms and all runners at first, as they are abortive blossoms with almost equal power of appropriating the sap.

RASPBERRY AND BLACKBERRY

patches often suffer from similar causes. Notice that the young growth of this year keeps the stalk fresh and moist, by returning downwards to the root a certain portion of aerated and matured sap—hence the strong root-growth of plants that make strong shoots and do not have to support any of last year's wood. Notice, on the contrary, that the fruiting wood (of last year's growth) keeps all the sap it ever gets. If it returned any to the roots, like our common fruit trees, then the descending fluid would keep the bark moist so that the cane might have a chance of living another year. But no—it puts all the sap into fruit-stems and fruit, with just enough leaves to mature the sap for forming fruit by bringing it in contact with the air. And so the old cane must die as soon as the fruit is ripe—it has returned no sap to the roots, and it is withered and dry.

Yet we would like very much, perhaps, to get a few berries to satisfy our curiosity a little respecting a new variety. Two rules then may be in order, adapted to differences of growth: First,—Select the

most vigorous growing plants you have in the new strawberry bed, without reference to their relative size when planted, and leave one fruit-stem to produce berries. As long as new leaves are being continually pushed up from the crown, you may let the berries remain, but if at any time you fail to find on the plant any leaf bud pushing up or just fully expanding, then you must remove the fruit stem with its cherished load if you care to save the plant for further use. Second,—About a foot of old raspberry or blackberry stem may be left to fruit, if a vigorous young shoot is pushing up from the roots, and even if this young shoot should seem to make little growth after a time, the fruit may still be allowed to mature if the young shoot has reached a foot in height.

But a noteworthy point in raspberry culture—both of red rasps, and blackcaps—is that whenever a shoot starts from the old cane, within say a couple of inches of the ground, it is apt to grow like a young shoot at first, but almost invariably bears the same year, only later in the season. This tendency to shoot forth from near the base of the old cane is stronger in some varieties than in others, but it seems present more or less in all. Now, if much of the old cane is left, of course the buds at the top attract the sap, and these lower sprouts do not develop; but if the old cane is cut to within four to six inches, these adventitious buds must be more likely to push, and as the growth they make partakes more of the nature of a new fresh shoot from the roots, in keeping green and sometimes living a second season after bearing,—so it may be allowed full liberty, and on account of fruiting later than the ordinary season, will take the sap when the roots from previous growth are better able to stand it, and hence, too, it will bear far more berries and afford a better test of the variety. Here's your chance, then; whack off most of the old cane, and if the basal shoots should push and fruit, you can rejoice in testing the fruit; and if not, you will know the plant was not strong enough to bear, and be pleased that you did not permit it to weaken itself—perhaps to death—by fruiting.

Reasoning by analogy from raspberry canes to plum trees, can it be possible that some gems of our orchard perish after a large crop in a dry season, from the same cause that leaves the old raspberry canes dry and worthless after the crop has vanished? That the whole supply of sap provided by the roots is retained to mature the fruit, leaving the bark to dry up, so that when the generous fall rains replenish the sap, it finds it impossible to pass through the desiccated cells next the bark? We know that sap can go up when the bark is dry and the trunk the color of mahogany—as witness our pear trees when struck by "fire-blight"—but we know that it cannot come down. As the roots cannot grow and live without a supply of sap which has been exposed in the leaf tissues to the air and sunshine, it follows that the tree that allows the bark to dry through a period of say a month or six weeks, is fairly throttled and must give it up—root and branch—unless the roots send up sprouts. The roots are apt to sprout, but that is poor consolation for the owner of a grafted tree!

A clear illustration of this sort of thing occurred in my experience. Eight or nine years ago a couple of fine young Astracan trees were completely girdled by mice in a very snowy winter, for about a foot in length of the trunk near the ground.

We all know the vigor of the Astracan; how it will struggle along against adverse conditions that many varieties of apple would die under at once. Well, the trees referred to sustained well the reputation of the variety; they kept alive two seasons with small sickly foliage, and even ripened a load of small, early maturing fruit—a poor caricature of the Red Astracan. Finally, when one had given up, with withered leaves, and the other seemed ready to, I chopped them down where the bark was gone. Not a drop of sap could have passed along the outside of the trunk for a foot or more; careful bandages of cow manure having proved ineffectual to coax the descending sap to bridge the gap where the bark was gone. The wood seemed about the color and dryness of a common dinner-table leg, but the first blow of the axe brought to sight the green wood inside, saturated with sap—the thin and watery sap that could not keep the roots alive—while the matured sap was struggling to descend next the bark above the wound.

All this may have nothing to do with the pear blight, for our savants say they find fungous growths developing in the sap of diseased pear trees. But I notice that whenever the leaves of

one of my pear trees blacken up with the blight, I can always find a place on the branch or trunk, below the affected leaves, where the bark and adjacent layers of wood had been entirely dried up by some means long before the leaves began to discolor.

Facts like these ought to lead to useful conclusions. In regard to plum trees, at least, it is safe to say that before we conclude that a wasting contagious "yellows" is putting in its unwelcome appearance, it would be well to try whether thinning the fruit would not, by permitting a portion of sap to descend and moisten the trunk, restore the balance, and tend to give our trees a lengthened life of usefulness, to which the plum seldom attains.

About this time look out for "rust" in blackcap and blackberry plantations, and curl leaf among red raspberries. These are things you must not expect to hear nurserymen say much about—lest it should hurt their plant sales. The truth is these diseases are very prevalent throughout North America; you will find even wild plants affected, and no doubt they help spread the trouble. On good soils you can easily keep down both diseases if you are prompt with the remedy, which is entire destruction of the canes or plants affected. The "rust" shows itself by a gradual yellowish tinge outshading the green of the foliage till it becomes almost orange in color. The curled leaf is rather harder to detect; but notice if the leaves of any shoot are small, dark green, with a crumpled up appearance, and chop it out at once. On examining the roots you will find them darker than the healthy sample and devoid of fibres. I had never noticed this disease, or heard it described, until I saw it, alas! on my Cuthberts, and then open-eyed research showed it on the wild raspberry in all directions. I suspect it is the same as the disease that has cleaned out the Hudson River Antwerp from its native nooks. There is no other cultivated variety that I remember seeing it on; but if experts would tell all they know, we might learn of other varieties subject to the disease in older settlements, where such things always come first. I regret that so fine a sort should be singled out for attack; but even with this drawback, I consider the Cuthbert as the finest red raspberry for all purposes yet tested.

Small Fruits.

BY IRA VANDUZER.

In the first place we must confine ourselves to few varieties only, for were we to follow berries wherever we find them, they would lead us from one country to another until we had travelled the world over, for we find in studying that there are berries of some sort, not only in every county of this fair Canada of ours, but in every continent on the globe. I will, however, confine myself to a few of the kinds that we are most used to seeing and growing in this part of the country, such as strawberries, raspberries and blackberries.

I would like now to ask you all a question. What is more delicious or satisfying to the palate than a good dish of ripe strawberries with plenty of sugar and cream? or even the berries alone without the sugar and cream.

This question I will leave for every person to answer themselves as they think best. For my part, I think there is no other fruit grown, the ripening of which is more anxiously looked forward to, or more heartily greeted, than the strawberry. The strawberry is the first fruit of the season, and therefore is one of the most valuable fruits, and it is welcomed most unanimously by everybody; and to get into a good strawberry patch at picking time is apt to make one think that they had found the "promised land," and generally changes the visage of our long-faced, sour-looking people into a broad smile of appreciation.

Of the strawberries, we grow the following kinds:—Willson's Albany, Crescent Seedling, New Dominion, Col. Cheny, Monarch of the West, Glendale and Sharpless; and were I confined to one kind only, I would still stick to the old Willson; but as it is, we need them all, some for early and some for late. We are trying some other varieties, such as Manchester, Finch's Prolific, Bidwell and Early Canada, but have not fruited them yet and therefore can say nothing about them for experience. I think, however, as far as I can judge from reading, that the Early Canada seems to be doing well about Jordan—where I believe it originated—and if it continues to prove as good in other sections it will be very valuable indeed as a good early strawberry, and is what we most need at present.

We fruited the Sharpless last year for the first time of any account, and I must say that I am well pleased with it, as it gave a very fair crop—considering the chance it had—and the fruit was exceedingly large and fine, and brought a high price in the market.

We plant entirely in the spring and grow in the matted row system, never picking more than two years and sometimes only one.

The raspberries comes next to strawberries in ripening and I think next in usefulness. For reds, we are growing the Clark, Franconia, Brandywine, Turner and Philadelphia. Of these five kinds we have grown the Clark mostly; it is a very fine berry, but a little too soft for shipping long distances. The Brandywine, I think, is a very fine berry, not very large, but a good bearer and exactly opposite from the Clark, as it is very firm and seems to stand shipping almost any distance; in fact I think it is about the best keeper and shipper that is known among the red varieties. The Franconia is a very good berry, but we have discarded it entirely as it will not stand our winter, but freezes down badly. The Philadelphia is another kind that we have dropped for market purposes; it is very prolific, but is not the right color to sell well in the market, although I believe there are a great many of them bought at factories for making jellies, etc.

We are also starting other kinds, such as Lost Rubies, Cuthbert and Highland Hardy, of which I have had no experience, but as far as I can gather from good responsible people, the Cuthbert is very well liked, and is likely in future to stand about first among red raspberries until something better comes out and crowds it down.

Of the Black-Cap varieties we have Doolittle, Mammoth Cluster and Gregg. Have grown more Doolittles than any other kind, and find them a very good berry. The Mammoth Cluster also keeps its name good by bearing regular crops of good fruit. Have had the Gregg fruited on a small scale for the two seasons past, and I am glad to say that I think a great deal of it, as it seems to me to fill nearly all demands that could be required of it; the bush is a very strong grower, bears heavy crops of very fine, large, firm berries, and as far as my little experience teaches, I think I would not hesitate to put it at the head of the Black-caps. But still, as in other fruits, we want all the kinds I have mentioned, as the Doolittle are nearly all gone when the Gregg commences to ripen; therefore, by having the different kinds we save a rush, or glut, that would necessarily happen if we had only one kind; and also helps the grower, and makes it much more pleasant for him in gathering and marketing his crops.

Last, but not least, comes the blackberry. In this class we have several good varieties, but my experience has been most entirely confined to the Kittatiny and Snyder. The Snyder bears very heavy crops and is a very hardy bush, but I would not recommend it where other kinds can be grown, as the fruit is small and inclined to be knotty, and will not sell when there are better ones to be had. The Kittatiny, that has gained for itself such a high name in this—more particularly Winona—section, is indeed a great berry, and I believe if our winters are not too severe that we can grow them in almost unlimited quantities, as they are certainly wonderfully prolific.

I think the most important question with blackberries at present is:—*Can we overstock the market?* The prices so far have been good, but still the market seems to be limited, as we find that very few people, comparatively speaking, know anything about this fruit; but one thing that encourages us is that when anyone gets one quart or a taste of them they are sure to want more. Therefore we hope that the demand for them will increase as fast as the quantity of the fruit.

Upon the whole I would say that I believe berry growing of all kinds, if properly carried on, is profitable, and that any one who sees fit to give it close attention will be well paid for all his time and labor. In conclusion, when we come to think of the improvement that has been made in berries within a few years past, and we compare the wild strawberry with the Sharpless, and some of our best varieties of raspberries and blackberries with the older varieties, we are struck with wonder, and the thought that comes to me is, providing that the improvement in berries goes on in the future at the rate it has done for the last twenty years: What will berries be like in the next century?

A few days ago the enormous number of 283 blossoms and buds were counted upon a single plant of the James Vick Strawberry.

Strawberry Cultivation.

CHOICE OF SOIL AND LOCATION.

It has been said that "with no other fruit do soil and locality make so great a difference;" and I am inclined to think that while this is truer of the raspberry, it is also thoroughly established that location and native qualities of soil are among the first and chief considerations in working out the problem of success with strawberries.

It is a generally admitted fact that the very best soil and the one adapted to the largest number of varieties is a deep sandy loam, moist, but not wet in its natural state. All the varieties will do well on such land if it is properly deepened and enriched. Shall the fact that we have no such soil and cannot obtain it, discourage us? Not at all. There are choice varieties of strawberries that will grow in the extremes of sand or clay. More effort will be required, but skill and information can still secure success; and advantages of location, climate, and nearness to good markets may more than counterbalance natural deficiencies in the land. Therefore, if one finds himself in an unfavorable climate, and shut up to the choice of land the reverse of a deep, moist, sandy loam, let him pit his brain and muscles against all obstacles.

Let it be well understood that strawberries cannot be made to do well on ground exhausted by the roots and covered by the shade of trees. On many farms, and even in some gardens, there are several varieties of soil and location, and by placing early kinds on warm, sunny slopes, and giving late varieties moist, heavy land and cool northern exposures, the season of this fruit can be greatly prolonged. The advantage of this long-continued supply for the family is obvious, but it is often even more important to those whose income is dependent on this industry. It quite often occurs that the market is "glutted" with berries for a brief time in the height of the season. If one's crop matures in the main at such a time, the one chance of the year passes, leaving but a small margin of profits, whereas, if the grower prolongs his season by a careful selection of soils as well as varieties, he may sell a large portion of his fruit when it is scarce and high.

Climate, also, is a very important consideration. In the far north, sheltered situations and light warm land should be chosen for the main crop, but it should always be our aim to avoid that hardness and dryness of soil that cut short the crops and hopes of so many cultivators.

It is also of vital importance that the fruit farm should be near good shipping facilities, and that there be sufficient population in the immediate vicinity to furnish pickers in abundance. It will be far better to pay a much higher price for land—even inferior land—near a village and a railroad depot than to attempt to grow these perishable fruits in remoter regions.

We will consider first the less objectionable, i. e., the heavy clay. To call clay more favorable for strawberries than sandy land may seem like heresy to many, for it is a popular impression that light soils are the best. Experience and observation have, however, convinced me of the contrary. With the clay you have a stable foundation. Your progress may be slow but it can be made sure. The character of a sandy foundation was taught centuries ago. Moreover, all the fine foreign-blooded varieties grow far better on heavy land, and a soil largely mixed with clay gives a wider range in the choice of varieties.

If I had my choice between a farm of cold stiff clay or light leachy sand, I would unhesitatingly take the former, and I would overcome its native unfitness by the following methods: If at all inclined to be wet, as would be natural from its tenacious texture, I should first drain it thoroughly. Then if I found a fair amount of vegetable matter, I would give it a dressing of air-slacked lime, and plow it deeply late in the fall, leaving it unharrowed so as to expose as much of the soil as possible to the action of the frost. Early in the spring, as soon as the ground was dry enough to work and all danger of frost was over, I would harrow in buckwheat and plow it under as it came into blossom; then sow a second crop and plow that under also. It is the characteristic of buckwheat to lighten and clean land, and the reader perceives that it should be our constant aim to impart lightness and life to the heavy soils. Lime, in addition to its fertilizing effects, acts chemically on the ground, producing the desired effect. It may be objected that lime is not good for strawberries. That is true if the lime is applied directly to the plants, as we would ashes or bone dust, but when it is mixed with the soil for months it is so neutralized as to be helpful,

and in the meantime its action on the soil itself is of great value. It must be used for strawberries, however, in very limited quantities. The coarse green straw of the buckwheat is useful by its mechanical division of the heavy land, while at the same time its decomposition fills the soil with ammonia and other gases vitally necessary to the plant. A clay soil retains these gases with little waste. It is thus capable of being enriched to almost any extent, and can be made a store-house of wealth.

Where it can be procured, there is no better fertilizer than the product of the horse stable, which as a rule can be plowed under in its raw, unfermented state, its heat and action in decay producing the best results. Of course judgment and moderation must be employed. The root of a young-growing plant cannot feed in a mass of fermenting manure, no matter what the soil may be. The point I wish to make is that cold heavy land is greatly benefited by having these heating, gas-producing processes take place beneath its surface. After they are over, the tall rank foliage and enormous fruit of the Jucunda strawberry (a variety that can scarcely grow at all in sand) will show the capabilities of clay.

While buckwheat is a good green crop to plow under, if the cultivator can wait for the more slowly maturing red-top clover, he will find it far better, both to enrich and to lighten up his heavy soil; for it is justly regarded as the best means of imparting the mellowness and friability in which the roots of strawberries as well as all other plants luxuriate. There are no doubt soils fit for bricks and piping only, but in most instances by a judicious use of the means suggested, they can be made to produce heavy and long-continued crops of the largest fruit.

These same principles apply to the small garden plot as well as to the acre. Instead of carting off weeds, old pea-vines, etc., dig them under evenly over the entire space when possible. Enrich with warm, light fertilizers, and if a good heavy coat of hot straw manure is trenched in the heaviest stickiest clay in October or November, strawberries or any anything else can be planted the following spring.

Before passing from this soil to that of an opposite character, let me add a few words of caution. Clay land should never be stirred when either very wet or very dry, or else a lumpy condition results that injures it for years. It should be plowed or dug only when it crumbles. When the soil is sticky or turns up in great hard lumps, let it alone. The more haste the worst speed.

Suppose that, in contrast, our soil is a light sand. In this case, the question of cultivating strawberry plants is greatly simplified, but the problem of obtaining a heavy crop is correspondingly difficult. The plow and the cultivator run readily enough, and much less labor is required to keep the weeds in subjection, but, as a rule, light land yields little fruit, and yet under favoring circumstances I have seen magnificent crops of certain varieties growing on sand. If sufficient moisture and fertility can be maintained, many of our best varieties will thrive and produce abundantly, but to do this is the very pith of our difficulty. Too often a sandy soil will not retain moisture and manure. Such light land is generally very deficient in vegetable matter, and, therefore, whenever it is possible, I would turn under green crops. If the soil could be made sufficiently fertile to produce a heavy crop of clover and this were plowed under in June, and then buckwheat harrowed in and its rank growth turned under in August, strawberries could be planted at once with excellent prospects of fine crops for the two succeeding years. Did I propose to keep the land in strawberries, I would then give it another year of clover and buckwheat. The green crop, when decayed, is lighter than clay, and renders its tenacious texture more friable and porous; it also benefits the sandy soil by supplying the absent humus, or vegetable mold, which is essential to all plant life. This mold is also cool and humid in nature, and aids in retaining moisture.

With the exception of the constant effort to place green vegetable matter under the surface, my treatment of sandy ground would be the reverse of that described for clay. Before using the product of the horse-stable, I would compost it with at least an equal bulk of leaves, muck, sods, or even plain earth, if nothing better could be found. A compost of stable manure with clay would be most excellent. If possible, I would not use any manure on light ground until all fermentation was over, and then I would rather harrow than plow it in. This will leave it near the surface,

and the rains will leach it down to the roots—and below them, also—only too soon. Fertility cannot be stored up in sand as in clay, and it should be our aim to give our strawberries the food they need in a form that permits of its immediate use. Therefore, in preparing such land, I would advise deep plowing just before planting, and, if possible, just after a rain; then the harrowing in of a liberal top-dressing of rotted compost, or of muck sweetened by the action of frost and the fermentation of manure, or, best of all, the product of the cow-stable. Decayed leaves, sods and wood ashes, also make excellent fertilizers.

In the garden, light soils can be given a much more stable and productive character by covering them with clay to the depth of one or two inches every fall. The winter's frost and rains mix the two diverse soils, to their mutual benefit. Carting sand on clay is rarely remunerative; the reverse is decidedly so, and top-dressings of clay on light land are often more beneficial than equal amounts of manure.

As practically employed, I regard quick, stimulating manures, like guano, very injurious to light soils.

Coarse, gravelly soils are usually even worse. If we must grow our strawberries on them, give the same general treatment that I have just suggested.

On some peat soils the strawberry thrives abundantly; on others it burns and dwindles. With such a soil, I should experiment with bone-dust, ashes, etc., until I found just what was lacking.

No written directions can take the place of common sense, judgment, and above all, experience. Soils vary like individual character. I have yet to learn of a system of rules that will teach us how to deal with every man we meet. It is ever wise, however, to deal justly and liberally. He that expects much from his land must give it much.

Plums.

BY W. G. CLINE.

In writing on this subject I have given those that I am personally acquainted with. I will first take up the whole list that I have grown, afterwards give the best eight varieties for profit.

In taking up the list I will take the Lombard first, as every person takes that as the most popular as well as the most profitable plum. It is a very valuable plum, and will bear the most neglect of any—although to give the best samples, as well as to bear every year, the tree wants feeding, for when full of fruit the tree loads itself so very heavy. If not manured there will be no growth, consequently no fruit the next year, taking all its time the next year to recuperate from the heavy load of the year before; and although this being one of the most valuable for profit, don't plant all Lombards.

Second on the list I have the Victoria, a large to very large purplish or reddish plum; tree a fair grower and one of the very best bearers; in fact, two years ago when plums were so very scarce, the Victoria was about the only plum I had. The trees are an early and a steady bearer; tree same as all heavy bearers, wants some feeding. There is one fault with this plum—it rots badly some seasons.

No. 3—General Hand.—The finest flavored plum I know of; large to very large, round, greenish yellow; tree a very strong grower; not as young a bearer as either Lombard or Victoria, but the fruit is very free from rot, being scattered evenly over the tree and not grown in clusters like many others.

No. 4—Bingham.—Tree a fair grower, very nearly as good as General Hand; fruit large, very much like the General Hand in color, sometimes spotted with red on one side; not as good in quality, but early and brings the highest figures; not much subject to rot.

No. 5—Bradshaw.—A first-class bearer of large dark reddish purplish color with heavy blue bloom; coarse flesh; early, ripens in August; slow grower; valuable for the market.

No. 6—Columbia.—A very large plum of a brownish purple color, dotted with paler specks and blue blooms; a very thrifty grower, with long straggling limbs; fruit is not of first-class quality, neither is it a heavy bearer, but still valuable for market as it is a good shipper, sells well and does not rot much; about as good a bearer as General Hand.

No. 7—Yellow Egg.—A large yellow plum with sometimes red cheek in sun when well ripened; tree a good grower, a regular and heavy bearer; rather late; would be very valuable if was not for

the rot; still should be in every man's list for profit.

No. 8—Pond's Seedling.—A large to very large oval plum; tree a very strong upright grower, bears heavy; of bright reddish color. There is no plum that will bring a higher price in the market than this when well ripened; but with me up at the mountain it rots so badly that it is hardly worth growing, but down on the clay soil the rot did not trouble them.

No. 9—Imperial Gage.—Fruit oval, of medium size, pale yellowish green; very fine fruit; late, and would be profitable for those that can grow them, but for me rots too badly; tree fair grower and bears heavy.

No. 10—Golden Gage.—A small sweet plum of a golden color; ripens before the Lombard; brings a good price, but is so small I don't like it for general culture, preferring the larger plums; tree a good grower and good bearer, and free from rot.

No. 11—Duane's Purple.—A fine large purple plum, good flavor; has not proven a good bearer with me; tree fair grower.

No. 12—German Prune.—I think more of this plum than any other on the list. It is a fine large plum, almost black, with heavy blue bloom; tree good grower, but not as fast a grower as some; good bearer when tree gets of age. A plum that you can ship any distance without fear of rot. It is the richest plum canned of the whole lot, and the best for drying.

In giving a list of best eight for profit, would take Lombard, Victoria, General Hand, Columbia, Bradshaw, Bingham, Yellow Egg, and German Prune, being all large plums except the Lombard, and that, if well fed, is a good size plum.

The soil best adapted to the growth of plums is any soil that is deep and free from standing water. The plum tree will not stand with wet feet; there is no tree that will die sooner from wet, and the deeper the soil and the better drained the better the tree will grow. As the roots of the plum tree love to run deep, so set your plum trees on as high a ground as you have got. Don't think it matters whether your ground is clay, sand, alluvial or what it is, as long as it is deep, dry and moderately rich.

The rot I would say is much worse some seasons than others, the last season being very bad on some kinds—taking about one third. I see only one way to save the fruit, when commencing, that is to watch the tree and as soon as you see a plum in a cluster commencing to rot pick it out, and you must watch close as they rot fast. A plum with a small spot on it in the morning may be all gone by night, and wherever a rotten plum touches the others in a cluster for two or three hours you will find them commencing to rot, a whole cluster of ten or so rotting in one day; although not always as bad as this, it is often the case.

I have been troubled very little with black knot, perhaps for the reason I watch very close and cut off and burn any knot that I see.

I have never cultivated high. When the trees were small I grew tomatoes, corn, peas, and one year oats, which hurt the trees very much, and one year let the orchard run to clover; but I am satisfied if you want fruit your ground must be cultivated, if growth is not too great; if it is let it run to sod. For the last two years I have just plowed shallow and harrowed my orchard.

Feed the Grape Vine.

The oldest grape growers we know always manured their vines plentifully, and never dreamed of giving them too much. Of late years there has arisen a class of grape growers who contend that but little manure is needed; that in fact the poorer the land the better. We are not among this class. We have found that the richer the soil the better. We have even known dead animals to be buried about the roots; though we think that this is carrying the manure question a little too far. Vines will sometimes fall in rich land, we are aware, but it is from other causes than the soil being too rich; there are other plagues in the way. It may be mildew, it may be the little dusty-looking worm which sometimes strips the vines of its foliage; or it may be the phylloxera which attacks the roots and plays havoc with them; others think there is something in the climate, and so on. We do not pretend to decide the question; we only know that if we do the best we can in the cultivation of the vines, success will reward us in a majority of cases; but when failure is the result we feel very sure that it is not high feeding. The grape vine, we are confident, and all our experience goes to show it, is a good liver, and we run less risk in over-feeding than in starving it.—[Germantown Telegraph.]

Vegetable Garden.

Seasonable Hints.

When squash and melon vines begin to run over the ground, a little fertilizer, wood ashes or fine manure should be sown between the hills and hoed in. These vines strike down new roots as they run, and if they are fed at these roots it greatly increases their productiveness.

When onions seem to run to "scullions," and the tops continue green and large, it is a very good plan to break the latter down by rolling a barrel across the rows. This partially stops the growth of the top and leaves the bulb to get the fertility of the soil.

The asparagus is allowed to grow its tops to their full extent. The importance of this is easily seen. The fleshy shoots of early spring grow from the nourishment stored up in the roots during the year previous. This food is prepared by green foliage, and it is clear that in order to have an abundance of crop sprouts in spring the foliage of the bed must be left to do its work of assimilation the summer before. It is well to add a coating of manure after the cutting is through, to furnish the crude materials of plant food. If any large weeds appear they may be pulled out. The small ones will be overshadowed by the asparagus and do no damage.

Celery.

Celery can be grown so as to be fit for the table in August or September, but it is scarcely desirable to do so, as it is seldom wanted at that season of the year, and is not generally as good as that which comes in later in the season.

The transplanting into the permanent bed may be done at any time in the month of July, or even up to the middle of August. There are many ways of preparing these beds, but we only give directions for two such different modes as involve the least labor.

A bed four to six feet wide, and of any desirable length, should be dug out to a foot in depth, and the soil laid upon the edges of the bed; the bottom is then to be well spaded, and well manured with either short stable or cow manure, or with guano. In this bed the plants are to be set in rows fourteen inches apart, and the plants nine inches apart in the rows. When taking them from the nursery bed, be careful to take them up with all their roots attached, and be sure to set them firmly in the soil of the bed. The leaves should be left entire, and not clipped or shortened, only removing any suckers that may grow from the main stem. After planting they should be well watered, and shaded by placing a board about eight or nine inches wide directly over each row, and an inch or two above the plants. The intervening space between the boards will admit light and air; at the end of a week or ten days they will be well established, and the boards can then be removed. During their growth they will be benefited by occasional waterings of weak guano water, being careful not to let it get into the heart of the plant.

From the middle to the end of August the earthing up process may be begun for such as may be wanted for use in September or October; and about the middle of September for such as may be needed for use in November. When the plants are about fifteen or eighteen inches high, remove any suckers or offshoots, and then take two boards nine inches wide, as long as the width of the bed; place one on each side of a row of plants, close up to them. Then fill in the space between them with the soil taken out of the bed, pulverizing it very finely as it is thrown in, letting it remain as thrown in without treading down. When the space between the two rows is filled in to the height of the boards, gently and carefully withdraw them, and do another row in the same way. When the boards are withdrawn, the loose earth will roll down into the spaces between the plants without getting into their hearts, and will make a level earthing up of about six inches. The process is to be repeated two or three times, or ten days fortnight,

according to the height the plants may attain. Some place the boards slightly inclining towards the plants, retaining them in this position by triangular pieces of board shaped like an inverted V. This is done the better to insure the earth falling in between the plants when the boards are removed. Earthing up should be done when the plants are quite dry, for if done when they have dew or rain upon them they will be liable to rust. Thus treated, all the trouble of handling the plants and pressing the soil in between the plants by hand is avoided.

Some gardeners do not commence earthing them up until they have attained nearly their full size, and generally do it at one operation, earthing them as high as can be done without burying their hearts. In this case wider boards will be required. Should the weather continue open and mild, and the plants continue growing, they give them another earthing up about the first of October. Others let the plants make natural growth, and earth them up at one operation three or four weeks before they are wanted for use. It is not necessary to earth up that which is intended for winter use more than once.

Turnips.

As a rule the intermediate class of turnips, or the garden varieties, have attracted but little attention in this country. They form one of the most tasty and relishable of all vegetables if grown in a mellow loam, where the growth is rapid. Prepare your ground and sow from the middle of July to the first of August. For a summer and fall turnip the purple top strap-leaf is one of the earliest and best flavored varieties, and also being a good keeping turnip from September till March. When better known it will prove a profitable kind for the market gardener and the stock raiser. This class of turnip is grown with little or no cultivation. In England they are commonly called stubble turnips, being grown after a crop of rye wheat or barley has been harvested. They can be grown with equal success in this country after a crop of early peas, especially if advantage is taken of a shower. If about 200 pounds of superphosphate to the acre be drilled in with the turnips there will be a marked increase in the crop.

CUCUMBERS.—The demand for this vegetable for pickling purposes is greatly on the increase. The season so far this year has not been favorable for their growth, and insects have been very injurious. Cucumbers sown any time before the middle of the present month will mature, especially for pickling. In the United States a great many pickle factories have been established. One recently commenced on Long Island, N. Y., has rendered the land in that vicinity valuable. It is estimated that as much as \$100 per acre can be realized by growing cucumbers for the factory.

There is nothing more tasty that comes on a farmer's table than green peas in season, and for a constant crop they should be sown at regular intervals during the summer months, and then may be had as late as September. Lettuce is not only a delicious salad, but it has medicinal properties, and may be had crisp and new by continual sowings. Radishes are easily grown and are a relishable tit-bit both for summer, fall and winter use. Sow along as late as September.

The professional gardener is, of course, familiar with the means of adding to the value of his garden, often obtaining two or three crops from the same piece of ground. But the average farmer does not realize half as much from his garden as he might. Much of this loss is occasioned by attempting to get the work off hand before the regular field work begins to press, thus getting many of the seeds in the ground three weeks too early.

Squashes intended for winter use and feeding out, should never be planted earlier than July. Cabbages the same, supposing that the plants are of a late variety and have been previously started, and ready for setting out.

Entomology.

How to Destroy Squash Bugs, &c.

BY E. LEWIS STURTEVANT.

We have found strong tobacco-water a satisfactory remedy for the cabbage flea-beetle, *Hallica striolata*. This is the spry little black bug, or flea, which is so destructive to the young plants of cabbage, radish and turnip. We found that unless the tobacco-water is made as strong as it can be made by soaking tobacco leaves in cold water, it will not avail. We also found that by steeping the tobacco in warm water we obtained a stronger decoction.

Our experiments with the striped bug or cucumber beetle, *Galeruca vittata*, indicate that tobacco water is of little avail with this insect. We also tried placing corn-cobs dipped in coal tar among the vines. As will appear from the results noted, this noxious substance apparently drove away the greater part of the beetles. Thus, we found 28 beetles on 29 plants of squash on which no preventive had been used, while on 42 plants about which cobs dipped in the coal-tar had been placed, we could find but 16 beetles. Turpentine and kerosene oil used in the same way as the coal tar gave about parallel results. Last year we used slaked lime with excellent results, and this season we have used ground limestone, containing Paris green at the rate of one part to one hundred by weight, with apparently complete success. Whether the poison adds to the efficacy of the ground limestone or not, we have not yet ascertained. It is necessary to repeat the application as often as it is removed by wind or rain, until the plants are so far advanced as to be beyond the reach of the insects.

Last season we destroyed the nests of the Tent caterpillar, *Clisiocampa Americana*, by rubbing them with a swab wetted in turpentine. This liquid destroys the worms as soon as it touches them, and it is usually not difficult to reach the nests by using a pole of moderate length.

The Aphides, which appeared upon the apple trees in the spring, and which threatened the entire destruction of the crop, were destroyed by a timely rain. These insects can be killed by the application of a strong solution of tobacco, and when they appear in abundance the orchardist must endure the expense and inconvenience of sprinkling his trees if he would check their ravages. The protection of insect-eating birds should be considered a duty by all, but whatever course may be adopted, and whatever remedies may be applied, the farmer must ever remember, that in dealing with most insects, eternal vigilance is the only safety.

The Cabbage Pest.

For two or three years past the cabbage crop has greatly suffered from the worm, which has become a most destructive enemy of this valuable vegetable. Many attempts have been made to get rid of it by resorting to half a score of different appliances; but so dense are the leaves and bulky the head, that it is next to impossible to dislodge all the worms, concealed as many of them are, in the compact layers. The best remedy—one indeed that seems to be as effectual as, under the circumstances, it can be—is to take a half pound each of hard soap and kerosene oil, dissolve in three gallons of water, with which to thoroughly sprinkle the heads. A single application may be sufficient, but as it may not always be a second, and perhaps even a third, may be necessary. This preparation has been tested over and over in the most careful manner, and it is regarded, though very simple, as a positive remedy.

The Curculio.

Those of our readers who dislike the use of Paris green for destroying these pests should not neglect to jar their plum trees at least once a day, first spreading sheets to catch the insects. Shaking the tree will not do; it must be jarred sharply by striking with an axe or hammer struck against the stump of a sawed off limb, or a piece of wood can be used to prevent injury to the bark from striking.

It is essential to success with Paris green for potato bugs or other pests that it be pure. Much that is offered at reduced rates is adulterated and dear at any price, as it cannot be depended upon.

The Farm.

A Bank Barn.

(We take this from an American paper.)

Herewith is a plan of a barn 32 x 40 feet and 16 feet from the bottom of the sill to the top of the plate. It has an underground stable of the same size, 14 feet of the length being used as a horse stable, and 14 feet as a cow stable, leaving 12 feet for a corn-crib and feed room. The cost of the material and work was \$650, including the outlay for everything except painting. Here are the materials used in its construction:

Siding	2,904
Shingles	1,300
Brick	12,600
Lime	50 bushels
Lumber (hard)	500 feet

Ashes vs. Vegetable Matter.

A suggestive lesson may be derived from the following simple experiment: Upon one acre of land a farmer plowed in a quantity of cornstalks, while upon another acre he spread the ashes resulting from the burning of an equal quantity of stalks. That upon which the stalks were burned gave the best start, but the acre upon which the stalks were plowed in soon caught up and surpassed the former, and finally matured the better crop. This experiment illustrates the difference between mineral fertilizers and decayed vegetable matter or humus. The minerals being in a soluble condition, soon made themselves manifest in the increased growth produced. At first the buried cornstalks had no effect upon vegetation except by increasing the prosperity of the soil, and by admitting larger supplies of atmospheric air to act upon the constituents of the soil. When the stalks commenced to decay, and the minerals were not only liberated from the stalks, but also from the soil in contact, then the corn which was planted upon the stalks began to pull ahead of that planted upon the plot fertilized with ashes. The value and efficiency of the ashes would be sooner exhausted than the vegetable matter of the stalks. Again, where the stalks were used, the fertility of the soil would be increased, because in all probability the nitrogen contained in the stalks would remain intact until liberated by their decay. This substance would be in the form of ammonia and its compounds, that would again be decomposed before becoming plant food. In burning stalks, although all the minerals would be preserved in the ashes, yet it is quite certain that the nitrogen would be thereby expelled, thus robbing the plants of the fertilizing properties of that valuable agent. We should have many such experiments before establishing a theory, yet these suggestions might easily be followed out on other farms and by other farmers.—*American Cultivator.*

If clover is pastured off before the stems are formed it will keep on growing and will also start up and finish a new growth or aftermath when it has been allowed to mature, if the ground is rich and rains follow.

The Field.

Take your hoes to the grindstone every morning when they are in use; also carry a good file, and keep an edge on them that will cut a root easily.

So far as possible the farmer should keep around him young stock, the value of which will increase, rather than deteriorate, by lapse of time. If he does not do this more of his apparent profits than he is aware of will be required to replace old cows and old horses; besides, the returns from animals past their prime are always much less, while their cost of keeping is often greater than in the case of young stock.

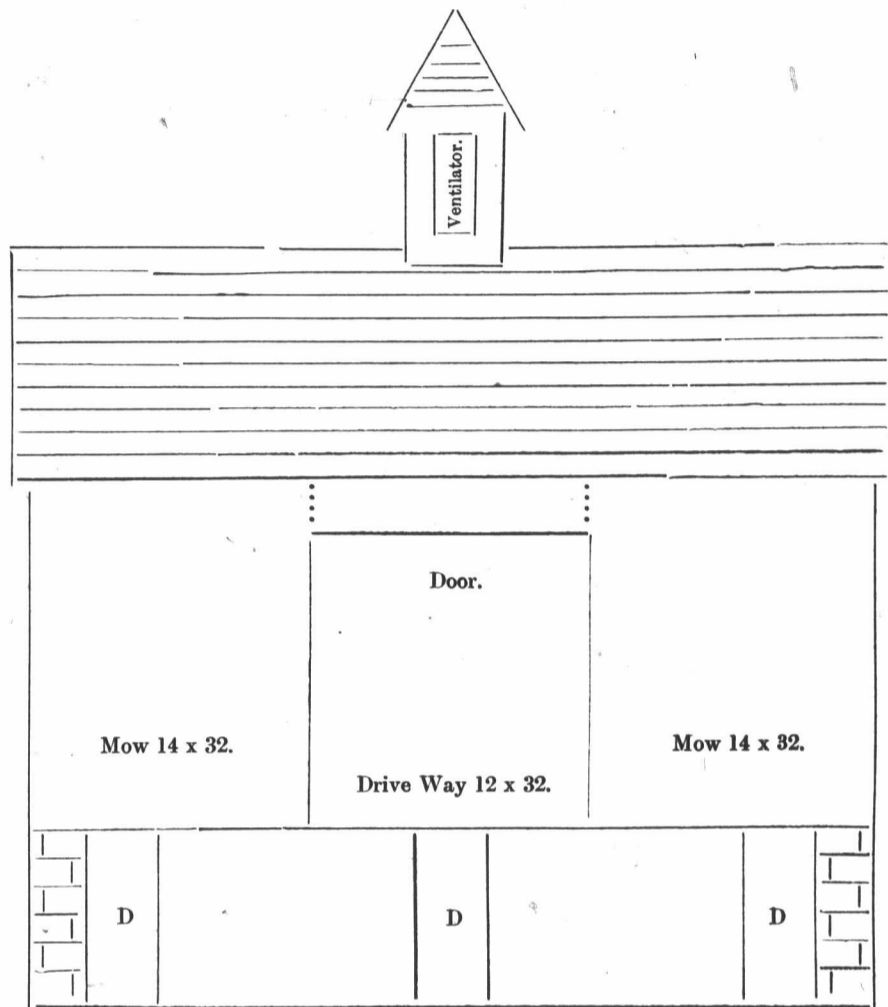
Timber cut between June and September keeps sound longer than if cut in winter. The old rule used to be to cut in August, but any time will do while the foliage is greatest. The reason for this probably is that the leaves on the tree help to dry it more rapidly than it would if the leaves were removed. The hot weather of summer months is also more favorable for seasoning timber than fall or winter. In very early spring, while the wood is full of sap, is the worst time to cut timber for keeping.

Cattle and sheep should always have plenty of shade in the pasture. They like, when they have eaten enough, to lie down in a cool shade and take their comfort, and if they can do so, they will thrive much better. A few shade trees for this purpose will pay well for any drain they may make upon the fertility of the soil. If there are no trees it will pay to erect a cheap shed, even though it be but a rude structure of four posts set in the ground and a roof covered with brush wood or pine limbs. It should be open to the north always, and may be open on all sides if more convenient. The effect of a blazing sun upon a cow's back when lying down seems to be more marked than while she is feeding, and cannot fail to make the animal feverish, and thus injure both the flavor of the milk and its keeping qualities.

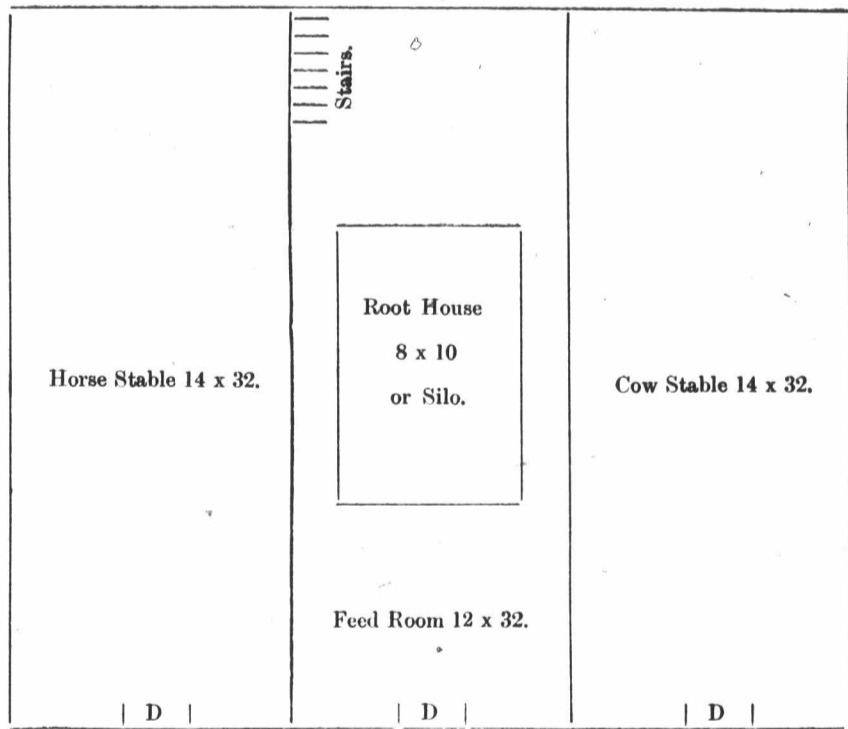
Smut in corn will soon be making its appearance. It will help very much to repress this damaging parasite, if farmers, and especially dairymen, would cut out every infected stalk they may find, and see that they are all burned. If this is done before the smut matures, and the spores, or black, or rather brown, powder escapes, the remedy will be much more effective. Smut is a poison to cattle and causes disease and gangrene of the bones and tissues, but it may be wholly eradicated from the fields if precautions are taken.

The disappearance of timothy from our natural mowings is variously accounted for. First, it is charged to the mowing machine as cutting too closely. We usually run our machines at medium height, rarely using the closest cut, but would prefer the medium or highest. Second, it is charged to too early mowing, as we mow some two weeks or a month earlier than formerly. Timothy runs out most upon seeding of the early cut meadows. Third, we agree with those who attribute it to the peculiar character of our seasons rather than to either of the above. As timothy is cut earlier, there is less natural reseeding than formerly, also less is foddered out on the fields, scattering the seeds. Give an abundant top dressing, harrowed in. Two applications will surely prove effectual.—[Ex.]

It may oblige you to buy a new hoe next spring, but that will not cost more than seventy-five cents, and two men with sharp hoes are worth as much as three men with those that are as "dull as a hoe," so it will require but a few days to pay for the new hoe.



BARN—FRONT ELEVATION VIEW.



BARN—GROUND PLAN.

Turnip Cultivation.

Farmers are now engaged actively, and, no doubt, also somewhat anxiously, in sowing the turnip crop. One of the most essential and valuable, the root crop is certainly one of the most costly and troublesome commonly grown. There is hardly any other crop that demands as much attention and for which skillful and liberal farming is so absolutely necessary.

In the first place, land intended for turnips requires very thorough cultivation. For turnips the soil can be neither too finely reduced nor too clean. Thorough cultivation economises manure, and minimises insect and fungoid attacks; for it tends greatly to accelerate growth and to strengthen the constitutional vigor of the plant, valuable safeguards against the "fly," and "finger-and-toe." Weeds rob the land of its supply of plant food, withdrawing costly nourishment from the sown crop. Farmers as a rule are not so careful in keeping down and eradicating weeds as they ought to be. A little extra labor timely devoted to this work would result in great advantage to the farmer. And this remark applies with equal force to all crops, to pasture and meadow lands as well as to grain and root fields. By the rag weed alone terrible injury is done to pasture land. Avoid working turnip land while it is wet.

The manuring is an important matter, in regard to which there is still much to be learned. We know a vast deal more about the exhaustion and nourishment of soil than our forefathers did, and yet the glimmerings the general body of farmers have got into the mysteries of these and other difficult problems of a similar kind, have done little more than enabled them to realise more clearly the great deficiency of their knowledge of the ever active and unvarying natural laws that relate to plant and animal production. It is the prevailing practice to apply along with the turnip crop the main portion of the manure for the whole rotation. This, of course, adds to the difficulty of selecting a perfect mixture. Good farm-yard dung makes an excellent foundation. With a tolerably liberal dressing of it, from 15 to 25 tons per statute acre, a light dose of artificial manure should suffice, say from 4 to 6 cwt. phosphatic manure—dissolved bones or superphosphates.

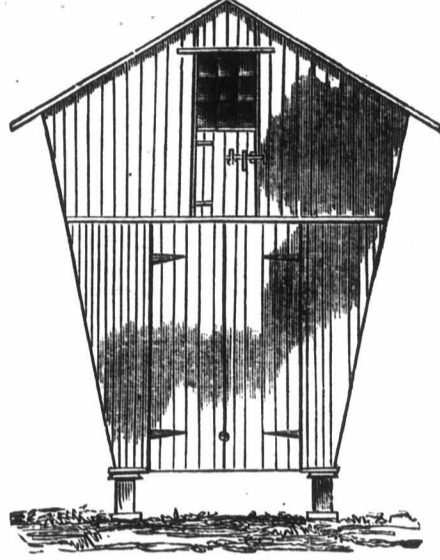
The drills for turnips need not be more than 27 inches wide. Many prefer them less. Some years ago there was a tendency in favor of wide drills and of having the plants left far apart. The object, of course, was to encourage the growth of heavy bulbs. Recent experience, however, particularly where careful observation has been maintained, has shown that medium drills and medium thinning are preferable. The greater number of bulbs make up for any falling off in individual weight, and the quality of moderately sized bulbs is, as a rule, found to be superior to that of those exceptionally large. For swedes the distance between the plants may be from 10 to 12 inches, and for yellows from 8 to 10 inches. About 3 lbs. of seed is sufficient for the acre. Some give one pound or a pound and a half more, with the view of helping to ward off the "fly." Thick sowing has certainly been found useful for this; but as the plants come up weakly and spindly where the seed is over abundant, thinning must be early attended to. It is important that if possible the sowing should be done during moist weather, as brairding is thereby hastened. Keep down weeds in the drills by hand and horse hoeing—operations that greatly promote the progress of the crop.—[Exchange.]

There are over 80,000,000 seeds in a bushel of red-top seed, over 26,000,000 in a half bushel of timothy, and about 3,000,000 in ten pounds of clover seed. As this is about the amount usually sown to an acre, it follows that we put in 110,000,000 seeds to an acre, or about 2,500 seeds to the square foot. This seems a great many, but as a square foot of turf in an old pasture has been found to have over 1,000 plants, and a square foot in a meadow that was irrigated and carefully manured had 1,798 plants, hence, making due allowance for that which falls upon stony and barren places, and that which is gathered by the fowls of the air, and for the poor seed and that which is buried too deeply to germinate, it is not probable that the above quantity is any too much.

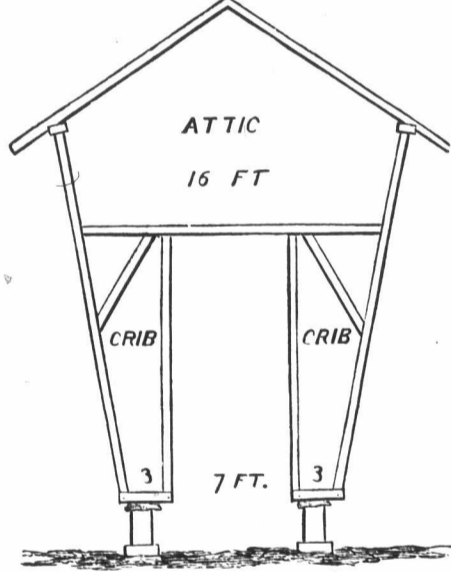
The use of commercial fertilizers hastens the ripening of crops a week or ten days, hence they are especially important on late-planted corn or potatoes.

A Popular Corn House.

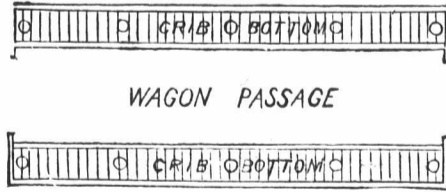
This style of corn house is approved by many. It is only connected at the bottom by doors, consequently the wagon is drawn in the building and between the two cribs. It is supported on eight



pillars, all wooden (see plan of floor); should be one foot and a half in diameter, and stand upon stone blocks to prevent decay. The sides, as shown in the elevation, are covered with slats two and one-half inches wide, with one-half to three-quarter inch cracks. When siding (vertical) up a building of this character, it is best to nail the lower part of each slat firmly to the sill and plate, two nails at each point in every slat, as it will add half to the strength of structure. In all cribs the inside slats should run horizontally.



In the frame plan the manner of framing the bents is shown. The attic is large, the corn being handed up from the wagon through the scuttle in the centre of the floor, which is partly laid with slats. During the season of corn gathering the farmer is often hurried, so that the corn is not sorted in the field. In that case it may be placed upon the floor of the attic, and sorted evenings or rainy days, the sound corn being passed down into



the cribs through openings in the floor made for that purpose. This floor is reached by stairs hung with a hinge, so as to swing up and fasten. When down the lower end rests upon the walk; or permanent stairs may be built from the crib, bottom upward, reaching these from the ground by one or more transferrable steps.

I am well pleased with your paper, THE FARMER'S ADVOCATE. Every word of it is readable and useful.
THOS. HASSARD, Caledonia, Ont.

Permanent Farm Improvements.

BY D. D. T. MOORE.

Every owner and cultivator of a farm should aim to make, each year, some permanent improvements thereupon. Whether his acres be few or many, they may be enhanced in value by making additions and improvements in the way of good buildings and fences, the planting of fruit gardens and orchards, the clearing and draining of land, and adopting other measures to render his premises more attractive and productive. The appearance of a farm often makes a great difference in the price which it will bring when offered for sale, for in purchasing a homestead, even more than in many other matters, the old adage holds true that most people judge by appearances. Hence a good, neat and convenient dwelling house and outbuildings, with fences, shrubbery, flower and vegetable gardens and orchards to correspond, always tend to materially enhance the value of one's premises.

But there are other items of equal if not greater importance in estimating the intrinsic value of a farm, and the first of these is its fertility or productive capacity. The man who augments the productive power of his acres by increasing their yield annually, thereby adds materially to their money value and advances the real worth of his premises correspondingly. This is a matter to which too little attention is given by many, if not the great majority, of cultivators—for they go on carelessly and negligently allowing their soil to deteriorate from year to year, whereas by adopting improved methods of culture and management the result would be increase of fertility and productiveness. And this unwise and profitless course is pursued from want of energy and enterprise, rather than lack of knowledge, for of many easy-going slow coaches, who ignore progress and improvement in their farming operations, it may be truly said that

They know the right, and they approve it too, Condemn the wrong and still the wrong pursue.

Let us urge upon all engaged in rural pursuits the advantage of making, every season, such permanent improvements as will tell in the future. In what directions this may be done we have already suggested. Just what improvements shall be inaugurated, or how they shall be carried out, each person must determine for himself, taking into consideration his circumstances and the condition and necessities of his premises. One farm needs better buildings or fences, or both; another enrichment of the soil by manuring, rotation of crops, etc., while the great necessity of another may be surface or underdraining. On many farms the conveying of water, through pipes or logs, to dwelling, barn, etc., will prove a most valuable permanent improvement, while the arrangement of convenient watering places for stock (in barnyard, and pastures also where practicable) should not be overlooked. But we need not enumerate or particularize. Every farmer, whatever his speciality—whether it be grain growing, dairying, grazing, fruit raising, or some other branch of husbandry—knows what is his most urgent need in the line of "betterments," and should make efforts in that direction. The purpose of this article is to arouse those interested to the importance of instituting permanent farm improvements, and we are confident that if our readers give the subject consideration now they will ere long take such action as will prove advantageous. Those who look to the advancement of their best material interests are earnestly requested to give the matter such thought as will be likely to lead to decided action in the direction of our suggestions.

A CATERPILLAR PEST.—Caterpillars in great numbers have put in their appearance in Colchester and other neighboring counties of Nova Scotia, and have even been in such masses on the railway tracks as to impede trains. They have stripped much vegetation in the suburbs of Halifax city. Many fields of potatoes have been destroyed. The slender worm is about an inch long, completely eating the core out of them. It has been observable also in this vicinity that great quantities of leaves have fallen from the trees, which is attributable to the operation of some kind of worm.

A correspondent pleads for restoration of the hollyhocks—for which fashion has substituted heavy-headed sunflowers. When well grown, in soil deeply trenched and made rich with manure worked in, it ranks among the most stately of autumn flowering plants.

ements.

farm should
ent improve-
es be few or
y making
way of good
of fruit gar-
draining of
o render his
active. The
great differ-
bring when
homestead,
ers, the old
udge by ap-
convenient
with fences,
gardens and
o materially

not greater
e value of a
ity or prog-
ments the
reasing their
ally to their
worth of his
a matter to
many, if not
they go on
their soil to
s by adopt-
management
ity and prod-
profitless
and enter-
for of many
progress and
ions, it may

ve it too,
ng pursue.

pursuits the
h permanent
e. In what
already sug-
shall be in-
ded out, each
taking into
the condition
farm needs
another en-
rotation of
of another
many farms
es or logs, to
ost valuable
angement of
in barnyard,
ould not be
erate or par-
is speciality
ing, grazing,
usbandry—
n the line of
orts in that
is to arouse
of instituting
we are con-
ect consider-
ch action as
look to the
interests are
uch thought
ction in the

rs in great
n Colchester
ova Scotia,
the railway
ave stripped
Halifax city.
royed. The
completely
een observ-
quantities of
h is attribu-
worm.

ation of the
substituted
ll grown, in
with manure
t stately of

Variations in Seedling Plants.

The variations which occur in seedling plants of our cultivated varieties of vegetables may, or may not have much significance, and yet these variations can not but be noted with some interest. Thus, in tomato seedlings young plants quite frequently show three and even four seed leaves instead of the normal two; egg plants, in varieties, occasionally show three seed leaves; in parsley and in capsicums the occurrence of three seed leaves is not rare. In cabbage and in cauliflower instances of single seed leaf, of the two seed leaves united so as to form a perfect cup, and three seed leaves, are not wanting. In beans we have observed two cases of the plant being tricotyledonous, and in these cases the first leaves were also three in number. In maize we have noted two and even three cotyledons, but these were probably produced by twin, or by triplet embryos.

In wild plants interesting variations are also occasionally noted. Thus *Sanguinaria Canadensis*, L., the blood-root, grows abundantly in the vicinity of the station. The flowers have petals varying in number from eight to twelve, and more in exceptional instances. A peculiar variation, however, which has been observed this year is where the plant's petals are so arranged as to form a flower or square outline, thus forming a uniquely curious appearing clump of bloom. In passing we may note that transplanted clumps of *Sanguinaria* equal for beauty many of our spring cultivated flowers, and excel, in our opinion, many.

The tomato is a plant that has long been cultivated, and consequently presents numerous variations in its growth. The species to which our garden varieties are referred by authors appears to be the same, but yet we believe that some of the types may be sufficiently distinct to be classed as separate species, or sub-species. The appearance of the young plants of the tomato De Laye of the French, the Upright tomato of the English, and the Tree tomato of American gardens, is as distinct from the ordinary varieties in the seedling plant as can well be imagined. The young plant is upright, short and stubbed; the seed leaves short and broad, the first leaves oval and comparatively entire. In Keyes' Early Prolific, again, while the variation is not at first sight as great from the common tomato as in the case with the De Laye, yet the first leaves are obovate and entire. In the ordinary tomato the young plant is elongated, the seed leaves lanceolate, and the first leaves notched and deeply divided. The tree tomato is of a dark green color, while the ordinary tomato is of a lighter and different shade.

In tomato plants we often find variations in the fruit upon the same plant and upon the same clusters. Thus, the petals and sepals vary from five to seven, and even from four in cases where two of the sepals have become confluent. The cells of the fruit may be two, three or more, even from fruit gathered from the same plant.

Among other variations in the tomato fruit may be noted that of shape, which is familiar to all who are acquainted with the tomato in its varieties. It is only within recent years that the tomato has become smooth. Formerly it was ribbed, and in shape quite distorted. One of the most marked variations obtained by culture seems to have been in the diminution of the seed, and variations are also to be noted between varieties in the manner in which the seeds are arranged, as also in the thickening of the core and the size of the various cells and partitions which contain the seed. There seems to be also a considerable variation in the vitality of seeds as between different varieties, as there certainly is between the strength of the young plants. We have not, however, as yet collected sufficient data to assign this variability to other than accidental causes. It is an interesting subject of inquiry whether the tendency to seedlessness and quality be not correlated, and also whether there be not a correlation between the vitality of seed and the quality, as also between the vigor of the plant and quality.

E. L. STURTEVANT, N.Y. Experiment Station.

You cannot make a better use of your soap suds and other slops than to pour them around young trees, grape vines and rose bushes. They are first-class fertilizers for all.

It is proposed to hold an International Forestry Exhibition at Edinburgh in 1884. The objects intended by holding such an exhibition are not only to stimulate a deeper interest in scientific forestry in the public mind, but to illustrate the importance and value of woods to a country.

Farmers' Clubs.

BY W. F. BROWN.

I think there is no calling in which there is as great need of organization as that of the farmer. In his work on the farm he is not brought in contact with men, and the social and intellectual part of his being needs the stimulus which comes from contact with other minds. It makes little difference whether the organization is a grange or farmers' club, so that it is conducted properly. I am a member of both organizations, and find great help and benefit from them. As there is a large class of farmers who on account of the secrecy and ritualism of the grange will not become members of it, I will describe briefly our plan of organizing and conducting a farmers' club.

We have two very successful ones in this township, one of which is now in its eighth and the other in its second year. These clubs consist of twelve families each, and meet at the farms monthly, so as to get round each year. We have also in our own and several adjoining counties county clubs, that often have an attendance of 100 or more. These clubs meet on the farms through the summer, and in some town or village where they can secure a hall and stabling for their horses in winter. I very much prefer the small club for several reasons. In a small club it is easy to get every member to take a part, while in the larger one a few of the best talkers are almost sure to monopolize the time. In a club of twelve the members are more certain to attend promptly and more regularly, as every absentee will be missed, while in the larger club a large proportion attend irregularly. In the small club the family where we meet provides the dinner or supper—for we meet at 2 o'clock, p. m., during the months of April and September inclusive—and this is much less trouble and expense than to be obliged to pack a basket twelve times a year as is the case with the large club. I think the better way would be to organize as many of the local clubs as possible, and let them all unite and form a county club which should meet quarterly, or if this was not convenient, at least once a year, and hold an institute.

A club may be started with only four or five families, and gradually increase, and often this will be better than to start full. If you expect success you must impress upon every member the importance of always attending the meetings. You must also prepare a programme so that the members will know what is required of them. It is best to get out a printed programme at the beginning of the year. Our club has such an one in which the place of each meeting is designated, the topic to be discussed and a number of sub-topics under each question. It contains also the constitution and by-laws, and costs us \$5.50 per 100 copies, and this is about all the cash outlay our club makes during the year. In addition to a regular question for discussion at each meeting, we have an essay and a selection. The President appoints members for this duty a month beforehand, and also some one to open the discussion of each sub-topic. A part of the time at each meeting is spent socially, and the men usually inspect the farm and stock. In making the appointments for the year, care should be taken to meet in winter when there is plenty of stable room for the horses, and the spring meetings when the roads are likely to be bad, should be as central as possible, and located on a turnpike if possible. I think it hard to over-estimate the good that such meetings may do, and think that such a club should be started in every township.

Reports from St. John, N. B., say that the potato bug is more plentiful this season than ever before at the same time of the year. Much fear and anxiety is manifested that the ravages of the pest will be very injurious, if not almost fatal, to the potato product.

The process by means of which planks are made from straw is undergoing a practical test in Chicago, where a large building is under construction as a home for a new industry. If these planks can be depended on as building material the discovery is an important one for the great North-west on both sides of the line. Lumber is there very scarce and dear, and straw is so abundant as to be looked on as a nuisance, to be got rid of by burning in the field. If the farmer can convert his straw into lumber, as he converts his wool into cloth, the conditions of life in the North-west will be greatly ameliorated.

The Apiary.

Bee-Keeping.

At the present day the bee-keeping world are agitating the production of the *Apis-Americana*, or the "coming bee," that it is hoped will be able to reach the nectar in our deepest flowers—such as red clover, thistles, etc., and will produce one, two or three hundred pounds of honey per colony.—The idea of stripes of color has passed away with specialists, and now they breed for business. Occasionally we have an apiarian who still sticks to the common black bee, warmly defending their excellences, while we all have to agree that they do produce the whitest of comb honey. I think I can safely say that nine tenths of the bee-keepers of today would prefer the Italians, for they possess more excellence than any other strain that has been introduced yet; they being more docile than the blacks, also much larger, and can carry heavier loads against our strong winds, and breed faster—keeping their hives full of workers. My advice to all bee-keepers would be to get the Italians, and Italianize all of the bees in their neighborhood, and then they can be sure of keeping their bees pure. But if they allow any black colonies to be kept within two or three miles of them, they will have to be very watchful if they get any purely-mated queens, because the queen goes out in the air to mate, and the black drones being smaller and swifter, outstrip the heavy Italian; and the consequence is you have what is termed a hybrid queen, or a queen producing hybrid bees. This can be prevented by a judicious apiarian to a large extent, by raising drones from their best Italian colonies, and cutting all drone comb out of the black colonies, and not allowing them to raise any drones at all.

The hybrid bee has had admirers, too, for they produce beautiful comb honey, and are very industrious, very often storing more than either the blacks or pure Italians; but they are more irascible than the pure blacks or Italians, often being very annoying to everybody and everything that moves. But anyone can put up with considerable trouble to be rewarded with a lot of choice honey, for they are indefatigable workers. They, too, are larger than the blacks, although they do not all have stripes. Some of them are pure black, while others have stripes across their abdomen; and, in fact, are pure Italians. Yet queens raised from these will have hybrid drones—the drones being what the mother is. If she is pure Italian, her drones will be pure Italian; and if she is black, the drones will be black; or hybrid, the drones will be hybrid.

While many of our best apiarians advocate breeding from the swarms that store the most honey, irrespective of color of queens or drones, others recommend selecting a pure colony to raise drones from. As for my part, I have never raised any queens only for my own use, and I have always selected good, large bees, and as near pure as possible, to breed queens from; taking my second best for drones, and preventing any others from raising drones by removing all drone combs, or cutting the drones' heads off just before they are ready to hatch; and I have a strain of bees now that winter well, and store as large an average as any in this county. My average for 1882 was 82 pounds per colony, the yard through, although my best went 120 to 140 per hive. One-third of my surplus was made in small sections, weighing from one to one and a half and two pounds each. Honey put up in such packages sells readily, when compared with the surplus boxes that were formerly used.—[Kansas Board of Agriculture.

Although the oleander is a flower of but little merit, and partakes more of the nature of a tree than a shrub, certain people will have the unwieldy plant in their houses, notwithstanding that it is of a highly poisonous nature. A small quantity of the leaves have been known to kill a horse. Its flowers have killed people who carelessly put them in their mouths and chewed them. On one occasion, when skewers were made of its branches, they poisoned the roasted meat with which they came in contact; and, on one occasion, out of twelve persons who partook of roast-beef thus skewered, seven died. Such being the nature of this shrub, it should be entirely dispensed with, as no one can tell how soon it may bring harm into a family, especially where there are children.

Poultry.

Non-Bearded Silver Spangled Polands.

The accompanying engraving represents a pen of this class of fowls. Of late years the non-bearded varieties of Polands have been coming into favor at our exhibitions in preference to the bearded kinds. However, both classes have their admirers. The name would lead any person to suppose that they were connected with the country of the same name, but they are unknown in Poland, and are rather of French origin.

No doubt the name has been derived from the peculiarity of the head or *poll*, and hence *polled* has been perverted into *polish*, and finally Poland. One of the characteristics common to these fowls is the crest, which in the male bird is composed of long and pointed feathers closely resembling those of the *hackle*, and in hens of feathers of the ordinary character—rounded at the ends. This crest in both sexes arises from a globular protuberance situated on the fore part of the skull.

In conclusion we may say that the Polands, like the Hamburg strains, are specially valuable for their beauty and for their egg-laying qualities; but they are better adapted to the wants of the fancier than those of the poulterer, who has to make a profit from his fowls, owing to their small size, liability to disease and difficulty of breeding them true to color.

Dusting.

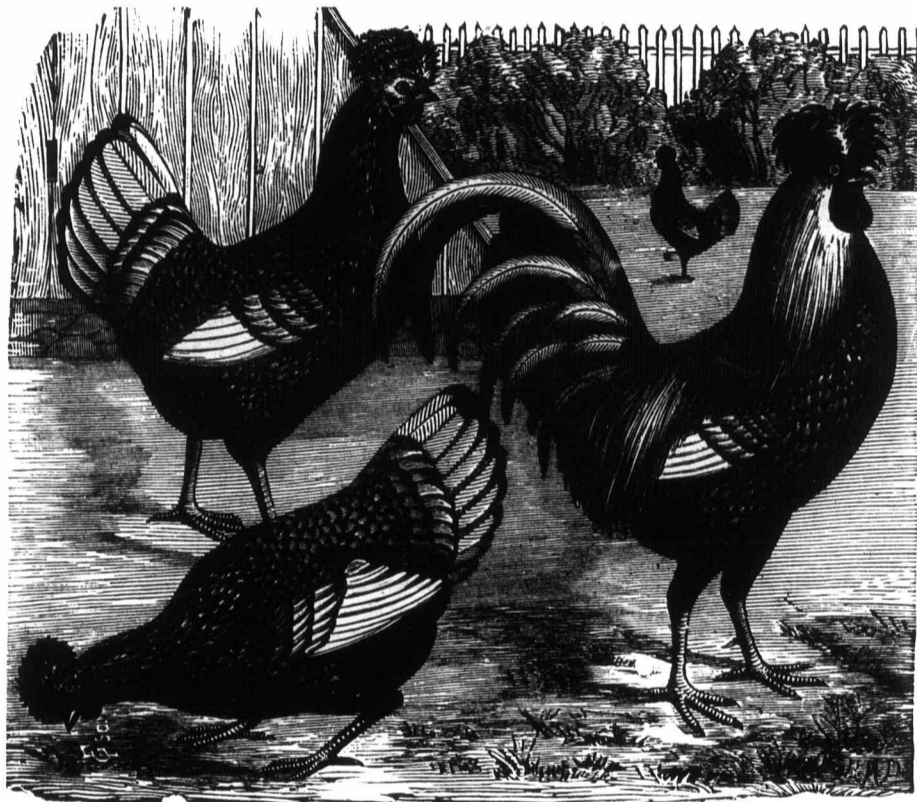
A dust bath in the hennery, where space is limited, is absolutely necessary, and affords both the means of keeping the fowls free from lice and parasites and giving them agreeable exercise. Those flocks which roam at will do not need any especial arrangement in warm weather; they will choose the most convenient bed of dry earth to be found, and there will nestle in the loose bed of dust and roll first on one side and then on the other, dive their heads into the heap and dash the fine dust with feet and wings through their ruffled feathers to the place where the lice and other insect enemies love to harbor.

Breeders who value their fowl stock and look to their comfort and well-being usually provide them with baths. But there are others who keep poultry year after year who never think of such things. An hour's time spent is all that is required to construct a bath place for your fowls—an open frame box of suitable size for the number of fowls, filled with road dust, fine loam or sifted coalashes, and placed in the hennery where the genial rays of the sun will keep it warm, dry and dispel the effete matter, is all that is necessary. To make it more effectual the addition of sulphur and carbolic powder should be thoroughly incorporated with the dust. Avoid using wood ashes that is wet or damp for a bath, as the lye will injure the fowls, feet, head and wings. Renew the dust in the boxes once in a while, and feel thankful at the same time that you are following nature in her wise provision and teaching and doing an incalculable benefit to your fowls.

Now is the time to take particular care to remove all hay, straw or other litter from the nest, supplying fresh; and turn over the roosts often and see if you can find any lice.

Poultry Breeders.

There are a great many complaints about dishonest poultry fanciers and breeders; and a great number set the whole fraternity down as so many sharpers. There is a prevalent idea amongst some that one of the most common ways of dishonest dealing is spoiling eggs by dipping in hot water or something else to destroy their fertility. There may be such scoundrels in the egg trade, but we think they are few—at least there does not seem to be sufficient motive for any breeder to spoil his eggs, because unless he only intended to carry on his operations for one season, spoiling eggs would be the most suicidal policy he could adopt. There is no doubt that a great number of the eggs sold at fancy prices do not hatch, especially if they are shipped a long distance and badly packed. But there are other causes that conspire to render eggs infertile. When a breeder has got a good run on the sale of eggs by advertising, he mates too many hens with one male in order to keep up his supply of eggs. The consequence is a number of the eggs are not properly impregnated. Again, during a season like the past, the cold weather has had a



NON-BEARDED SILVER SPANGLED POLANDS.

serious effect, first on the physical condition of the birds and their potency, and again on the eggs themselves. Another cause which has contributed to disappointment in hatching is improper packing and careless handling by express companies. By any kind of proper management eggs may be carried for a thousand miles, as well as ten, without injury.

There is a real source of dishonesty among a number of poultry-breeders, which has been brought before our notice, and that is parties advertising several breeds of fowls, and eggs which they do not own themselves, and rely upon somebody else, often to people who may have a certain breed, but which have impure blood and which have been carelessly bred. These are sold probably at high prices and pawned off on to purchasers as the "simon pure," and hence the country gets flooded with a class of poor fowls, and the good breeders come in for a share of blame with the hucksters. The jobbers in poultry, through ignorance, are doing all the damage to the first-class breeders. There is not one man in ten who raises poultry that really understands the different breeds and the principles of breeding, and hence one half of the so-called pure bred fowls are nothing more than culls and mongrels. Our genuine breeders are always willing and anxious to hear of the success of their eggs, and to duplicate orders in case of failure.

Hens Eating Eggs.

We clip the following from one of our exchanges, but do not endorse the sentiment in regard to the matter. Perhaps it is worth a trial:

The cause of hens eating eggs is well known to be the want of shell-forming material in a convenient form to suit the want of laying hens in confinement.

This want must be supplied, else egg-eating for the sake of the shell begins. A laying hen can be started to do it in a very short time by withholding the necessary supply of lime. To supply this I give lime in the water my fowls drink. I send to the pastrycook's and get him to fill a cask or basket of egg-shells; these I throw plentifully into the corners of the runs daily and as regularly as they are fed, and with an experience of twenty-five years I have never known a hen eat her eggs unless when I failed to supply my stock as above described. I have suffered from hens I got in for setting purposes eating an egg or two, and I at once put within their easy reach egg-shells, plenty of food and water, and no more eggs disappeared.

I was very unwilling to try the use of egg-shells when my attention was first directed to them, remarking that it would teach the hens to eat their eggs. I know better now, and mine have them *ad libitum* and fresh, and I can with confidence advise anyone to try this plan.

Economy without Stint.

One point of great importance in feeding chickens is to feed often, but never to give more at one time than they can eat with appetite. They should be fed early and late, and of such quality and kinds as will satisfy them best without leaving any food to get sour or trampled under foot. One can be generous without being extravagant, and it is very easy to incur a serious loss annually, where a large number of fowls is kept, by following an injudicious and slipshod way of feeding.

All kinds of fowls should have a sufficiency of food without being over-fed. In the spring and summer months care must be exercised with the Asiatic breeds that they are not over-fed to fattening. These heavy birds must be fed more sparingly than at other times, or the hens will put on internal fat very easily. This either

breaks them down, if they are aged, or stops the younger ones from laying generously. Nature will not supply these fowls with increasing fat and flesh and egg material at the same time.

It will not do to keep the fowls in a state of semi-starvation, for then the hens will lay but few eggs, and those intended for killing are so attenuated in flesh that a considerable outlay is necessary to get them in a presentable condition for the table.

A correspondent to a contemporary says:—"Some time ago I found a very simple plan of storing eggs in dry ashes, and ever since I have adopted that system with very satisfactory results. Though rather fastidious about eggs, I have frequently eaten and enjoyed eggs that had been in the ash-box for more than four months. But this week I have tested the system still more severely. A box of ashes, that had been used for storing eggs, was laid aside as empty until two days ago, when a solitary egg was found in it that had been laid on May 5th, 1882. Though more than a year old, the egg was perfectly good, and formed part of an excellent pudding the same evening. The only necessary precautions seem to be these: to see that the ashes are quite dry, and to see that the eggs do not touch one another."

Temperature and purity of atmosphere have much to do in keeping eggs pure.

Correspondence.

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 ½ ounce. We do not hold ourselves responsible for the views of correspondents.

Cottages in the Country.

SIR,—Attention is drawn to this subject, and until farmers build cottages on farms, they never will have sufficient men in the country. Many farmers object to hired men in the house, and many men do not like to be mixed up with the farmer's family. To hire out for two, four or eight months, is not profitable to young men, as they are always changing places. Another thing, some farmers' tables do not suit some men. They may sit down at the table with the "boss," but men who have to work on the farm want to sit down to the meat, viz., beef, mutton, cheese, etc. Farmers, if you want men, why build cottages and get your daughters married. You might as well build while wood is plentiful. W. A., London E. O.

SIR,—I see among your replies to correspondents a few lines of advice concerning the best time to sow plaster, in which you say "when the plant is about six inches high." I have no doubt from this that you consider the sole benefit to the plant is derived from the attraction of ammonia and moisture from the atmosphere, and none from any chemical action in the soil caused by the sulphate. This is the old idea, and I believe is incorrect. I would like to state an opinion formed from a more than usually extensive acquaintance with the use of this article, farmers' experience, and the latest views of chemists on the subject. It is that plants which are partially composed of sulphuric acid and lime do derive direct nourishment through the roots from the sulphate of lime in the same manner as other crops are supplied with phosphoric acid, potash, &c.—in other words that gypsum or land plaster, known to science as the sulphate of lime, is a direct fertilizer as well as a stimulant, because of its power of absorbing ammonia from the atmosphere. Ruckert, Humphrey, Davy, Braconnet and Sprengel, who wrote years ago, took this view that land plaster was an essential constituent of plants, and experience has shown them to have been correct, because wherever vegetable mold is found to be deficient in this sulphate of lime, gypsum meets the want. This is explained by Doheran on the strength of analysis and vegetation experiments of his own, by assuming "that it converts the carbonate of potash of the soil into sulphate, which, being less obstinately retained by the soil, more readily enters into the roots of the plants." It can be demonstrated beyond the possibility of doubt in this section, where land plaster is more extensively used than in any other part of Ontario, that the chief cause of the failure to effect the crops of clover for several years was because farmers fell into the habit of waiting until nearly all other spring work was done before they sowed their plaster. Then, if the crop had got a good start, and the season proved too dry, the plaster was not dissolved and but little good resulted. Those who have tried the plan of sowing early, even on frozen ground, have found the increase far beyond their expectations; and the second slight dusting, after the plant is up two or three inches, will certainly attract moisture and ammonia, and ensure all the benefit which can be expected. CANADIAN, Paris, Ont.

[Our correspondent is not justified in drawing the inference he does, that we consider the sole benefit of plaster or gypsum (calcium sulphate) is solely due to fixing or attracting ammonia. Our answer to the correspondent in question in the June number would bear no such construction. We know that ever since a German workman discovered the fertilizing effects of plaster from the ranker herbage which had been sprinkled with plaster dust, the *modus operandi* has been a subject of dispute among agricultural chemists. That calcium sulphate—gypsum—fixes the ammonia, is evident from the following: Carbonate of ammonia and sulphate of lime—gypsum—cannot be brought together at common temperatures without mutual decomposition. The ammonia enters into combination with the sulphuric acid, and the carbonic

acid with the lime, forming compounds which are not volatile, and which are retained in a condition serviceable as manures. Hence the evident influence of gypsum upon the growth of grasses depends very much, we do not say solely, upon its fixing in the soil the ammonia of the atmosphere, which would otherwise be volatilized with the water which evaporates. The carbonate of ammonia contained in rain water is decomposed by gypsum, and becomes available as plant food. So much for the fixation of the ammonia contained in rain water; but gypsum exerts a two-fold action in our opinion. Chemically the power of decomposing carbonate of ammonia and of fixing the ammonia, our correspondent should recollect, is not peculiar to gypsum, but is shared also by other salts of lime (chloride for instance). But gypsum acts as a sulphate on humus or vegetable mold, as our correspondent refers, but supplying no deficiency in plant food, but making that available which already existed. Hence gypsum can be replaced as a manure by a salt of lime with ammonia, and a salt of sulphuric acid. Sulphate of ammonia could be substituted for gypsum, and would exert a more rapid and effectual action. The opinion or assumption of Doheran that the conversion of carbonate of potash into a sulphate makes it more available to the plant is only hypothetical and doubtful. Sir Humphrey Davy ascribed the fertilizing properties of Paris plaster to the sulphur which it contains; Chaptal to its regulating the solubility of salt in the soil; Liebig to the fact that it possesses the property of fixing the ammonia in rain water; Dr. Muse that the chief efficacy of gypsum arose from its tendency to produce phosphoric acid. What a diversity of opinion even among eminent men! And no doubt each would think the other incorrect, as our correspondent thought we were. All these investigators were right probably, so far as they went, but we think were all wrong in ascribing to plaster a single property, when its action, we have reason to believe, is complex. Plaster, in our opinion, possesses two distinct and separate functions, and whilst it may act directly as nutriment to a certain class of plants, it certainly acts indirectly by fixing the ammonia contained in the atmosphere and in the dew and rain and snow, which are thence derived, and thus furnishes additional food of a stimulant nature to the same plants. The leaves of plants play a much more important part in vegetable economy than is generally ascribed to them, as they serve not merely as lungs, but as mouths also, absorbing the food supplied by the atmosphere, just as the fine fibrous roots collect the food supply from the soil. Plaster acts principally upon the leaves of plants, increasing the stem and foliage, and is, therefore, much better adapted to certain forage crops than to the cereals, and hence we claim that plaster acts more beneficially upon clover when its leaves have fairly expanded, and with the least advantage when applied directly to the soil. Gypsum produces but little effect when buried in the soil, except when spread upon a clover meadow before it is turned down then by arresting the volatile ammonia it exerts a marked influence upon a succeeding fall wheat crop, especially as the constituents of wheat and clover are similar. Hence we contend that in the majority of cases the plaster acts more beneficially upon clover when its leaves have fairly expanded; or, as we answered our correspondent from Campbellford, when the plants are about six inches high.]

SIR,—I have a field of clover seeded last year, which I intend to put into oats and peas next spring. If I do not plow it till spring the frost will likely throw up the clover; but spring crops seem to grow better on ground plowed fresh in the spring than on fall plowing, whether it is ganged in spring or not. Will the frost throwing up clover in winter lessen its fertilizing powers? We prefer plowing our summer-fallows in the fall before, but not for spring crop.

W. B., Ripley, Ont.

[We advise plowing down the clover as early in the fall as possible, and for this reason that it takes a long time for green manure to thoroughly rot in the ground, and hence it could not be expected that if the clover were plowed down in the spring that the plant food would become directly available to a crop of peas and oats; although our correspondent might have a good crop of both by plowing in the spring, from the fact that the land had rested and a process of nitrification had taken place during the time the clover was growing and covering the ground; but any beneficial results

from the decay of the roots and leaves of the clover could not be expected if plowed down in the spring. Another reason why plowing down in the fall would be preferable is that there would be a large enough mass of vegetable matter (all the second crop should be left) to cause rapid and constant fermentation or decomposition when plowed under.]

SIR,—How can I prevent a horse from eating his oats so fast? By answering the above you will greatly oblige.

N. MILLER, Chippawa, Ont.

[Put a handful of small pebbles in his oats for a time. In order to avoid picking up the stones, he will eat carefully.]

SIR,—I noticed in the June number that you wished to hear if anyone tried the "piercing of crust on the snow over the wheat last winter. I tried it before noticing the item in March number. My wheat is killed, but not so bad as it is generally over the country. I think the greatest injury was done as the snow went off; thawing and freezing alternately forming an ice close to the ground. As the sun shone on the ice it burnt the wheat the same as though you placed a glass over it. I know of a farmer who, if an ice forms on a low flat on his wheat, will go over and break it up, saving his wheat. I did so winter before last on ice that covered an acre, and it came out in the spring all right. As to the deep snow smothering the wheat, I do not understand; in some fields along the fences it is all killed, while in others the only wheat that is of any account is growing by the fences—a regular contradiction which I would like to have explained.

W. T., Paris, Ont.

SIR,—In your answers to correspondence please reply to the following: Please give me the cause and cure for cotted wool in sheep. Also name of bug, and what will kill it, that destroys the leaves on the Guilda Rose? Also the cause of leaves on the Heliotrope turning black?

B. A., Lucknow.

[Cotted wool in sheep may arise from different causes, and one of the most fruitful is a low condition of the animal, either from improper feed or close confinement. The lack of succulent food, for instance, may cause it, although fed ever so well on grain and hay, and hence turnips fed regularly are essential to sheep during the winter. As cotted wool is caused by an unhealthy action or disease of the pores of the skin, when once contracted it is liable to remain. Once a cot always a cot. 2.—The bug or beetle you mention belongs to the genus *Cetonia*, and is common all over; try hellebore sprinkled on the leaves. 3.—The cause is not watering regular,—giving too much or too little at one time.]

SIR,—I have a cow aged 9 years, which I tried last summer to put dry and could not, and am now keeping her in a bare pasture, milking her occasionally, yet all seems to be a failure; and any information in the columns of the *Advocate* will be thankfully received by a SUBSCRIBER, Bristol, P. Q.

[The first thing you should do is to take your cow out of pasture and feed nothing but dry hay—no succulent food. Then only partially milk night and morning, and if the udder is not too full omit night or morning, and so on gradually every other day, &c., until the milk supply is diminished. Be careful to see that the bag does not cake.]

SIR,—I would like to trouble you with a few questions: First, how can I make first-class cider vinegar? How would it do to spread long straw on the ground after the wheat is sown, and let it come up through it to protect it in the winter? Also where can I procure the Cow Pea spoken of in the *Advocate* a short time ago? Please answer through the *Advocate* and oblige a

W. H. McM., Brampton, Ont.

[Exposing cider to the air under a warm temperature will produce the acetic fermentation required. Mulching wheat fields is an excellent plan for more reasons than merely protecting the plant. The Cow Pea can be had from most first class dealers in seeds.]

SIR,—Can you inform me where a machine could be procured for the manufacture of the Amber Sugar Cane, that is, a press, &c., for making syrup, &c.? Any information will be thankfully received by a SUBSCRIBER, Campbellford P. O., Ont.

[Write to M. Beatty & Sons, Welland, Ont., for their circular.]

SIR,—I have just noticed a question asked by "Quebec," Indian Head, N. W. T., in regard to clovers, and as to kinds of grasses best adapted for seeding down; and as my experience may be of interest to your Manitoba and North-west readers, I may state that I seeded down two acres of land with timothy, sown with spring wheat, last year. It headed out nicely last season and has stood the winter well, and those who have seen it pronounce it a fine crop. I also know of settlers in this district who have seeded down with a mixture of red and white clover, and alsike and timothy, and it is looking fine. LINCOLN, Birtle, Manitoba.

SIR,—Is rye to be recommended for pasturing early in the season? also is any special care needed in keeping animals off while it is wet? What treatment would you recommend for a cow that gives bloody milk? W. B. M., Cashtown.

[Rye is recommended for early pasture, and is excellent for both fattening and milk. On light, sandy soils cattle might be allowed to graze during rainy weather, but on heavy clay soil running stock on would be decidedly injurious. If the bloody milk arises from congested glands, give $\frac{1}{2}$ a lb. of Epsom salts, followed by 1 oz. of saltpetre, restricted diet and bathing with cold water. If from acrid plants, withhold them, give a laxative to clear away any yet retained in the stomach, and follow up with small doses of saltpetre and acetate of lead. If from partial congestion, with but little heat or tenderness, rub daily with compound tincture of iodine, mixed with three times its bulk of water. Milk carefully and gently.]

G. F. M.—The Cockshutt Plow Company, of Brantford, Ont., manufacture Sulky Plows specially adapted for the Prairie. We know of no better firm for you to apply to, either for a plain breaker or sulky. They procure the best material and adopt the latest improvements, and are an honorable and reliable firm; they make a specialty of plows and cultivators. Should be very careful of transacting business with the agent that informed you that he could supply you with a better plow made in Canada.

[Several letters are unavoidably crowded out until our next issue.]

Family Circle.

MONSIEUR LE PASTEUR.

A STORY IN THREE CHAPTERS.

CHAPTER I.

Service was over. The last hymn had been sung with all the vigor of mountain lungs; the last wooden shoe had clattered down the paved aisle; the last voice had died away on the still, pine-scented air, and then the minister lifted his sad young face off the worn cushion of the high narrow pulpit and came slowly down the steps into the church.

Outside, among the hills, the sunshine lay in belts from peak to peak, and the Sabbath stillness was unbroken save from the hum of bees or the far-off slumberous twittering of birds; but the four whitewashed walls of the ugliest building in the whole canton held only straight-backed pine-wood pews, homely and inartistic, and square ill-fitting windows that dimmed the daylight without owning the power to exclude chill draughts or keen north-esters.

The minister sighed as he lifted his hat off the little deal table fronting the pulpit, and went slowly out into the sunshine. Perhaps the unloveliness of his surroundings forced itself with scarcely recognized intrusiveness on his notice; perhaps his thoughts, following his heart, had escaped his control and were far away.

On the narrow path between the patches of scanty turf belonging to the still churchyard among the pines, the old sexton paced slowly, sunning himself in sabbatical solemnity.

"You are waiting to lock up, Carton?"
"Yes, sir."
"There was a very good congregation to-day?"
"Very, sir."
"It is lovely weather even for August."
"Yes, indeed, sir."

Having uttered the familiar words of salutation which, week in, week out, scarcely varied, the minister passed on between the low graves that lay to either side of him, and approached the high road.

He was a man of seven or eight and twenty, or thereabouts, slight, dark, delicate-looking, with an indefinable something about him speaking of culture and scholarship—a something odd and out of place in the remote little parish on the upper ranges of the habitable Alps, where a score or two of peasants loved him and called him "M. le Pasteur." Of course they did not understand him, but thorough comprehension is not an essential of reverence, and they understood enough to know that he was very wise and learned, and so far above them that he must be very close to heaven. They were little afraid of him, of course, but that was only right and fitting—far more afraid of him than the children were, who took him flowers, and their best wood-carvings and pieces of honey, when such things could be spared for presents by careful mothers at home.

Chased by the unusual warmth of that summer day, the mists had shrunk and shriveled into obscure corners of the valley. In the higher air a score of larks caroled joyously; from the neglected turf on the quiet graves the bright-eyed daisies raised their innocent faces smilingly.

Nature was fair there for once, and he shivered as he looked

around him. Did not even the beauty speak of loss and isolation and death?

"You have kept me here so long! I thought you were never coming."

"Did you wait for me?"

"Yes."

"How good of you! I never thought of that."

He had lifted his hat hurriedly, and was standing bare-headed before the girl who had addressed him.

"We shall part for good so soon, and you have avoided us so much of late, that I must make occasions of seeing you."

"You are very kind."

"Kind to myself, yes. Do you think I am so little grateful as to owe you all I do without—loving you somewhat in return?"

Loving him! She had said the word quite simply, translating into her sweet hesitating French, yet he quivered as needlessly and stupidly as though he had misunderstood. He muttered something in his throat, not looking at her, but at the ghostly mists in the valley.

"Do you know why I waited for you here?" she went on, looking at him with mingled laughter and sorrow in her sweet blue English eyes. "Because it was here I met you first, and here it seems fitting somehow to talk with you last when I am so sorry. It is nearly a year since we came here, mother and I, and took possession of you, because we were strangers, and you were the only civilized inhabitant in our newly discovered territory. And you were so kind—do you remember? I knew at once that I should like you, though I did not guess how dear everything here would grow."

He could not speak. He was leaning on the rustic gate, with his haggard face resting on his hand and his eyes averted.

"And you took us to the sweet old chateau—do you remember?—and told us you knew Madame la Baronne, and that she would let us have her house while she was in Italy. And do you remember how anxious mother was that you should be quite sure we were not adventuresses, and how she referred you to the Ambassador at Berne, and how you set all explanation aside with the perfect courtesy that is only learned in the schools of France?"

"I remember something of all this."

"But I am sure you don't remember all the pleasure you gave; how you used to read to us by the fire and play the organ to us in the old hall, and cause us to forget all the joy and pain of England."

"Don't!"

He raised his hand with a gesture as though he would avert a blow. And the vague sadness in his face had expressed itself at last, and it was pain.

How cruel she was in her sweet kindness, how cruel to remind him of all he had gained, of all he was so soon to lose! Ah, those dear dead days in which she had been all the world to him, those long bright evenings in the old, shadowy, fragrant rooms of the castle, amid the mellow lights of the wide hearth and the many-armed chandeliers; with the organ beneath his fingers interpreting all he felt, and the glow from the fire falling on her face and finding out the dimples on her cheek, the sweet curves of her neck, or the fragrant blossoms that rose and fell with every breath she drew! How cruel she was to recall it all, as he stood here in the chill sunshine, while shadowy hands beckoned her way from him!

"Is there anything the matter?"

"I am weary—that is all."

"So I thought to-day, and that is another reason why I wish to speak with you. You look so ill during service, and your sermon was strange—not glad as when I knew you first, but only resigned, as though you were trying to suffer and be strong. You are not unhappy?"

"Oh, no."

"Because, if you are, no one will be sorrier than I, no one having so much right. You have done so much for me," she went on with a little quiver of the lips; "you have made the world seem tolerable after I had grown so weary of it. You have taught me strength for the acceptance of pain and the doing of duty. But for you I should never have had courage to go back to England."

He laughed harshly and mirthlessly.

"Then I have sent you away."

"I think so."

"That is so like my fate."

"What do you mean?"

"When you go away my sun will have set; all my future will be spent in darkness then."

She shrank away from him, and the sweet roses in her cheeks paled a little.

"I did not mean to tell you," he went on.

"The knowledge will pain you, and do me no good. But you have come to me in my weakest hour, and so I must speak. I love you, have loved you always since I knew you. It seemed to me once that heaven had sent you here, being satisfied with all I had tried to do, so I drew the reins on the neck of my heart and let it go, but I question if I could have restrained it in any case. There, now, the murder is out. I think I shall die when you have left me."

"Oh, no, you will not, M. de la Roche; there is much of life left when love is over. But all the same I am very sorry that I have brought you pain like this."

Her lips quivered as she spoke, and two tears fell slowly down her face.

"Do not weep. Where there is no self-reproach there should be no sorrow. I never thought you would learn to love me. All that I did hope and believe was that you would be near me always, and that I might, unhindered, see your face at times."

"And I would stay if I could, for the thought of England is a load on my heart; but there are other girls at home, and my brothers, and it seems wrong that I should chain my mother here because I am a coward."

He did not say that there was a way out of her difficulty, that if she could stay for him she could stay with him; having no hope he had no boldness.

"You believe I am sorry, don't you?" she said, looking up at him with wet eyes; "you believe that if I had dreamed of this I should have avoided you, as you have avoided me; and you say you will forgive me before we part, and you will come and see us at times till I leave; and you will write to me and let me know when you are happy again?"

"Oh, yes, if you wish."

"Then good-bye for to-day."

"Good-bye; forgive me if I let you go down to the chateau alone. I feel as if I could not be in your presence and refrain from pleading."

He held both her hands, looking down on her, and then he said huskily: "Will you kiss me? I never thought to kiss a woman till you came. Now—well, I think I have a right to that at least."

She raised her sweet face to his, trembling, and he kissed her, as we kiss the dead.

And then he turned and went slowly up the hillside alone.

CHAPTER II.

"Mother, I have something so odd, and strange, and sorrowful to tell you."

"What is it, dear?"

"Mrs. Carrington lifted her eyes from the Tauchnitz novel she was reading and looked at her daughter standing in the circle of the firelight on the hearth.

"It is something that makes me feel at once honored and ashamed, proud and sorrowful."

"Well, what is it?"

The girl came close to the chintz-covered couch on which her mother lay, with a colored Afghan rug over her knees—for to Mrs. Carrington the mountain air was always chill—and stood there hesitating.

"Oh, no; it is only this: M. de la Roche loves me."

"Dear Connie, I am so glad."

"Why, mother?"

"Because he is a good man and a gentleman, and I am sure he will make you happy."

"Darling mother, you surely have not forgotten."

"No; but I think it is quite time you had, Connie. I am ashamed to think that you should ever cast a backward thought on Frank Dalby, shamefully as he behaved. He is not worth remembering."

"Perhaps not; but still I cannot forget him," the girl answered, crying softly with her hands clasped about her knees, and her fair hair tumbled over her forehead.

Mrs. Carrington rose and came over beside her daughter, and drew the fair troubled face on to her breast. "You were always my favorite child," she said huskily; "the first and the dearest, and I have tried always to do for you the best that I knew. I have no interest in life that is not bound up with your happiness. I have been your slave and your servant ever since your undeserved sorrow came. Do I not, therefore, merit a little thanks and consideration?"

"You do, and I am trying all I can to please you; is it not for your sake that I have consented to go back to Farnleigh?"

"Yes; but now I want something more of you."

"What is it?" There came the hunted look of a brave animal into the girl's eyes as she spoke.

"It is that you try to love M. le Pasteur. Oh, indeed, it will not be difficult, Connie, if you only try. He is so good, so true a gentleman, so grand a Christian; and then you would make him so happy."

"It would seem like sacrilege, and it would not be fair to him," the girl answered below her breath.

"Quite fair when he knows all," she rested her face against her mother's knee for an instant, and then she looked up, smiling sadly through her tears.

"Two years ago, had I loved M. le Pasteur and desired to marry him you would have thought me mad."

"Yes; because two years ago I was proud and foolish," but in her heart the mother was thinking, "Two years ago your life was unspoiled, now there are only fragments left for its rebuilding."

"Could it be right to marry him?"

That was the question the girl sat asking herself over and over as the wind rose and whistled among the pines. Once she would have thought it wicked to do so, but now if it would make him happy, and if he chose her, knowing the truth.

—That kiss which he had placed on her lips an hour before had convinced her that she cared for him, not with that proud, shy fondness of that long ago love, but with a tenderness that perhaps was as worthy of him.

And then to be here always with the simple mountain folk, while she faded from the minds of her English friends and was forgotten! That would be pleasant. She loved the blue valleys, the misty heights, the silvery music of the cowbells, and the simple faces that smiled on her with mingled awe and admiration. Yes, she could be happy here, not in the old, full-bodied, triumphant way, but far happier than by any other coming possibility.

She sat smiling at the firelight, and the tears had dried from off her face, and then she turned to her mother. "He will never ask me again; he took as final all that I said to-day; if I mean to marry him I must ask him," she said.

So Mrs. Carrington knew that, half-unconsciously, Connie had made up her mind.

The long evening passed, and he did not come, and the *soiton* was dull without him, though Connie feigned not to miss him, and made vague imitations of his favorite music on the organ, and traversed his reading aloud by the fire. And in the morning he did not appear either, though the world donned her fairest aspect, and the edelweiss that he had given Connie a day or two before, to bring her good fortune, raised its petals afresh as though it had taken a new lease of life.

"He is breaking his promise of coming to me, the wicked man," she said to herself; "then I must go for him and bring him here, and make my recantation."

She put on her little hat and tied a soft silk scarf around her slender throat, and then she looked at herself in the mirror with a little interest and pity.

Would they live at the chateau when they were married? she wondered, going slowly upward through the gloom that the pines held always in their embrace. Or would he take her to the little wooden parsonage-house with its balconied windows and verandah? For the first time in her life she thought that she was something of an heiress gave her pleasure. Her money would tend to make Henri de la Roche happy, and it was long since she had genuinely believed him the best man under the sun. He was as high above that other man as the stars; but she sighed a little as she admitted this, perhaps because she was too earthly to be entirely sympathetic with a star.

"Of course, I must tell him everything," she thought, advancing slowly, with bent head. "I wonder will he mind very much—I wonder will he find enough to refuse to have me then?"

The idea startled her so that she stood still a moment to think it over. It was quite possible that he might think what she had told so sad, not to say shameful, that he might cease to love her because of it. Well, that would not be her fault; she meant well, and she would tell the truth, and the end of it all was no longer within her power.

She was a little saddened, as though a meditated kindness had been already rejected, but that thought did not hinder her—indeed, nerved her rather to the effort that was before her. "If I tell him I shall try to love him, the choice will then be with him," she said, and went slowly forward till she heard the pebbles on the path above crunch beneath descending feet, and saw a shadow fall athwart her passage.

g, and he kissed
 the hillside alone.
 strange, and sor-
 Tauchnitz novel
 standing in the
 ce honored and
 ouch on which
 er her knees—for
 ways chill—and
 ves me."
 n, and I am sure
 otten."
 Connie. I am
 east a backward
 behaved. He is
 im," the girl an-
 about her knees,
 e her daughter,
 st. "You were
 "the first and
 for you the best
 is not bound up
 and your servant
 I not, therefore,
 e you; is it not
 k to Farnleigh?
 you."
 ook of a brave
 Oh, indeed, it
 He is so good,
 ; and then you
 d not be fair to
 rested her face
 then she looked
 and desired to
 d and foolish."
 Two years ago
 agments left for
 herself over and
 e pines. Once
 b, but now if it
 owing the truth,
 hour before had
 th that proud,
 tenderness that
 mple mountain
 English friends
 She loved the
 asie of the cow-
 with mingled
 py here, not in
 r happier than
 had dried from
 ner. "He will
 t I said to-day;
 said.
 iciously, Connie
 come, and the
 feigned not to
 vrite music on
 the fire. And
 ough the world
 at he had given
 fortune, raised
 lease of life.
 me, the wicked
 him and bring
 k scarf around
 rself in the mir-
 were married?
 the gloom that
 would he take
 h his balconied
 in her life the
 iress gave her
 enri de la Roche
 ly believed him
 gle above that
 tle as she ad-
 arthly to be en-
 he thought, ad-
 r will be mind
 refuse to have
 ill a moment to
 ight think what
 e he might cease
 e of her fault;
 and the end of
 titated kindness
 did not hinder
 that was before
 the choice will
 forward till she
 neath descend-
 ssage.

"Monsieur, mon ami!" She extended both her hands to him, and stood before him rosy as the dawn, beautiful as embodied womanhood.
 "Where were you going?"
 "To look for you."
 "I am here." He looked so worn and haggard that his aspect struck her with a new consciousness of pain.
 "I came to meet you, because I have many things to tell and ask you," she said, with a gravity that made him tremble.
 "About what?"
 "About you and me, and all you said yesterday."
 "What did I say? Some folly, I suppose, to make you sorry?"
 "Oh no; something to make me feel very honored, something to compel a confidence of mine in return."
 She sat on a boulder that jutted over the pathway as she spoke, and he dropped at her feet, with his face resting on his hands and his eyes averted.
 "If he would not look at her, would not speak to her, how could she say the strange thing she had come prepared with?"
 "I told you once that I had no heart. Do you remember?"
 "Yes."
 "And you did not ask the reason?"
 "No; friendship receives confidences, it never seeks them."
 "Then you do not care to know anything about me?"
 "Nothing but what you wish to tell."
 "Why did he not help her a little? Why did he oblige her so remorselessly to go on?"
 "Then I wish to tell you I was going to be married once."
 "I thought as much."
 "The man was—I don't know what he was, but he suited me; that is why he has been hard to forget. If he had been greater, perhaps I should have loved him less, for I am not great. But I did love him. I never could give such a love to another."
 He shivered a little, lying at her feet, but he did not speak.
 "We were to have been married. I was very happy. Everything had gone smoothly, every one was pleased. The wedding day came, and his brother, a Pastor like you, was to marry us. I went to the church in all my bravery of bridal finery with my brides-maids and my friends, but he did not come to meet me. I never saw him from then till now."
 Her voice had faltered, but it was the man's face that was quite white.
 "And what did it mean?"
 "I don't know, I never heard. He sent me a note that night by a messenger. It only said he was miserable, and begged me to forget him. When I knew that no accident had kept him away from me, that he was alive and well, I left home with my mother, that among new scenes I might learn to forget."
 "And have you succeeded?"
 "Yes, in a measure, so that I can make a statement quite truthfully and offer you something quite honestly."
 "And what is that?"
 She blushed and her eyes fell.
 "You have told me you love me."
 "And it is true, God knows how true."
 "Then in that case, if it would make you happier to have me as your wife, I shall stay."
 He was sitting upright now, white as marble in the growing darkness.
 "You would remain with me always as my wife, far from all the pleasant things that have made your world so fair? Do you mean that?"
 "Yes."
 "Then you must love me."
 "Perhaps I do, unknowingly. At least I am sure I shall love you one day."
 He had roused her to a warmth of which she had deemed herself incapable. She had come to him conscious of her own generosity, and now she was actually eager that he should take her at her word.
 His face had changed; it glowed so that it seemed quite beautiful.
 "I am not worthy. Heaven is too good," he said, taking off his hat as though he were in a sanctuary.
 She was awed. Did she merit a love like this?
 "I shall try to make you happy—try with all my heart," she said, her lips quivering.
 She did not understand him; she would never understand him as long as she lived. Instead of answering her he dropped on his knees beside her and hid his face in her dress, sobbing.

CHAPTER III.

She would marry him. She had come to him of her own accord—heaven-sent, doubtless. And she loved him. He had not dared to believe that at first—only divine pity and tenderness could have inspired her—but as the days passed, circumstances brought conviction, and the doubts and fears melted into rapture.
 Unless she loved him could she have been so joyous in his presence, so tenderly concerned for him, so sweetly careful lest he should be sad or weary, so proud of him in his greatest hours, so sympathetic when he fell below them? They were to go to England for part of their honeymoon, that he might learn to know all her friends; and then they would return to the familiar but glorified life among the hills. His happiness exhilarated him sometimes, at other times it oppressed him like a burden. What was he that so much good should befall him, while other men were dying for a gleam of sunshine, starving for a crumb of joy? He had loved humanity always because it suffered; he would love it better now, since he had escaped from the common lot.
 The world seemed transfigured, as he stood on the path which wound from the valley up through the woods. Rays of light, like blades of silver, pierced the soft greenness of the rolling mists, and the drops of moisture, greming every leaf and twig, sparkled as though a shower of diamonds had fallen. How fair nature was; how good God was; how devoted to holy works would he make all his future, as a thank-offering!
 She loved him—would love him more. She had said so.
 His mind was so full of her, that her voice, breaking in on his reverie, did not startle him. He put aside the boughs hanging over the fallen tree on which he had seated himself, that he might see her as she came along toward him. Having done so, he could no more have dropped the verdant screen that would have hidden her from his gaze than if he had been turned to stone. She was not with her mother, as he had thought. A man accompanied her, a man whom he recognized at a glance, though he had never heard him described. Stouter than a Celt, fairer than a Swiss, with bold blue eyes and blonde hair, and a military swing in his gait, and beauty that even the sullen, reproachful anger in his face could not mar—De la Roche knew he was looking on Frank Dalby.
 The girl's face was pale and tear-stained, her eyes were bent

fixedly on the ground, her hands clasped before her in an attitude of resignation.
 "You have not the slightest right to blame me," she was saying, "as little as you had to seek me out, that you may torture me now, when it is too late."
 "And who made it too late?" he asked sadly.
 "Who ran away and hid herself, and made explanation and atonement impossible?"
 "Did you not tell me to forget you?"
 "I did, but it seemed the only thing to do then."
 "As it is the only thing to do now," she said quickly.
 "Oh no, for I am free."
 "But I am bound."
 "Only bound by your own word. I was bound by a lawful fetter."
 "And what a fetter!" she cried, her eyes flashing, her chest rising and falling hurriedly; "a fetter that held you to a dancing woman whose name you dared not mention at your home! And after such a marriage tie as that, you come to me with falsehoods about your love, and win my stupid heart, to break it and disgrace me you being married all the time."
 "Did I know then that I was married? Is my oath not enough? Are the facts not proof enough that I thought her dead? How could I know that she was too evil even to burn, when the theatre she was dancing in was left a shell? How did I know that she would bide her time to come back and be avenged, with wicked cunning, when I might have been happy? And you reproach me that I had not told you about her. You think that, false in one thing, I must be false in all. Was it a fitting story to bring to a pure woman, the story of that old sorrow and shame? Was the grief of my youth likely to crown my manhood in your eyes? If I did wrong, have I not suffered enough? And as to her, had I been older and wiser, I should not have married her; in which case, in yours and all other eyes, I should have seemed blameless."
 There was a hard, sneering emphasis in his tone which hurt the girl.
 "Oh no, Frank, don't think us worse Pharisees than we were, and forgive me if I have seemed to doubt you. You see your coming was such a sudden revival of the buried pain, that I hurt you more than I meant, perhaps, in self-defence. We have both suffered, and whichever of us erred has atoned, and now we may part friends."
 "Then you mean us to part?"
 "What can I do? There is no other way."
 "Could you not tell this man the truth and let him free you? I suppose he is honest enough to do that."
 "I shall ask him." She was motionless now, her face bravely uplifted, though her tears fell fast. "He loves me far better than ever you loved me, Frank. I know that, though I am sure I don't know why he should."
 "But you love me, and that is where I have the better of him."
 There was an ugly frown on Captain Dalby's brow. It is not every man who can play the last card of the game he has lost with grace.
 "Perhaps I do; but that is my shame and sorrow, and it will not be always, I trust, and know."
 "And you will have nothing to say to me now?"
 "No."
 "Then I need not detain you any longer. I am sorry I intruded on you. Farewell."
 "Farewell." She stood looking after him till he was out of sight, her head held high, her lips pressed together. Then she flung out her arms with a cry: "I do love him, I do love him! How can I bear it?"
 A momentary oblivion seemed to fall on the minister; when it passed he was alone with his despair.
 It was all over, the short-glorious dream in which he had believed himself beloved; the brief frenzy that had lifted him to the happiness of heaven. It was all over, and he was alone with the chill, and the darkening night, and his agony.
 The other man had returned, the man who had wealth, and rank, and beauty, all the things that women love, and her heart had gone back to him, if, indeed, it had ever been out of his keeping.
 Yet how brave she had been, poor soul, in trying to keep her faith; how firmly and gently she had spoken! The thought came to him like a gleam of comfort; at least she had wished to be true.
 He could not think it out; yet the change was too new and appalling. He had sunk from his seat on the tree-trunk down to the earth, where he lay prone, in the attitude of all sufferers, his arms folded above the fallen leaves, and his face hidden.
 He was very miserable—did God know how miserable, and had he been elected to suffer this always? If so, did such a lot fall to many men? Had many such a cup offered to them in mockery, and then withdrawn, leaving them to die of thirst? Did the ark of refuge often fail men so; did the promised land often sink into deep waters, just as weary feet touched its shore? If sorrow like his were a common destiny, then he could accept it more easily; he was not a coward.
 He thought it all over, as he lay prostrate, with the chills of the soil numbing him and the mists enveloping him—how he had seen her first by the little church gate; how she had offered him her friendship, and afterward her love; how he had been passive in it all, or seemed to have been.
 He had been happy enough before she came—happy in resigned expectancy; but she had come, and that was all over. How was he to return to things as they had been? How would he bear the burden of all the heavy, coming years? Why, he was not thirty yet, and his life might stretch out to the allotted three score years and ten. If so, how could he bear it—forty chill Summers, forty cruel Winters, forty years full of days and weeks made up, each one, of hours of pain? How could he bear it?
 He rose tiredly from the earth, numbed and chilled, wet through with the dew and mists, and stumbled blindly upward. His hat had fallen off, and lying among the dead leaves, but he did not miss it. A faint wind had risen, and a pale moon looked down on him mistily through moist, scudding clouds. Along the line of the path which he followed toward the chateau a few houses stood, their wide-open doors permitting broad bands of light to fall across his path, and peals of rustic laughter to greet his ears. How happy the people seemed! He was almost glad now that they had never learned to think or feel as he had once wished them to do. If they had learned, doubtless they would have been less happy.
 Above him the castle towered black against the sky, with yellow gleams where the casement were. He crossed the courtyard twice before he had strength to enter by the little side door, which was left every day ajar for him. For him what a mockery that seemed now!
 He stood outside for a moment, and looked in. There was the old hall, his favorite part of all the house, and there were the pictures he and she had hung together, and the old armor

they had spent a whole day polishing, and the organ which had sighed to his love and rapture a score of times. And now he was looking his last on them.
 He could not bear the sight, lest it should unnerve him. He lifted the latch softly, and went in.
 She was in her favorite attitude by the log-fire, and she started and half rose as he entered. She seemed relieved at first that it was he, before she noticed his stained dress, his haggard face, and the weary trouble in his eyes.
 "What is the matter? Where have you been?" she asked hurriedly with a tone of affright.
 He drew back and put away the hands she extended.
 "I have been fighting a battle and gaining a victory," he said.
 "What battle—what victory?"
 "A battle between my better nature and my worse. The better—I believe it is the better—has won."
 "I do not understand you."
 He came over to the hearth, and stood there in a weary, drooping attitude, with a faint animal sense of comfort in the warmth.
 "You know I had chosen once a hard life—almost ascetic, almost monastic—for myself. Such must fall to some men, I thought. Why not to me as well as to another? and I came here, leaving temptation behind."
 She inclined her head. She could not answer him.
 "But temptation followed me in a guise most fair, most sweet, and I yielded to it."
 He turned away, that he might not see even her shadow as she stood drooping before him, and then went on more steadily:
 "But happiness was not for me. It weakened me; it stood between me and duty, and knowing that, I have come to give it up."
 "Oh, Henri!"
 A wave of uncomprehended feeling broke over her, a consciousness of something like dismay. Was it possible that he had known of Frank's return, and was this his generous way of setting her free? But that could not be. Frank had come and gone so suddenly.
 "You will not try to hinder me—you will not make duty hard by telling me you will be sorry?" He turned to her imploringly as he spoke. "What I am doing is surely best for me. It will be best for you too—at least I shall strive and pray that it may be."
 She came up and put her clasped hands over his shoulder, and looked at him with streaming eyes.
 "Dear brother, if you will have it so," she said brokenly; "whatever seems best to you will always be best in my eyes. I would have tried to make you happy if you had let me, but since you will have it otherwise I consent."
 He shivered as she fell away from him. All was over.
 "We shall ride up to the auberge, leave our mules there, and then walk up to the parsonage, Frank."
 "Very well, darling."
 "Don't you think it was better we did not tell him we were coming, or any of our plans about him?"
 "Of course it was."
 Frank Dalby was not in the habit of pondering deeply on his wife's questions. Women's trains of thought were never worth following, at least so the gallant Captain thought, and a placid assent was all any woman, even the dearest in the world, either desired or expected.
 "He will be surprised, won't he, Frank, to know that I have never forgotten him for a day since we parted?"
 "I should think so, indeed, and unaccountably pleased, too."
 "And don't you think he is likely to consent to my plan, to come to England, and get ordained into the Anglican Church, you know he can be as monastic there as ever he likes?"
 "Of course he'll consent; and you can have him play the organ at your tea-drinkings, and the women can lionize him ever so."
 "Frank, you must not speak so. I don't like it," Connie said gravely. "If ever I knew a saint and a man of genius, it was Henri de la Roche."
 "A saint surely, since he considered you the world, the flesh, and the devil, and renounced you as such."
 The young wife's lip quivered a little.
 "I have a suspicion sometimes, in spite of myself, that he had some inspiration about you, and so gave me up."
 "If that be so I'm very grateful to him."
 Frank stopped his wife's words, that he might kiss her.
 "This is the little church there. How bleak and bare it looks, with all the humble and turf-covered graves around it! Oh, we must take him away from it, we must give him a better field of labor elsewhere!"
 "Of course we must."
 "Of course we must."
 "I was standing just there, Frank, by the gate, when he came down first to meet us."
 "Do you know, Connie, if you talk any more about him I shall begin to grow jealous, and to think you regret him."
 "But I don't, Frank; only it was another sort of life here, and coming back to it affects me—you can't understand how."
 "I can understand perfectly, if you keep crying and making your eyes red over it."
 Connie wiped two tears away furtively, and went on in silence. A little higher was the parsonage house, with its pointed roof and bleak little court and wooden balconies. How still it looked, how lonely, beneath the flying clouds and within sound of the sighing of the pines! Oh, decidedly he must be removed from here, her brother, as she had called him and as he had chosen to be.
 She went up to the door eagerly; the door that had still the natural tints of the wood, and devices carved over its face by the hand of some one who had loved him. Through the open window she could see into his study, fireless to-day, and with the faint light gleaming on the lettered bindings of his favorite books.
 She knocked timidly, waited and then knocked again.
 "They are deaf or dead," the Captain said impatiently, repeating the summons vigorously; and then there was a shuffling step in the passage, the step of the aged housekeeper, and the door opened reluctantly.
 "We have come to see M. de la Roche; is he engaged?"
 The old woman looked at her, looked her all over slowly, from her pretty boots to her flushed, eager face, but did not answer.
 "Will you tell him I am here; say Mrs. Dalby—no, say Connie has come to speak with him."
 The old woman's face changed, a look of loss and trouble stealing over it.
 "Madame has not heard then." Her voice quivered, her head shook a little with the palsy of old age. "Madame comes too late. M. le Pasteur was buried a week ago."—*Adieu the Year Around.*

THE END.

Minnie May's Department.

MY DEAR NIECES,—I wish to say a few words, not only to you, but also to your parents, about money matters. Many families of the present day do away with hired help, especially when there are sons and daughters, who all turn in and do their share of the house and farm duties, which is perfectly right, for all should know how to do them; in after life they may not be called upon to perform, but still must direct. It is also our duty to do our own share to lighten the burden of those near and dear to us. But let me here suggest a plan, which, if adopted, will, I feel sure, meet with their approval, namely, allowing a certain amount weekly or monthly to each child, which they can call their own, be it ever so small, and which can be increased according to your means and their usefulness. I do not mean sufficient for all their requirements, but what is ordinarily termed "pin-money." By so doing your boys and girls become more ambitious and economical, from the fact that

obtain nice furniture, all of which would be a great help at some future day if you were starting house-keeping, for at such times young people are seldom able to afford everything at once, and every article on hand is so much gained. I have no doubt that many of my nieces have tried this plan, and could recommend it from experience. MINNIE MAY.

Answers to Enquirers.

MYSTERY.—1. We think the best remedy for your sickly rose-bush would be to take soot from a stove or chimney where wood is used, put it into an old pitcher and pour hot water upon it. When cool, use it to water your plant every few days; when it is all used, fill up the pitcher again with hot water. This remedy has been known to produce a wonderful effect upon roses that have almost hopelessly deteriorated. 2. The best way to make yourself a good timeist is to count aloud when practising, and to yourself over all doubtful passages when playing before people.

BROWN-EYED NELL.—1. When a visiting card is doubled down at one end it means that it is intended for a second person (usually a daughter), and that the visitors had only one to leave. 2.

The bride's parents pay all expenses of the wedding except the fees. The bridegroom can, if he wishes, send the bride and bridesmaids' bouquets. 4. Bride-cake need not be dispatched to friends on the wedding-day, but as soon after as possible. It should be put into white paper and tied round with narrow white satin ribbon. If to be sent by post, it should be put in a small box.

V. B. A.—To remove the shiny marks from your black cashmere, sponge it with a solution of water and ordinary washing blue. 2. We advise you to purchase as large a supply of personal and household linen as your purse will afford. It is a great comfort to a house-keeper to be well supplied, and you will probably have less time on your hand to make it when you have home duties to attend to.

The Great Chestnut Tree of Mount Etna.

Conspicuous among historic trees is the famous chestnut tree of Mount Etna, called in Sicily the "Chestnut of a Hundred Horses," which is reported to be 170 feet in circumference.

This tree, with its vaulted diameter, is entirely hollow. It is supported chiefly by its bark, having lost its interior entirely by age; but it is not the



THE GREAT CHESTNUT TREE OF MOUNT ETNA.

their small allowance will not obtain for them the numerous articles desired, unless they are careful and saving. Your children are made to feel more independent and self-reliant, and when called upon are better able to battle with the world through the aid of their slight experience. There are few of us but like some money to call our own, and young people particularly take pleasure in making presents to the dear ones, and when obliged to ask for means do not feel that they are giving, and oh, how sweet to give of our very own! The family expenses are not increased by the means, for the parents should advise as to the best method of using the money, and when spent by the children for certain useful articles, the parent has so much less to think of.

Now, my dear nieces, let me advise you not to spend all your money on fine clothes and gew-gaws. By practising economy you can save a little now and then, which will purchase something nice for the house or some article of dress that the over-taxed parent could ill afford. You have your room, for which you could, with your own savings,

Tell the servant your name to be announced, and if you be admitted there is no occasion for leaving your card. Should your brother be unable to call make an apology for him, and on going out leave his card on the hall table. 3. Dip the linen in milk and put it out on the lawn to bleach. Repeat this process several times, and in most cases the mildew will disappear.

A WELL-WISHER.—1. Eruptions on the face proceed from many causes, therefore it is always best to consult a doctor when they appear, as it is seldom they can be cured by external applications. But plenty of exercise in the open air, cold bathing and general attention to the health are the best things to make the complexion fresh and clear. 2. Use charcoal for your teeth; it is perfectly harmless, and is an excellent thing for whitening them.

IGNORAMUS.—A young girl of twelve years of age should wear her hair either in curls, crimped, or in two long plaits hanging down and tied at the ends with bows of ribbon. 2. The bride just inserts the knife in the top of the cake, and then it may be cut by the principal bridesmaid. The bridegroom sits on one side of the bride and the principal bridesmaid on the other side. 3. The bridesmaids generally provide their own dresses, subject of course to the bride's wishes as to color, style, etc.

less crowned by verdure. The people of the country have erected a house here, with a sort of furnace for the chestnuts and other fruits they wish to preserve. They are even so indifferent to the preservation of this wonderful natural curiosity, that they do not hesitate to cut off branches to burn in the furnace.

Some persons think that this mass of vegetation is formed of many trees which have united their trunks; but a careful examination disposes of this notion. They are deceived. All the parts which have been destroyed by the hand of time or the hand of man have evidently belonged to a single trunk. I have measured them carefully, and found the one trunk 160 feet in circumference.

In confirmation of the above statement, a celebrated traveller, Mr. Brydone, who described this tree early in the present century, says: "I was by no means struck with its appearance, as it does not seem to be one tree, but a bush of five large trees growing together. We complained to our guides of the imposition, when they unanimously assured us, that, by the universal tradition, and even testimony of the country, all these were once united in one stem; that their grandfathers once remembered this, when it was looked upon as the glory of the forest, and visited from all quarters; that for many years past it had been reduced to

the venerable ruin we now behold. We began to examine it with more attention, and found that there is an appearance that these five trees were really once united in one. The opening in the middle is at present prodigious; and it does, indeed, require faith to believe that so vast a space was once occupied by solid timber. But there is no appearance of bark on the inside of any of the trunks, nor on the sides that are opposite each other. If this was once united in one stem, it must, with justice, indeed, be looked upon as a very wonderful phenomenon in the vegetable world, and deservedly styled the glory of the forest. I have since been told by Canonico Recupero, an ingenious ecclesiastic of this place, that he was at the expense of carrying up peasants with tools to round this wonderful tree, and he assures me, upon his honor, that he found all these stems united below in one root. I alleged that so extraordinary an object must have been celebrated by many of their writers; he told me that it had, and produced many examples."

Recipes.

LEMON BEER.—Put into a keg one gallon of water, two sliced lemons, one tablespoonful of ginger, a scant pint of syrup, and one-half pint of yeast. In twenty-four hours it will be ready for use. If bottled, the corks must be tied down.

SODA BEER.—A very cooling summer drink may be made by adding to two quarts of water two pounds of white sugar, the beaten whites of two eggs, two ounces of tartaric acid, two tablespoonfuls of cornstarch, mixed smooth in a little of the water. Put over the fire and boil two minutes. When cold, flavor with wintergreen. Bottle, and when wanted for use dissolve in half a glass of cold water a third of a teaspoonful of soda, and then pour into it two tablespoonfuls of the bottled mixture. It will foam to the top of the glass.

GINGER DRINK.—Put to six gallons of water eight pounds of loaf sugar, the beaten whites of three eggs, and three ounces of the best ginger. Powder the ginger finely, and mix with a little water before adding it to the mass. Boil gently for three-quarters of an hour, removing any scum which may arise to the surface. Let cool; add the juice of three or four large lemons and a tea-cupful of yeast. Put into a cask and bung it very tightly. It will be fit to use in ten days.

CANNED FRUITS.—All fruits should be fresh and ripe; granulated sugar should always be used and also a porcelain kettle. Place the bottles by the stove, and let them become gradually hot before putting in the fruit.

CANNED STRAWBERRIES.—Pick over the fruit and weigh, and to every pound of fruit put a quarter of a pound of sugar; place the fruit in a kettle with just water enough to start them. Have the sugar warm, and when the fruit begins to boil put in the sugar; boil for fifteen or twenty minutes and place in glass jars and seal immediately. As the fruit cools be careful to tighten the tops. Raspberries, cherries and all small fruits are done in the same way, except that one-third of a pound of sugar is allowed to every pound of fruit, for cherries and all acid fruits.

RASPBERRY VINEGAR.—To every two quarts of raspberries put a pint of cider vinegar. Let them lie together two or three days, then mash them up and put them in a bag to strain. To every pint, when strained, put a pound of best sugar. Boil it twenty minutes and strain it; bottle it when cold.

RASPBERRY BLANCMANGE.—Stew fresh raspberries, strain off the juice and sweeten to taste; put over the fire, and when it boils stir in corn-starch wet in cold water, allowing two tablespoonfuls to a pint of juice; stir until cooked, and pour into moulds to cool. Strawberries and cherries are very nice. Eat with sweetened cream or boiled custard.

TO CURE HAY FEVER.—Cut up small some of the new hay and make tea of it. Drink a wine-glass of the tea about three times a day, and it will relieve and carry of the fever.

The stems of spring flowers are usually so slender and succulent that it is hard, often impossible, to keep them in bouquets. They do well in shallow dishes filled with damp moss or sand. Another, perhaps better, way is to thrust the stems through small holes in sheet cork or thin wood, cut to fit the vase or dish they are to be put in, allowing the cork to float on water. Very pretty arrangements of delicate and short-stemmed flowers can be made in this way.

Nature.

I love thee, Nature—love thee well—
In sunny nook and twilight dell,
Where birds, and bees, and blossoms dwell,
And leaves and flowers,
And winds, in low, sweet voices tell
Of happy hours.

I love thy clear and running streams,
Which mildly flash with silver gleams,
Or darkly lie, like shadowy dreams,
To bless the sight;
While every wave with beauty teems,
And smiles delight.

I love thy forest, deep and lone,
Where twilight shades are ever thrown,
And murmuring winds, with solemn tone,
Go slowly by,
Sending a peal, like ocean moan,
Along the sky.

I love to watch, at close of day,
The heavens in splendour melt away,
From radiant gold to silver gray,
As sinks the sun;
While stars upon their trackless way
Come one by one.

I love, I know not which the best,
The little wood-bird in its nest—
The wave that mirrors in its breast
The landscape true—
Or the sweet flowers by winds caressed
And bathed in dew.
The all are to my bosom dear,
The clouds, the mists, the sunny air;
All that is beautiful and fair
Were sent in love,
And some eternal truth declare
From heaven above.

REV. R. C. WATERSTON.

Character and expression may be associated with an interior apartment which shall convey to the minds of guests a sense of mingled appreciation and welcome; or, on the other hand, impart a chilling impression too apt to be abiding, notwithstanding the warmth which attends the congratulations of the host. Rooms should be suggestive of feeling. Light and shade should be studied, as well as the combination and arrangement of drapery, the disposition of furniture and ornaments. Sociability may be expressed even in the placing of chairs and sofas. Two or three chairs, arranged in a conversational attitude in some cheery corner, an ottoman within easy reach of a sofa, a chair facing a stereoscope or convenient to the art-album, each bespeak sociability. Little studies of effect, which shall impress the more than casual observer, may be made with advantage; and to this end it should be regarded, as a rule, to aim to dissipate the ever-prevalent sense of restraint which surrounds the guest, attendant upon his or her first appearance at the house of a friend. In short, homes should be so inviting and cheerful that those who visit them may be joyous and unconstrained, without the slightest feeling of inharmony with the surroundings.

TARNISHED SILVERWARE.—Solid silverware, as well as plated goods, grows dark and tarnished in a very short time when exposed to the air, and even when put away in a dark place. This is especially the case where hard coal is used in the house or neighborhood, as the sulphur in the coal, liberated by heat, is sure to stain all the silverware within reach. This annoying tarnishing can be entirely prevented by painting the silverware with a soft brush dipped into alcohol in which some collodion has been dissolved. The liquid dries immediately and forms a thin, transparent and absolutely invisible coating upon the silver, which completely protects it from all effects of the atmosphere, etc. It can be removed at any time by dipping the article in hot water. This recipe has been in use for some time in the large establishments at London, where most of the goods in the show-cases are protected in this manner.—Mechanical News.

Salaratus is excellent for removing grease from woodwork, shelves, tables, etc. Spread quickly over the spots, dampen and let remain a few minutes, and scrub off with soap suds.

Pet Stock.

Cockatoo Asking Food.

A correspondent to a contemporary says the following may interest some of your readers, and also go to prove the sagacity of the Cockatoo tribe. During my dinner I heard my white Cockatoo hollering out. I said to myself, "That bird wants some food," as I knew his ways pretty well. However, I did not think of it again, as my boy always feeds him. Two or three hours after, I went into my sitting-room to write a letter. "Cocky" immediately came to the corner of his perch, and bending forward, nodding his head, cried out to me, "Cocky, Cocky!" I went to his seed-tin and found it empty, and gave him some seed, which he devoured immediately and eagerly. I then called in the boy, who attends to my birds as well as dogs, and asked him if he had fed "Cocky" to-day. He, like an honest little fellow, told me at once that he had forgotten him. He hardly ever does, yet from "Cocky's" manner, I felt sure he had been forgotten to-day. Truly, the sagacity of the Cockatoo is above that of other birds—I do not say, beasts. "Cocky" asked me for food, as plainly as I ask you to insert this letter.

The Nicety of Birds.

The following facts will perhaps not be unwell come to that numerous portion of your readers (says H. M. in *The Journal of Science*) which take an interest in animal psychology. A canary bird belonging to an acquaintance is exceedingly fond of bathing. As he makes a considerable slop in so doing, the lady to whom he belongs placed his cage in the kitchen till he should have taken his bath; but the bird on such occasions invariably refused to enter the water till he was brought back into the breakfast-parlour. Another canary had been accustomed to have his bath in a cup of black glass. It having been broken, a common earthenware cup was substituted, but the bird refused to bathe till a glass vessel (this time colourless) was obtained. A large grey parrot belonging to a neighbour of mine is much offended if his cage is not cleaned out regularly. On one occasion, having been neglected for nearly a week, he fell to work, and with beak and feet contrived to throw all the sand, fragments of food, &c., which had accumulated at the bottom of the cage, down upon the carpet. These facts show that birds have a sense of order, neatness, and even elegance, and that their whole nature is not absorbed in the gratification of their physical wants.

Mr. T. W. Webb sends the following anecdote to *Notes and Queries* respecting Irving and his dogs, as having been related by Irving himself. It is the practice of the Scottish shepherd to bring his faithful Collie with him in his attendance on public worship. On one occasion, when Irving was preaching in his native land, and no doubt to an overflowing congregation, there was a large number of shepherds among his hearers, whose dogs were, according to custom, relegated to the gallery, while there masters sat below. The dogs, it may be supposed, were all old acquaintances, and might be expected to behave with decorum. But, unluckily, on this occasion a stranger was introduced; the intrusion was not only unwelcome, but was resented in a high degree; and the disapprobation and snarling became at last so intolerable that the unfortunate new-comer was fain to provide for his safety by bolting over the front of the gallery into the body of the church, and escaping to the outside, pursued in the same precipitate manner by the whole body of his foes.

CAT-AND-DOG LIFE: A COINCIDENCE.—A correspondent writes: A gentleman of my acquaintance had a smooth-haired English Terrier dog. Recently he was presented with two fine cats. The dog, however, absolutely refused to fraternise with the new-comers, and, in order to make peace in the household, he presented the dog to a lady relative, who was then on a visit at his house. The lady sent the dog to her home, where she also had two favorite cats. On her return home, some weeks afterwards, she found that, whereas the dog was apparently quite happy in his new quarters, not so her favorite grimalkins, for on the entry of the dog the cats took their departure, and they have not since been heard of.

Little Ones' Column.

Alphabetical Poem.

There is a farmer who is Y's
 Enough to take his E's,
 And study Nature with his I's
 And think of what he C's.

He hears the chatter of the J's
 As they each other T's,
 And Z's that when the tree D K's
 It makes a home for B's.

A pair of oxen he will U's,
 With many haws and G's,
 And their mistakes he will X Q's,
 While plowing for his P's.

In raising crops, he all X L's,
 And therefore little O's,
 And when he hoes his soil by spells,
 He also soils his hose.

The Bells of Cologne.

The day was very dark. Little Meta was lonely, for her mamma was out. She was wondering what to do when who should come in but Miss Louise.

Miss Louise was a young German lady, so pleasant and kind that everyone loved her. She had travelled in many countries, and she always had something new or bright to tell children.

"Oh, dear Miss Louise?" cried Meta, running to her, "please amuse me!"

The young lady thought for a moment and then she said, "Did you ever hear of the bells of Cologne?"

"Why, of course not," replied the little girl. "But I have seen a picture of the Cologne Cathedral in my papa's Rhine album. My mamma has some Cologne water in a big bottle."

Miss Louise laughed. "Wait two minutes," she said. "Be very patient, and when I come back you shall hear the bells of Cologne."

She left the room and soon returned with a large silver tablespoon. Then she took a piece of cord about a yard long and tied it in the middle in a hard knot, around the slim part of the handle. She turned up the cloth so that the edge of the table was exposed. She next asked the wondering Meta to hold out her two fore-fingers. Around these she wound the ends of the cord.

"Now put these two fingers in your ears," she said, "and swing the spoon so that the bowl will strike the edge of the table."

Meta obeyed. "Oh, bells!" she cried, "beautiful, deep-sounding church bells! How wonderful and how sweet! Oh, Miss Louise!"

Meta liked it so well that she would have gone on swinging the spoon for an hour, but her friend stopped her after a few moments. Meta ran off to get the Rhine album to show the picture of the Cologne cathedral. Miss Louise related many curious and interesting things about it, so that the afternoon passed off very quickly. When the young lady went away it was time to get dressed for tea.

"I fear my little girl has had a dull time of it," said her mamma, when she came in from her long drive. "It has been such a gloomy day."

"Oh, no, mamma! Miss Louise came. She's as good—or 'most as good—as sunlight. After tea, if you'll let me, I'll show you and papa what she showed me—how to hear the bells of Cologne. May I?"

"Certainly, my pet."

But Meta couldn't wait until after tea. When they sat down to the table the sight of the spoons made her so impatient that her papa and mamma thought she had better get it off her mind. So she showed them then, and they were both delighted with the bells of Cologne.

Lord Chesterfield had a relative, Mr. Stanhope, who was exceedingly proud of his pedigree, which he pretended to trace to a ridiculous antiquity. Lord Chesterfield was one day walking through an obscure street in London when he saw a miserable daub of Adam and Eve in Paradise. He purchased the painting, and having written on the top of it, "Adam de Stanhope, of Eden, and Eve, his wife," he sent it to his relative, as a valuable old family portrait of his remote ancestors.

Uncle Tom's Department.

PUZZLES.

1.—CHARADE.
 My first adorns a sable cloak,
 But in the light is never seen;
 My second weary travellers greet,
 And hail with much delight, I ween;
 Strong and fierce my last does be,
 And fleet of wing as any bird:
 My whole, when evening shades descend,
 Far and wide is often heard.
 REUBEN N. SHIER.

2.—NUMERICAL ENIGMA.
 I am composed of 6 letters.
 My 1, 2, 3 is run by steam.
 My 4, 5, 6 is what many a little dog is.
 My 3, 2, 6 is a small animal.
 My 1, 2, 6 is its enemy.
 My 4, 5, 2 is a vegetable.
 My 4, 5, 2, 3 is a fruit.
 My 6, 5, 2 is what many take for breakfast.
 My whole is necessary about a well furnished room.
 ARTHUR FOSTER.

3.—CHARADE.
 My first may be your mother,
 And my next a mother, too;
 My whole is still your mother,
 Though perhaps it may be you.
 ARTHUR FOSTER.

4.—WORD SQUARE.
 Thought, transact business, a title of nobility, a help.
 MAGGIE F. ELLIOTT.

Names of those who sent Correct Answers to June Puzzles.

Robert King, Charles Cowan, W. H. Dingle, Frank Booth, Esther Louisa Ryan, Minnie Segart, Minnie S. White, Harry A. Woodworth, Walter F. Edmiston, Ida Allen, Maud Dennee, C. B. Smith, Jeremiah W. Wilson, Ella B. Calderwood, Thomas Armstrong, Paul C. R. Canning, Alfred Deadman, Hannah M. Webber, Annie Russell, Thomas Telfer, Martha C. Connell, Robert Wilson, Annie Garcock, Henry Stone, J. S. McCormac, Fanny Burton, Maggie F. Elliott, P. J. Capstick, Addie V. Morse, Minnie Bates, James Watson, P. Boulton, Thos. Simpson, Arthur Foster, Richard Kingston, Jennie Phoenix, H. Louisa Tompkins, J. Wm. Forbes, Richard A. Lazier, Ellen D. Sipper, Becca Lowry, John Laing, Lizzie A. Webber, R. J. Risk, George W. Finnemore, Carrie Thomson.

Mine Shildren.

Oh, dose shildren, dose shildren, dey bodder mine life!
 Why don'd dey keep quiet, like Gretchen, mine wife!
 Vot makes dem so shock fool of mischief, I vunder,
 A-shumping der room roundt mit noises like dunder?
 Hear dot! Vase dere anyding make sooch a noise
 As Herman und Otto, mine two leedle poys?

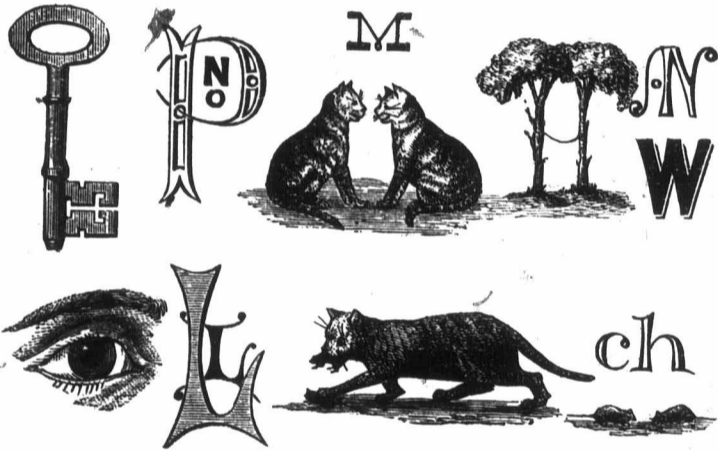
Ven I take oup mine pipe for a goot quite shmoke,
 Dey crawl me all ofer, und dink id a shoke
 To go droo mine bockets to see vot dey
 find,
 Und if mid der latch-key my vatch dey
 can vind.
 Id takes someding more as dheir fadher
 und moder
 To quiet dot Otto und his leedle broder.

Dey shtub outd dheir boots, und vear
 holes in der knees
 Off dheir drouers, und shtockings, und
 sooch dings as dese.
 I dink if dot Ceresus vas lifing to-day,
 Dose poys make more bills as dot
 Kaiser could pay;
 I find me quick outd dot some riches
 dake vings,
 Ven each gouple a tays I must buy
 dem new dings.

I pring dose two shafers some toys efery
 tay,
 Because "Shonny Schwartz has sooch
 nich dings," dey say,
 "Und Shonny Schwartz' barents vas poorer as
 ve!"

Dot's vot der young rashkells vas saying to me.
 Dot old Santa Klause met a shleigh fool off toys
 Don'd gif sadisfaction to dose greedy poys.

Dey kick der clothes off ven ashleep in dheir ped,
 Und get so mooch croup dot dey almost vas dead;
 Budt id don'd make no tifferent: before id vas
 light
 Dey vas oup in der morning mit billows to fight.
 I dink id vas beddher you don't got some ears.
 Ven dey blay "Holdt der Fort," und den gif dree
 cheers.



5.—ILLUSTRATED REBUS.

6.—DROP VOWEL PUZZLE.

Wh-r-nt-s-m-n-y-g-d?
 Wh-h-s-t-n-t-w-nts-h-r-d-h-d,
 Wh-h-s-t-h-s-m-ch-tr-ble-nd-c-re,
 Wh-nc-h-s-h-d-t-h-s-d-sp-ir.

H. A. WOODWORTH.

7.—DIAMOND.

1. A consonant. 2. A pronoun. 3. Past participle of the verb "spend." 4. A place of amusement. 5. An entrance. 6. To attempt. 7. A vowel.

HARRY A. WOODWORTH.

Answers to June Puzzles.

- Ten Dollars.
- Night-in-gale.
-

4	3	8
9	5	1
2	7	6

- If thy heart fail thee do not climb at all.
- P
 O R E
 O P E R A
 P R E P A R E
 E R A S E
 A R E
 E
- Page.
- Where there's a will there's a way.
- Grouse, rouse, ouse, use, us.

Oh, dose shildren, dose shildren, dey bodder mine life!
 Budt shtop shust a leedle. If Gretchen, mine vife,
 Und dose leedle shildren dey don'd been around,
 Und all droo her house dere vas nefer a sound—
 Vell, poys, vy you look oup dot vay mit surbrise?
 I guess dey see tears in dheir oldt fader's eyes.
 —Charles Follen Adams, in Editor's Drawer, in
 Harper's Magazine for May.

"Is the doctor in?" "Don't office here," said the lawyer, intent over some old documents. "Oh, I thought this was his office." "Next door." "Pray, sir, can you tell has the doctor many patients?" "Not living!" was the irritated reply.

A self-acting sofa, just large enough for two, has been invented. If properly wound up it will begin to ring a warning bell just before 10 o'clock. At one minute after 10 it splits apart, and while one-half carries the daughter of the house up stairs, the other half kicks her young man out of doors. They will come high, but people must have them.

A Sermon in Rhyme.

If you have a friend worth loving,
Love him. Yes, let him know
That you love him, e're life's evening
Tinge his brow with sunset glow.
Why should good words ne'er be said
Of a friend—till he is dead?

If you hear a song that thrills you,
Sung by any child of song,
Praise it. Do not let the singer
Wait deserved praises long.
Why should one who thrills your heart,
Lack the joy you may impart?

If you hear a prayer that moves you
By its humble, pleading tone,
Join it. Do not let the seeker
Bow before his God alone.
Why should not your brother share
The strength of "two or three" in prayer?

If you see the hot tears falling
From a sorrowing brother's eyes,
Share them. And by sharing,
Own your kinship with the skies.
Why should any one be glad
When a brother's heart is sad?

If a silvery laugh is rippling
Through the sunshine on his face,
Share it. 'Tis the wise man's saying—
For both grief and joy a place;
There's health and goodness in the mirth
In which an honest laugh has birth.

If your work is made more easy
By a friendly helping hand,
Say so. Speak out brave and truly,
Ere the darkness veils the land;
Should a brother workman dear
Falter for a word of cheer?

Scatter thus your seeds of kindness,
All enriching as you go;
Leave them. Trust the Heaven-Giver—
He will make each seed to grow;
So until its happy end
Your life shall never lack a friend.

The Use of Lemons.

The lemon is a native of Asia, although it is cultivated in Italy, Portugal, and in the South of France. In Europe, however, it seldom exceeds the dimensions of the smallest tree, while in its native state it grows to over ninety feet in height. Every part of this tree is valuable in medicine, though we rarely employ any of it but its fruit—that is, the lemon itself. And everyone knows how to employ this, as in lemonade: To squeeze the juice into cold water—this is the shortest way—or to cut it into slices and let it soak in cold water, or to cut in slices and then boil it. Either way is good. Lemonade is one of the best and safest drinks for any person, whether in health or not. It is suitable to all stomach diseases, is excellent in sickness—in cases of jaundice, gravel, liver complaint, inflammation of the bowels, and fevers. It is a specific against worms and skin complaints. The pippins crushed may also be mixed with water and sugar and used as a drink. Lemon-juice is the best anti-scorbutic remedy known. It not only cures the disease, but prevents it. Sailors make a daily use of it for this purpose. A physician suggests rubbing of the gums daily with lemon-juice to keep them in health. The hands and nails are also kept clean, white, soft, and supple by the daily use of lemon instead of soap. It also prevents chilblains. Lemon is used in intermittent fevers mixed with strong hot black-tea or coffee, without sugar. Neuralgia may be cured by rubbing the part affected with a lemon. It is valuable also to cure warts, and to destroy dandruff on the head by rubbing the roots of the hair with it. In fact, its uses are manifold, and the more we apply it externally the better we shall find ourselves. Natural remedies are the best, and nature is our best doctor if we would only listen to it. Decidedly rub your hands, head, and gums with it, and drink lemonade in preference to all other liquids.

"A riferince, is 't?" exclaimed the girl at the intelligence office, when asked by the lady in search of help for a recommendation; "an' why should I give ye a riferince? It is mesilf that's got to live wid ye, an' not ye wid me."—[Boston Transcript.

The fair sex, though possessing such unbounded and proper influence over men, notoriously have but little control over their canine favorites. This, however, arises from their seldom enforcing obedience to the orders they give them. If a lady takes a dog out for a walk she keeps incessantly calling to it, lest it should go astray and be lost. The result is, ere long, that the dog pays not the slightest attention to her, his own sagacity telling him that he need not trouble himself by watching her, as she will be sure to look after him.

THE ART OF BEING AGREEABLE.—The true art of being agreeable is to appear well pleased with all the company, and rather to seem well entertained with them than to give entertainment to them. A man thus disposed perhaps may not have much learning, nor any wit; but if he have common-sense, and something friendly in his behaviour, it conciliates men's minds more than the brightest talents without this disposition; and, when a man with such a turn comes to old age, he is almost sure to be treated with respect. It is true, indeed, that we should not dissemble and flatter in company; but a man may be very agreeable, strictly consistent with truth and sincerity, by a prudent silence where he cannot concur, and a pleasant assent where he can. Now and then you meet with a person so exactly formed to please that he will gain upon everyone that hears or beholds him; this disposition is not merely the gift of nature, but frequently the effect of much knowledge of the world and a command over the passions.

Mike—"An' what are ye diggin' out that hole for, Pat?" Pat—"Arrah, an' it's not the hole I'm after diggin' out! I'm diggin' the dirt out and lavin' the hole."

A country merchant visited the city a few days ago, and purchased from a dollar store a table-caster, which he took home with him, and after putting a tag on it marked \$14, made a present of it to a Methodist preacher, whose church his family attended. The reverend gentleman took the package home, opened it and examined the contents. The next day he took the caster (with the tag attached) back to the grocery man, and said to him: "I am too poor in this world's goods to afford to display so valuable a caster on my table, and if you have no objection, I should like to return it and take \$14 worth of groceries instead." The merchant could do nothing but acquiesce, but fancy his feelings.—*Cincinnati Gazette.*

GRAPE VINES!

Jefferson, Lady Washington, Pocklington, Delaware, Catawba, Concord, Etc. LOWER THAN THE LOWEST. Price list free, with list of grape cuts of Jefferson and Pocklington. ALL STOCK WARRANTED TRUE TO NAME. EVERETT BROWN & CO., Buffalo Point, P. O. Yates Co., N. Y.

AMBER Sugar CANE MACHINERY.

New PARAGON SCHOOL DESKS.
M. BEATTY & SONS, WELAND, ONT.
Early Amber Cane Seed Imported from the Southern States. Send for catalogues and prices. 209-a

JOHN CAMPBELL,
KING STREET LONDON, ONT.
Also PORTAGE AVENUE, WINNIPEG.
Manufacturer of CARRIAGES, BUGGIES, CUTTERS, SLEIGHS, &c.
Modelled from the Newest Designs; which, for Elegance, Durability and Workmanship, cannot be surpassed in the Dominion. dc-12

FARMS FOR SALE

In Western Ontario a number of choice Farms. Full description list sent on application. Correspondence invited, full information given, and on personal application at my office, plans of the townships shown, enabling strangers to see the position of properties and their proximity to towns, railway stations, &c. Farms with acreage to suit every one. Send to

CHARLES E. BRYDGES,

Real Estate Agent.
Land office, 98 Dundas street west, London, opposite to the City Hotel, for list of farms for sale. 176-4f

Commercial.

THE FARMER'S ADVOCATE OFFICE,
London, Ont., July 2nd, 1883.

The past month has been one of unusual moisture and rainfall in Ontario, so much so that in some sections the planting is only lately finished. A good deal of corn and even some potatoes have had to be replanted. The season is very late. Wheat is just coming into head, and clover is not yet well in blossom.

WHEAT.

The crop reports have been very much mixed, and quite contradictory in some parts of the States. Still, on the whole, there seems to be a general opinion that America will have an average crop of wheat. At all events the English millers and dealers don't seem very much alarmed about the future, if we may judge from the tone and feeling of the English markets.

A large percentage of the wheat in some sections of Ontario was plowed up, while in others the crop looks very well. Especially is this noticeable on good, well underdrained land, and dry, sandy soils. A good deal will depend on how it will fill in and ripen, but under the most favorable circumstances we need not look for the sample there was last year. We cannot too strongly urge upon farmers the importance of having their land in good condition before sowing—well underdrained, and not undertake to put in too much.

PEAS

Where sown are looking well, and what they want for the next four weeks is cool, fine, sunny weather.

BARLEY AND OATS

On good, high, dry land, are looking well.

CORN

In some sections (Essex, Kent and Elgin) is looking well, and farmers are busy hoeing. A good deal of trouble was experienced in some sections in getting good, sound seed that would grow, both for planting and for sowing for fodder. If farmers would be more careful in selecting and saving their seed corn, or buy only from good reliable seedsmen, they would save themselves a good deal of trouble and disappointment.

CHEESE

Has sold pretty steady the past two or three weeks, and about all the first half of June has now been bought up, and in a good many instances the whole month has been contracted for at good, paying prices. Pastures are very abundant, and the flow of milk is large. Considering the increase in the make and the very favorable season, we think that dairymen may well congratulate themselves that prices have been so well sustained.

BUTTER

Seems to be accumulating, as shipments this season, so far, have been very light. The weather being cool and pastures good, the make should be large and good.

CATTLE.

The shipments of live cattle to the English markets continue heavy. The shipments so far this season have been 16,000 head, against 12,000 for same time last year. Canadian steers in Liverpool and Glasgow are quoted steady, at 8½d. to 8¾d. per lb., and sheep at 9½d.

FARMERS' MARKET.

LONDON, ONT., June 23th, 1883.

Per 100 lbs		Per 100 lbs	
Red wheat..	\$1 70 to \$1 75	Eggs, small lots	17 to 18
Deihl.....	1 75 to 1 80	Potatoes, bag	50 to 60
Treadwell..	1 75 to 1 80	Apples.....	1 00 to 2 00
Clawson.....	1 55 to 1 70	Roll butter....	15 to 16
Corn.....	1 11 to 1 20	Tub ".....	14 to 16
Oats.....	1 35 to 1 38	Crock ".....	14 to 16
Barley.....	1 00 to 1 15	Cheese, lb....	12 to 13
Peas.....	1 15 to 1 20	Onions, bush.	60 to 0 80
Poultry (Dressed)—		Tallow, clear..	7 to 8
Chickens, pair	0 50 to 0 70	" rough.	5 to 5
Ducks, pair..	0 50 to 0 70	Lard, per lb....	13 to 14
Turkeys, each	0 75 to 2 00	Wool.....	17 to 20
Poultry (Undressed)—		Clover seed..	0 00 to 0 00
Chickens, pair	0 60 to 0 75	Timothy seed..	0 00 to 0 00
Live Stock—		Hay, per ton	9 00 to 10 00
Milch cows...	40 00 to 60 00	Beans per bush	1 25 to 1 50

TORONTO, ONT., June 28th.

Wheat, fall No. 1	\$1 07 to \$1 08	Onions, bag	0 50 to 0 60
Wheat, spring	1 08 to 1 09	Chickens, pair	0 80 to 0 90
Barley	0 50 to 0 75	Fowls, pair	0 60 to 0 80
Oats	0 45 to 0 47	Ducks, brace	0 80 to 0 80
Peas	0 80 to 0 80	Geese	0 00 to 0 00
Flour	4 70 to 5 00	Turkeys	1 00 to 2 50
Rye	0 67 to 0 68	Butter, roll	0 17 to 0 20
Potatoes, bag	0 75 to 0 80	Butter, dairy	0 16 to 0 21
Apples, bri.	0 00 to 0 00	Eggs, fresh	0 16 to 0 17
Tomatoes, bu.	0 00 to 0 00	Wool, per lb.	0 17 to 0 20
Beans, bu.	1 65 to 1 90	Hay	12 00 to 13 50
		Straw	8 00 to 9 00

GRAIN AND PROVISIONS.

MONTREAL, June 28th.

Wheat—		Ont Oatmeal	5 45 to 5 55
Can spring	\$1 12 to \$1 17	Cornmeal	3 50 to 3 70
Red winter	1 15 to 1 17	Butter—	
White	1 11 to 1 12	East'n Tp's	17 to 19
Corn	62 to 65	Morrisburg	18 to 20
Oats	38 to 40	Brockville	18 to 20
Peas	95 to 97	Western	22 to 24
Flour—		Mess pork	22 00 to 23 00
Superior	4 80 to 4 82	Lard	13 to 14
Superfine	4 15 to 4 25	Hams	13 to 14
Strong bak	5 15 to 5 25	Bacon	13 to 14
Pollards	3 35 to 3 50	Cheese	10 to 10 1/2

LIVE-STOCK MARKETS

BRITISH MARKETS, PER CABLE.
Cattle Higher—Sheep Steady.

Liverpool, June 26th.

CATTLE.
With a better demand and moderate supplies the cattle trade this week was fairly active and prices advanced 1/2c. over the rates current one week ago. There was a fairly healthy feeling in the trade at the prices.

Choice steers	16
Good steers	15 1/2
Medium steers	14 1/2
Inferior and bulls	10 1/2 to 12 1/2

[These prices are for estimated dead weight; offal is not reckoned.]

SHEEP.

The sheep market was fairly active with a moderate demand and only fair supplies. Prices remain the same as one week ago.

Best long woolled	@19
Seconds	17 @18
Morinos	16 @17
Inferior and rams	11 @13

[These prices are for estimated dead weight; offal is not reckoned.]

Montreal, June 26, 1883.

LIVE STOCK.—The supply of cattle at the market here today consisted of about 400 head, mostly from the west. Shipping cattle sold at 5 1/2c to 6 1/2c; second class, 5c to 5 1/2c; and third-class from 4 1/2c to 4 3/4c per lb., live weight. Ald. McShane bought 200 for crossing the Atlantic, at 5 1/2c to 6 1/2c. Veal calves ranged from \$3 to \$8 each. Good lambs sold at \$4 each, a lot of 20 bringing \$81.

AMERICAN.

East Buffalo, N. Y., June 30.

Cattle—The market steady and quiet; light supply, and prospects look fair for a continuance of present prices. Milch cows dull and lower, and the supply about equal to the demand. Sheep and lambs—Market dull, prices fully 35 to 40c. lower than this time last week. The supply of sale stock was moderate, and the run of through sheep heavy. Hogs—Demand active, prices higher, and Yorkers selling at \$6.70 to \$6.85; light do. quotable at \$6.40 to \$6.60; good butchers' and mediums in light supply, quotable at \$6.75 to \$6.85; pigs, \$6 to \$6.25.

CHEESE MARKET.

Liverpool, Eng.—By Cable—Cheese 57 shillings per cwt. Utica, N. Y., June 26, 1883.
Transactions of the day are as follows: 2 lots, 250 boxes, at 10c; 14 lots, 1,300 boxes, at 10 1/2c; 4 lots, 410 boxes, at 10 1/2c; 87 lots, 8,454 boxes, at 10 1/2c; 7 lots, partly small cheese, 877 boxes, at 10 1/2c; 7 lots, 1,117 boxes, at 10 1/2c; 3 lots, small cheese, 355 boxes, at 10 1/2c; 4 lots, 564 boxes, at p. t. Sales, 13,324 boxes; commissions, 2,532 boxes. Total, 15,856 boxes. Ruling price, 10 1/2c.

LITTLE FALLS CHEESE MARKET.

The market was weak and prices were lower than last week, pecially on home trade cheese. Sales, mostly of grass-made cheese, were quite freely made, amounting in the aggregate to 9,100 boxes. The following transactions took place: 102 boxes at 9 1/2c; 751 at 10c; 2,962 at 10 1/2c; 193 at 10 1/2c; 3,637 at 10 1/2c; 350 at 10 1/2c; 254 at 10 1/2c, and 581 on commission.
Woodstock, Ont., June 27.—The offering of cheese was 2,825 boxes, mostly last half of June. The buyers were all on the field, Mr. Davis, from Brockville, also being present. Every factory represented sold part or whole of their offerings. Six hundred boxes of cheese, third week of June, were sold at 10 1/2c; 750 boxes sold at 10 1/2c; balance of June, 580 boxes, at 10 1/2c; third week of June, 170 boxes, and all June, 10 1/2c. Cable, 56 shillings.

Peterboro', June 27.—At the fortnightly cheese market held here to-day, about 1,500 boxes of the latter half of June were offered, representing seventeen factories. Nine factories sold at prices averaging 9 1/2c. to 9 3/4c.

INGERSOLL CHEESE MARKET—June 23rd.

Only three factories placed their offerings of 630 boxes on the board, but the sales amounted to 1,470 boxes as follows: 300 boxes at 10 1/2c; 1,170 boxes at 10 1/2c. The small sales are accounted for from the fact that the large bulk of the cheese was disposed of in the early part of the month in advance.

Stock Notes.

Breeders will confer a favor by sending us prompt reports of all live-stock transactions of general interest coming within their knowledge. Our columns are always open to our readers for the proper discussion of subjects bearing upon the breeding, feeding and management of all kinds of live stock.

Mr. Thomas Beckton, of Glencoe, Ont., has purchased the "3rd Prince of Thule," one of the "Maple Lodge Herd" of Shorthorn cattle.

Messrs. J. Snell & Son have sold the Berkshire boar, 2nd Knight of Gloster, prize winner at Royal Show of England, to Mr. James Ballantine, of Westminster.

Mr. John Gibson, of Brecon, Ont., recently sold to Mr. J. English, of Ridgetown, Ont., a Constance bull calf (1060), 11 months old, and a heifer (1180) of the same strain, 2 years, for \$1,000.

John McGeoch, Esq., of P. O., Ont., writes: "Your paper is the 'stuff.' I had upwards of twenty letters in answer to my advertisement, and sold the three Ayrshires to the very first man who came, and got all I asked for them."

E. W. Chambers, of Springvale Farm, Woodstock, Ont., will sell by auction, early in September, his entire thoroughbred stock of Shorthorn cattle, Cotswold and Lincoln sheep, Berkshire pigs, horses, colts and other things, of which due notice will be given.

In noticing the shipment of a lot of eighty-three Aberdeen-Angus cattle, cows and heifers, and yearling bulls for Messrs. Geary Bros., London, Ont., the Banffshire Journal, Scotland, says: "This is by far the best they have yet taken away to America. Among them are three animals from the Royal herd at Balmoral."

GALLOWAYS FOR HILLHURST.—The steamer Quebec recently took out 100 Galloway bulls, selected by Mr. R. Bone, Great Smeaton, for the Hon. M. H. Cochrane, of Quebec, Canada. Mr. E. J. Arnold, of Jersey, also sent out in the same vessel from Liverpool, five Jerseys, carefully selected, and pedigree cattle, also for the Hon. M. H. Cochrane.

Wm. Miller, of Coteau Landing, Que., has returned from England with a fine lot of Shropshires for Wm. Major & Son, Whitevale; Robt. Calliutt, of Toronto, and Chas. D. Sickler, Malta, N. Y. These sheep were selected by him from some of the finest flocks in Shropshire. Shipped from Liverpool to Boston, on S. S. Istorian; 65 in all; landed in fine condition without loss.

IMPORTATION OF SHORTHORNS.—We understand that Mr. John Isaac, Bomanton, Ont., has landed at Quebec, with a draught of 16 Shorthorn cattle and a Clydesdale colt from Aberdeenshire, Scotland. This is now the seventh importation by Mr. Isaac, and we are convinced that this one equals, if not excels, anything previously brought. They are selected from the well known herds of Campbell, Kinellar, Marr-Uppermill, Shepherd, Shethin, and Bruce Helperwich, and cannot fail to prove a valuable addition to Mr. Isaac's herd already so well known.

The Geary Bros., Bli-bro Stock Farm, London Township, recently sold the English draft stallion "Warboys," imported by them last year, to Mr. Jas. Armstrong & Co., of Yarmouth, Elgin Co., for \$1,400. "Warboys" will be a valuable accession to the improvement of the size, bone, symmetry and action of the horses of Elgin County. They have also sold twenty Shropshire sheep to Mr. J. Buckler, of Ohio. Fifteen head sold for \$80 a piece; four for \$120, and one ram at \$170. A Lincoln ram was sold to Geo. Ingersoll, of Charlestown, N. Y., for \$180. Twenty-one sheep, \$2,030.

To keep grubs from the head of sheep, procure a trough and spread a half inch of tar on the bottom of it, upon which scatter a little salt. The sheep will tar their noses in getting the salt, and the fly which deposits the egg that produces the grub will not enter the nostril. This is a much easier method of applying the tar than to attempt to do it by hand. The tar should be renewed two or three times during the season.

(Continued on page 224.)

"The Farmer's Advocate Prize" of \$100

given annually by Wm. Weld, Editor and Proprietor of this paper, will be awarded at the next Provincial Exhibition, to be held at Guelph, Ont., from the 24th to the 29th of September, inclusive, for the best samples of wheat.
The prize will be divided as follows: Two prizes of \$30 and two of \$20 each. The first prize of \$30 to be given for the best variety of fall or winter wheat for the general farmer to raise, and \$20 for the second best variety of fall or winter wheat; \$30 for the best variety of spring wheat, and \$20 for the second best variety of spring wheat.

RULES.
Two bushels or 120 pounds of the wheat to be exhibited. The name of the wheat, together with a written description, to be given, stating where the wheat was procured, how originated or introduced, as far as can be ascertained, a description of the soil and situation on which grown, what fertilizer used, and general history of cultivation. (The wheat must have been grown in the country for at least three years.) Also a report as to its milling and marketing qualities—a practical miller to be one of the judges.

The prizes will be given to four distinct varieties, and the descriptions and reports must be furnished to the Association before the bags are opened, the reports of all competitors to be the property of THE FARMER'S ADVOCATE. It is not necessary that the finest sample of wheat should in any way effect the award of the prize except that the wheat should be pure, clean and unmixt, the object being to decide the most valuable variety from actual yield and general qualities.

General Notices.

Shearing being now over, ticks will become troublesome. We cannot recommend a better remedy than the tick destroyer made by G. C. Briggs, of Hamilton, Ont.

Russell & Co., Masillon, Ohio, U. S. A., have forwarded a copy of their handsome illustrated catalogue. They call special attention to their new Independent Lateral Stacker, besides a host of other first-class implements manufactured by them. Subscribers to FARMER'S ADVOCATE can procure a catalogue free on application.

BEATTY'S BEETHOVEN ORGANS.—Over 1,700 sold during the month of May.—We have been reliably informed that Mayor Beatty, of Washington, N. J., is making and shipping a Beethoven Organ every ten minutes since he has improved the case, and added two new and valuable improvements. So great is the demand for this popular instrument, that the factory is taxed to its utmost capacity to supply the demand. Over Seventeen Hundred were sold during the month of May, being the largest business of the kind on record. Read his advertisement.

Fairs for 1883.

Several announcements of fairs and exhibitions have already come to hand. We would suggest to the different societies to fix your dates as early as possible, issue your prize list at once, and send a copy to this office.

In a paper by Mr. Charles Gibb on "Trees and Shrubs of Northern Europe and Asia," in which he records his observations on forestry and horticulture in the fruit-growing areas of the Russian Empire, the author alludes to the lack of botanic gardens in Canada. These institutions are to be found throughout Europe, even in Russia and in most of the tropical and other colonies of England, for the interchange of botanical products growing in similar climates. "That this great Dominion of Canada," he says, "which stretches from the Atlantic to the Pacific should be without a botanic garden or a series of such gardens, is a fact without parallel in British colonial history."

We cannot think of any city or town in Canada which has a more suitable and beautiful spot for a botanical garden than Salter's Grove, near London, Ont. And in what other city in our Dominion can such assistance for the successful organization and management of such a most elevating school be found as with us? We need only mention the names of Wm. Saunders, Esq., F. R. S. C., &c., Dr. Burgess, A. R. Murdock, and so many others. By all means have a Botanical Garden at once, and let London have the honor of having such a worthy addition to our fine schools and colleges.

Please do not insert my advertisement in next issue. I have already more orders than I can possibly fill, and have had to return money for orders not filled. THE ADVOCATE circulates so widely that it does not take long to collect a patronage for all I had to sell.
R. A. BROWN,
Cherry Grove, Ont

THE FARMER'S ADVOCATE refuses hundreds of dollars offered for advertisements suspected of being of a swindling character. Nevertheless we cannot undertake to relieve our readers from the need of exercising common prudence on their own behalf. They must judge for themselves whether the goods advertised can in the nature of things be furnished at the price asked. They will find it a good rule to be careful about extraordinary bargains, and they can always find safety in doubtful cases by paying for goods only upon their delivery.

" of \$100

roprietor of this Exhibition, to the 29th of Sep-

prizes of \$30 and given for the general farmer to fall or winter at, and \$20 for

to be exhibited. In description, procured, how certain, a des-rown, what fer- (The wheat at three years-) ng qualities—

ieties, and the the Association mpetitors to be is not necessary way effect the d be pure, clean most valuable

will become and a better de by G. C.

S. A., have e illustrated ion to their esides a host factured by VOCATE can

r, 1,700 sold een reliably ngton, N.J., Organ every e case, and ements. So nstrument, capacity to n Hundred , being the Read his

exhibitions suggest to as early as e, and send

'Trees and " in which and horti-the Russian of botanic s are to be ssia and in of England, ets growing t Dominion es from the at a botanic fact with-

in Canada al spot for a ar London, omision can ization and school be ention the S. C., &c., any others. t once, and ng such a colleges.

nt in next I can pos- for orders so widely patronage N, Grove, Ont

ollars offered dling charac- e our readers on their own er the goods shed for the careful about nd safety in eir delivery.

The Quebec Farm-School.

The following information will be useful to all those who have young people to send to the new Provincial Farm-School, at Whitfield's, Que.:

1. All applications must be addressed to M. S. Lesage, Asst.-Commissioner of Agriculture, Quebec. Certificates must accompany them testifying to the good conduct of the candidate, his capacity and his desire to work as men usually do work on a farm.
2. The Government will select 30 apprentices, one for each judicial district, who will receive board, the washing of their working clothes, and a salary varying from \$30 to \$100, according to the value of their labor. The young men will be expected to have been previously at work on the land for at least two years, special mention of which should be made in the application.
3. Every apprentice who turns out idle, incapable, or unruly, will be immediately discharged in order to make room for others.
4. The course of instruction at the farm-school will be, above all things, practical, that is to say, the apprentices will be under the charge of skillful instructors, who will show them how to perform, after the best fashion, the work of the following departments: The field cultivation; the fruit and vegetable garden; the orchard; the plantations; the stables and cattle sheds; and the butter and cheese factories.
5. The evenings and intervals of leisure will be usually employed in the perusal of books and journals on farming, and by lectures given at odd times by the managers and sub-managers of departments.
6. The board of management, under Mr. Whitfield himself, will consist of: 1st, a general superintendent; 2nd, a manager of cattle department; 3rd, a thorough dairyman; 4th, a farm manager; 5th, a gardener, nurseryman, and forester; 6th, an accountant. Each of these will have as many assistants as may be necessary for the proper conduct of the business.
7. Every evening, the work done on the farm will be entered in the books, its value noted, and the work of each apprentice for the next day will be pointed out.
8. The farm accounts and the work-book will be always open for inspection by the pupils.
9. The Catholic pupils will be under the care of the Rev. Cure of St. Cesaire, and the Protestants under that of the Minister at Rougemont. Both these gentlemen have promised their best aid to the General Superintendent, who will watch over the morals and conduct of the pupils with all possible devotion.
10. The food will be abundant and of good quality, such as a well to do farmer would give to his own family. But in this as in all other departments, the strictest economy will be observed, just as on a well-conducted farm.
11. As soon as the apprentices shall have acquired a sufficient knowledge of those branches of agriculture to which they intend to devote themselves, they will receive certificates and diplomas in accordance with their several merits. It is to be observed that time has not permitted all the intended changes in the establishment. Thus, the number of bedrooms is insufficient, the reading room wants finishing and furnishing, and a wing wants building before the place can be called complete. In the meantime, it was thought better to postpone these additions for the present rather than defer opening the school for another year.

In reply to many applications which have been made to Mr. Whitfield to receive pupils in addition to those sent by the Government, we are requested to state that he will do his best to accommodate, at a reasonable rate, as many as can be profitably employed on the farm. For all other information apply to

ED. A. BARNARD,
Director of Agriculture,
Whitfield's, Que.

Dairy Notes.

We shall be glad to receive communications from dairymen upon subjects interesting to our readers, and our columns are always open for the proper discussion of matters bearing upon dairying.

Do not try to milk too rapidly. Many cows, or especially young heifers, are injured by the rude grasp of some strong-handed farmer, who takes pride in milking rapidly.

Gilt-edged butter is frequently heard of, and some persons are concerned to know what is put into it to give it its high value. Now it is not what is put in, but what is kept out of it, that puts on the so-called "gild-edge," which is not only a golden color, but a pure, sweet-butter flavor. First, no unclean or unsound or ill-flavored food goes into it, and no vile odors or bad air which the cows might breathe and taint their blood. Second, no impure or unclean matter of any description whatever is permitted to get into the milk, not even bad odors from the air, or specks of sour milk from badly cleansed pans or pails. Third, no taint is suffered in the butter; the temperature is kept at such an even rate that the milk does not become too sour and taint the cream with too much acid; no white specks of curd are permitted in it; every particle of buttermilk is washed out with pure, soft water; only the purest salt is used, and the air in the dairy is carefully kept free from dust and everything impure, so that the butter is, in fact, strictly pure, and that is all.—[The Dairy.

NEW ADVERTISEMENTS.

BELVEDERE JERSEYS.

EXHIBITED ONLY THREE TIMES IN CANADA, TOOK THE FOLLOWING PRIZES:
**TWO LARGE GOLD MEDALS, TEN FIRST PRIZES,
ONE SILVER MEDAL, FOUR SECOND PRIZES,
ONE BRONZE MEDAL, THREE THIRD PRIZES,
ONE DIPLOMA FOR BEST BULL OF ANY AGE.**

STOCK FOR SALE

FROM SUCH COWS AS THE FOLLOWING:

- Imp. FLORA OF ST. PETERS, 16 lbs. 5 oz. butter in one week, and over 11 lbs. a week seven months after calving.
- Imp. MULBERRY, 44 lbs. milk daily, on grass alone, day after day; over 400 lbs. of butter a year.
- MULBERRY 2nd, 19 quarts milk daily, and 14 lbs. butter a week, at three years old.
- MULBERRY 5th, 8½ lbs. butter a week, with first calf, in mid-winter, on dry hay and four quarts ground oats daily.
- LITTLE MULBERRY, 10½ lbs. butter a week, in mid-winter, with second calf, on ground oats and hay; again, 15 oz. butter from 5 qts. milk, then giving 10 qts. daily.
- BERTHA BLACK, an Alpha heifer, 10½ lbs. butter, at 3 years old.
- EUGENIE 2nd, 14 lbs. butter in one week; winner of numerous prizes in the States, and of the \$100 prize at the Queen's Co. Fair. Never shown in Canada.
- WEE MAGGIE, a Rex heifer, 7 months after first calving, made 7 lbs. butter a week, on dry feed.
- MAGGIE BRADLEY (g. granddaughter of the famous Bradley cow, with record of 18 lbs. per week) took 1st prize as a two-year-old in Toronto, '82; 1st at Kingston, stood in gold medal herd at Kingston, and took silver medal there as best female of any age. The following April, at 32 months old, 7 months after first calf, and again due to calve in 4½ months, made 7 lbs. butter in one week, on dry feed.
- PRINCE EDWARD'S PATIENCE, dropped second calf at 3 years old, and for the three following months, November, December and January, averaged 20 qts. milk daily, and is now, though more than 7 months calved and 4½ months in calf again, milking 15 qts. daily. Was in gold medal herd at Kingston, '82. Her dam and grand-dam were in gold medal herd at Ottawa, in '79.

211-f

E. M. JONES, Belvedere Farm, Brockville, Ont.



ADJOINED SALE

Choice & Well Situated Farm Lands

Province of Manitoba and North-West Territories of Canada.

At Brandon, commencing on TUESDAY, the 3rd JULY next, there will be offered at Public Auction a portion of the even-numbered sections lying along and adjoining the Canadian Pacific Railway in Manitoba, and in the Territorial District of Assiniboia, and of the even-numbered sections lying between the Twenty-four-Mile Belt of the main line of the Canadian Pacific Railway and the International Boundary, and between the Red River and the Coteau or Dirt Hills.

COAL LANDS.

Some of the Coal Lands on the Souris River will also be offered. Further particulars of the lands, the upset prices and the terms and conditions of sale, may be learned at the Dominion Lands Office, Winnipeg. By order, LINDSAY RUSSELL, Deputy Minister of the Interior.

Department of the Interior, Ottawa, 8th June, 1883. 211-a

SEED WHEAT

For Fall Sowing.

We beg to notify our numerous friends and customers that our Catalogue of Wheats will be ready about the 20th of July. Several new varieties to offer this season, together with all the old and tested sorts. Catalogues mailed to all applicants. Send for one.

PEARCE, WELD & CO., Seed Merchants, - - London, Ont. 211-a.

BEAN'S HAY STACKER, HAY LOADER AND STACK ROOF

With 2 Men, 3 Boys and 5 Horses will take from the swath and put in the stack 60 to 70 tons of hay in ONE DAY. Guaranteed to do more and better work than any hay machine in the world. BEAN'S HAY LOADER, only practical Loader made—QUICKEST AND EASIEST. BEAN'S STACK ROOF more than pays for itself in a year. Send for Circular. J. H. BEAN & SON, Decatur, Ill., U.S. 211-a

DITCHING MACHINE

FOR UNDERDRAINING. Capacity, half-mile to one mile per day Three feet deep. WM. RENNIE, SOLE MANUFACTURER, TORONTO, - - CANADA. 211-f

Hammond's Slug Shot

AN INSECTICIDE AND FERTILIZER Will destroy Potato Bugs, Chinch Bugs, Rose Bugs, and all Lice, Worms, or Caterpillars upon melons, cucumbers, squash or grape vines, tobacco, egg plants, currants, fruit, or ornamental trees, and all shrubs and flowering plants. Price 15c, per lb., sent free to any address. Address GEO. McBRIDE, Seedman, 211-a London, Ont.

BIG PAY

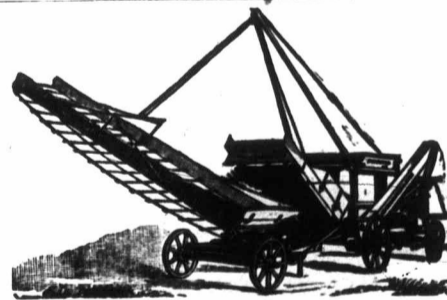
GOOD MEN.

We want an Agent in every Village and Township in Ontario—the West especially—and will give the largest percentage paid by any Tea House in America.

Send address to

TORONTO TEA CO.
Market Lane,
LONDON.

211-a



THE RUSSELL INDEPENDENT Lateral Moving Stacker.

Complete. Convenient. Durable. It saves from two to four men on the stack. Saves the chaff by depositing it in the centre of the stack. PRICE, COMPLETE, \$125.00. Furnished in Four Sizes. Can be adapted to any Thresher. Address for full particulars, RUSSELL & CO., Massillon, Ohio. 211-b

STOCK NOTES.

(Continued from page 222.)

Give the hogs some charcoal. To do so we often burn a brush pile or heap of rubbish and drown out the coals.

Give the pigs plenty of grass and other green food during the summer, in order to make them grow rapidly, and to keep them healthy. There would be far less swine diseases if the pigs were given plenty of grass to eat.

At this season of the year give your sheep plenty of pure fresh water. If possible avoid stagnant pools and marshes—for around these are deposited the eggs from which the lombriz and other destroyers of our sheep are hatched.

Horse buyers are numerous on P. E. Island this season. They report that there is a good stock of horses in the Province, but owners hold them so high that it is impossible to do business with them. However, large numbers are being exported every week to the United States.

Mrs. Jones, of Brockville, informs us that she has in quarantine a Jersey bull of the Signal strain, which she considers as the most important introduction of Jersey blood yet made into Canada. Some of this strain are held in the State at from \$7,000 to \$10,000 each.

Mr. Wm. Hodgson, of Myrtle, Ont., recently marketed thirty-three Cotswold fleeces. One weighed 24½ lbs., while a number weighed together averaged 22 lbs. per fleece. This is said to be the highest average weight reached by any grade of wool other than Cotswold.

Fort Worth Daily Gazette.—The cattle drive for the present year has exceeded all expectations. Over 200,000 cattle have passed over the trail that leads through Albany up to this date. The cattle crop of Texas continues to surprise the public year after year by its proportions and value.

The Baroness Burdette-Coutts was a successful exhibitor at the Crystal Palace Goat Show. Her exhibits were a pair of white Angoras, imported from Australia. The champion "billy" in the show was a stranger from Scotland, described as of immense size, big enough to buck at a locomotive, and of a slouching Polar bear appearance.

A writer says: The capacity of the Great American Desert to grow beef, if estimated at the low average of twenty steers per square mile of area, will exceed twenty millions of cattle, which would furnish four or five millions a year for the market. Think of what a food supply and what a commerce these figures comprise! The plains are the great pasture fields of the American nation for all time to come.

The most common and most serious mistake of beginners in soiling is in feeding too large messes. Give what will be eaten clean, and if possible nothing more. If by any miscalculation more has been given than cattle will eat, gather it up clean and throw it to the hogs. They will eat most of what is left by other stock, while, if left in their racks uneaten, cows will grow poor and shrink in their milk no matter how abundantly fed.

In the following paragraph is an obvious moral to all of that class of farmers and breeders who consider that a mare is all right for breeding when unfit for anything else: "A blind brood mare, belonging to H. M. Taylor, of Alaldeen, Mich., recently foaled a blind colt, there being no sight to the eyes. The sire was a well-known horse that took first premium at the State Fair when a 2-year-old, as a draft stallion, and has as good eyes as any horse."

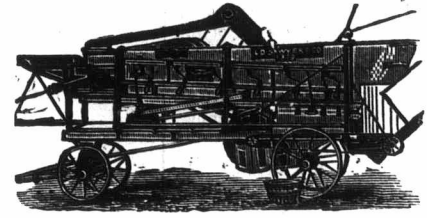
SHEEP MARKING.—Tar and many other substances injure the wool. The Scientific American gives the following water proof branding ink: Shellac, 2 oz.; borax, 2 oz.; water, 25 oz.; gum arabic, 2 oz.; lampblack sufficient. Boil the borax and shellac in water till they are dissolved, and withdraw from the fire. When the solution has become cold, complete 25 ounces with water, and add lampblack enough to bring the preparation to a suitable consistency. When it is to be used with a stencil, it must be made thicker than when it is applied with a brush. The above gives a black ink; for red ink substitute Venetian red for lampblack; for blue, ultramarine; and for green a mixture of ultramarine and chrome yellow.

(Continued on page 226.)

HAMILTON AGRICULTURAL WORKS

The Pioneer Threshing Machine
Works of Canada.

ESTABLISHED 1836.



Our Celebrated GRAIN SAVER is the Best and Most Perfect THRESHER and SEPARATOR made in the Dominion, being first over all others for

**Durability, Workmanship, Fast & Clean Work,
Perfection of Parts, Ease of Management,
Simplicity of Construction, Light-
ness of Draft, Capacity for Work.**

We have Machines working in all parts of Canada, giving the very best satisfaction, when driven by either **Steam or Horse Power.**

**It is a General Favorite with the Farmers, who prefer it
for Fast and Clean Work.**

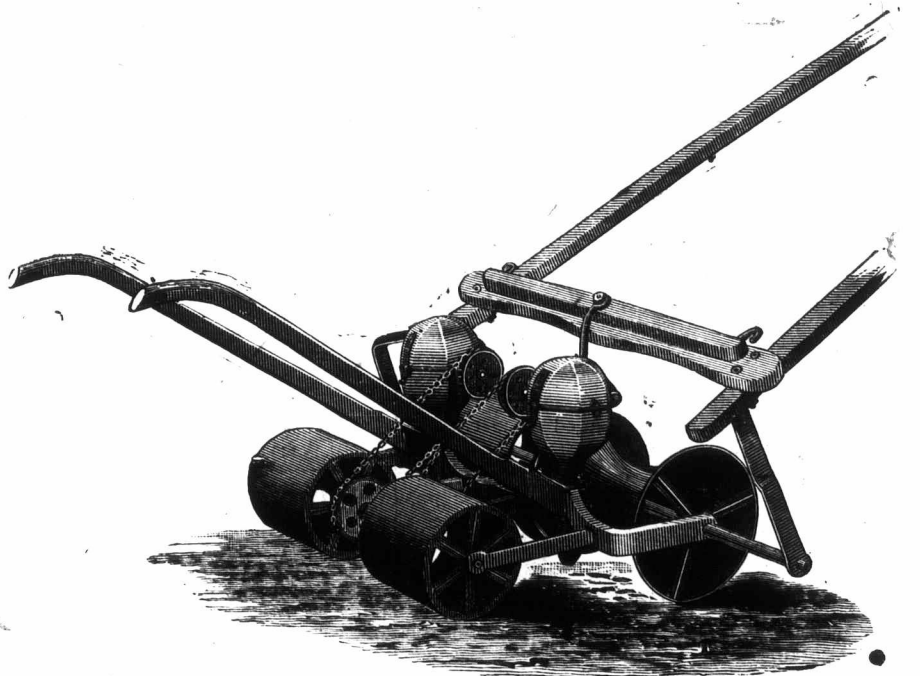
SPECIAL SIZE MADE FOR STEAM POWER.

Address us for Circular and Price List of THRESHERS, CLOVER MILLS, HORSE POWERS, REAPERS AND MOWERS. A personal inspection is solicited.

173-loom

L. D. SAWYER & CO.,
HAMILTON, ONT., CANADA.

HORSE TURNIP SEED DRILL



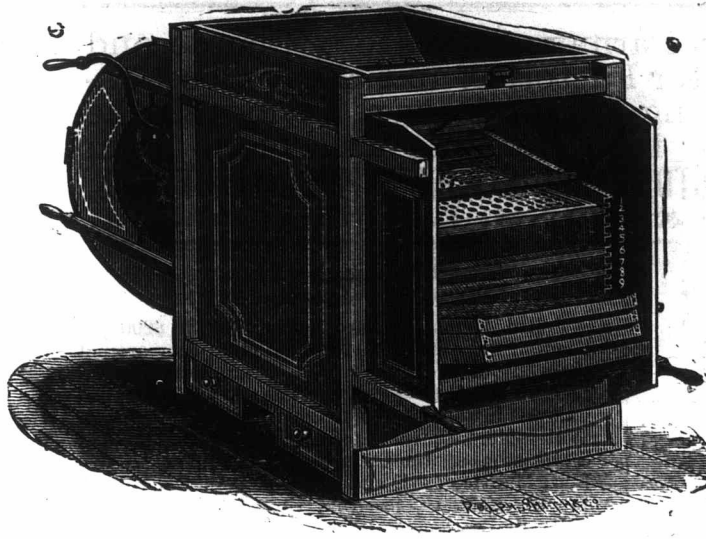
All Iron, with New Improved Iron Cannisters.
**Sows Turnip, Carrot, Beet and Mangold
Wurtzel Seeds.**

MANUFACTURED BY

THOS. GOWDY & CO.,

206-4f

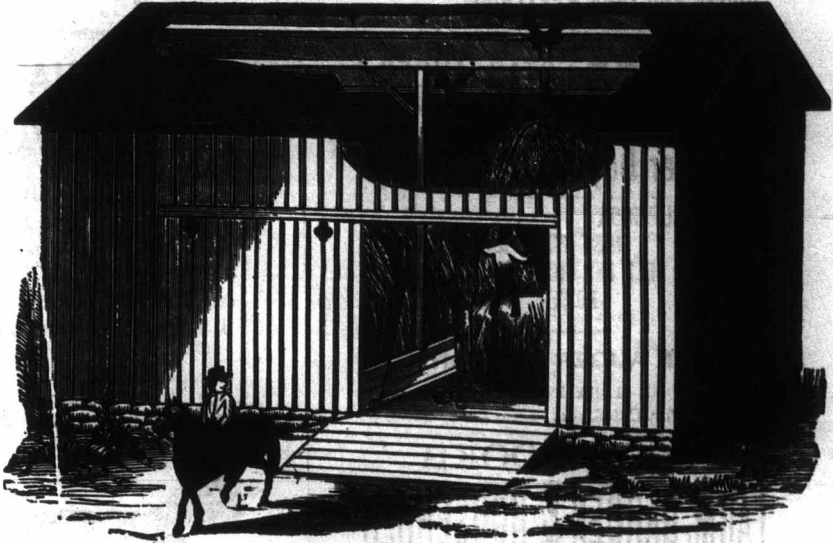
GUELPH, ONTARIO,



THE CHATHAM Fanning Mill!
 Will clean all kinds of grain and seeds perfectly.
 Screens and Riddles Adjustable to any Pitch.
 Gearing inside. Sold on liberal terms and delivered, freight paid, to any station. For further particulars address,
Manson Campbell
 Chatham, Ont. 210-C

FAIRBANKS' SCALES,
 FAIRBANKS & CO.,
 377 ST. PAUL STREET, MONTREAL.

E. L. Church's Hay Elevator and Carrier!



THE VERY BEST IN THE MARKET.

There are thousands of these Elevators and Forks now in use in Canada, everywhere giving the very best satisfaction.
 Sent on Trial to Responsible Farmers.

Manufactured by **WORTMAN & WARD, London, Ontario.**

208-d COR. YORK AND WILLIAM STREETS.

LINSEED CAKE

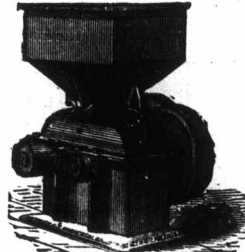
Linseed Cake Meal

The Best Food Known for Stock. For sale by the Manufacturers. Quality guaranteed pure. Quotations for any quantity sent on application.

Wright & Lawther Oil and Lead Man'g Co.

206-1 Chicago, Ill., U. S. A.

THE NEWELL PATENT UNIVERSAL GRINDER.

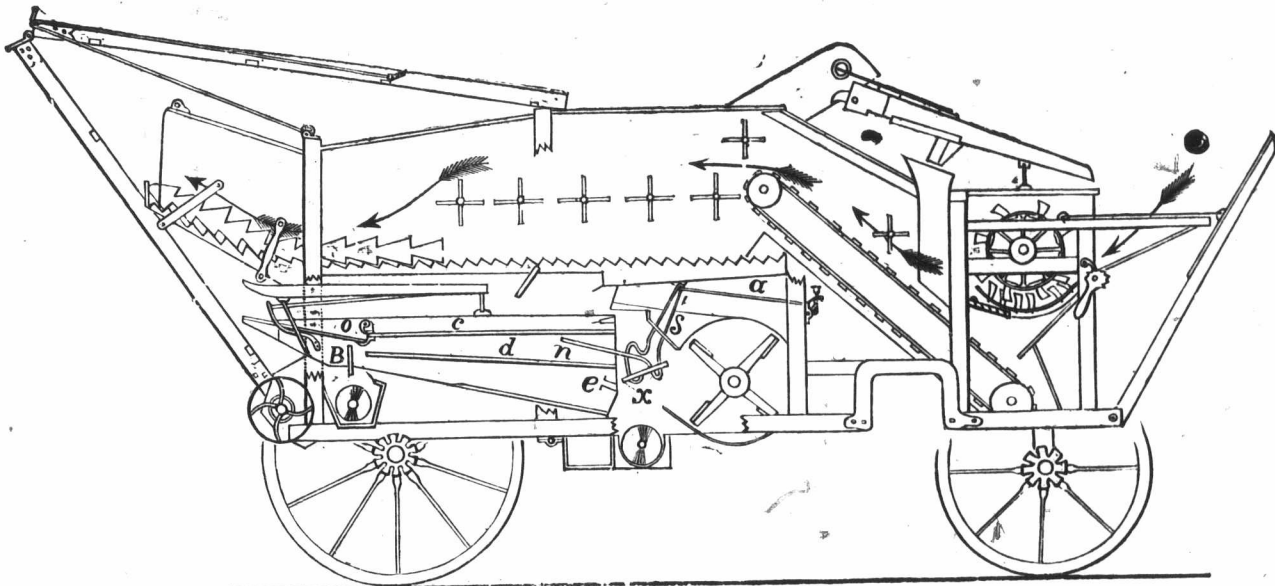


Award of Gold and Silver Medals.
Newell & Chapin, Proprietors,
 95 Bonaventure St. Montreal.

These Mills save time, grind any kind of grain very fast and without heating. Larger size Mills working on same principle with different style of cutter, grinding phosphates, gold and silver ores, quartz, plaster, clay, bones, fish-scrap, bark, &c., &c.

210-L

SECTIONAL VIEW OF MILLER'S "NEW MODEL" VIBRATING THRESHER.



MANUFACTURED BY THE JOSEPH HALL MANUFACTURING COMPANY, OSHAWA, ONTARIO

The Most Perfect Thresher, the Most Perfect Separator, the Most Perfect Cleaner Ever Offered to the Public. The Only True Grain Saver.

To the Editor of the Canadian Post:

Sir,—Please allow me space in your valuable paper to make the following statement, which I know will be of interest to all my farmer friends who read your journal. I employed a threshing machine to thresh my grain on the 26th day of January. It was manufactured by John Abell, of Woodbridge. On February 6th I employed Messrs. Wetherup & Curtis to finish my threshing with a "New Model" Vibrating Threshing Machine manufactured by the Joseph Hall Manufacturing Co. of Oshawa.

Messrs. Wetherup & Curtis re-threshed part of the straw and chaff threshed by the Woodbridge machine, and took therefrom thirty bushels of clean barley.

This "New Model" Vibrator is the most perfect thresher, separator and cleaner I ever saw. Yours very respectfully,
 DAVID GRAY, 2nd Con. of Ops.

Ops, February 18, 1883.

Prince Albert, Dec. 18th, 1882.

To the Editor of the Port Perry Standard:

Sir,—I desire to call the attention of the farmers of this vicinity to a new Threshing Machine made by the Jos. Hall Manufacturing Co. of Oshawa, called the New Model Vibrator. Mr. Jos. Vickery bought one of these machines, and threshed for me four days this winter, and gave me entire satisfaction. With the construction of the screens, vibrating motions, and other attachments, I think it utterly impossible for any grain to be wasted, and am fully convinced in my own mind that it has saved me double the price of threshing in the saving of grain this season. It cleans the grain perfectly and threshes very rapidly. It is a real grain saver.

Yours truly,
 JOHN McDONALD.

208-d

Black Creek, Nov. 13th, 1882.

Mr. F. W. Glen:

DEAR SIR,—I thought I would write to you and tell you how I got along with the "New Model" Thresher I got you last summer. I will tell you the truth, and nothing but the truth. The machine has given me perfect satisfaction wherever I have threshed. I could not begin to thresh for all who wanted me, and could have had jobs enough for two machines if I had had them. The farmers whom I have threshed for say that the "New Model" is the only perfect machine they had ever had thresh for them.

Yours truly,
 JOSEPH SHERK.

Be Sure and Examine the "New Model" Before you Purchase.

Intercolonial Railway.

The Great Canadian Route to and from the Ocean.

For Speed, Comfort & Safety is Unsurpassed.

Pullman Palace, Day and Sleeping Cars on all through Express Trains.

Good Dining Rooms at Convenient Distances. No Custom House Examination.

Passengers from all points in Canada and the Western States to Great Britain and the Continent should take this route, as hundreds of miles of winter navigation are thereby avoided. Importers and Exporters will find it advantageous to use this route, as it is the quickest in point of time, and the rates are as low as by any other. Through freight is forwarded by FAST SPECIAL TRAINS, and the experience of the last two years has proved the Intercolonial route to be the quickest for European freight to and from all points in Canada and the Western States. Through Express trains run as follows:

GOING EAST.
 Leave London..... 2:00 a. m.
 Montreal..... 10:00 p. m.
 Quebec..... 8:10 a. m. next day.
 Arrive St. John, N. B..... 7:30 " day after.
 Halifax, N. S..... 12:40 p. m.

GOING WEST.
 Leave Halifax..... 2:45 p. m.
 St. John, N. B..... 7:25 " "
 Arrive Quebec..... 8:30 " next day.
 Montreal..... 6:00 a. m. day after.
 Toronto..... 10:52 p. m. day after.

The Pullman cars which leave Montreal on Monday, Wednesday and Friday, run through to Halifax without change, and those which leave Montreal on Tuesday, Thursday and Saturday run through to St. John, N. B., without change. All information about the route, and also about freight and passenger rates will be given on application to

E. DE LAHOKE
 Ticket Agent, No. 3 Masonic Temple, London.
 R. B. MOODIE,
 Western Freight and Passenger Agent, 93 Rossin House Block, York St., Toronto.
 GEO. TAYLOR,
 General Freight Agent, Moncton, N. B.
 A. S. BUSBY,
 Gen'l Passenger and Ticket Agent, Moncton, N. B.
 D. POTTINGER,
 Chief Superintendent, Moncton, N. B.
 Railway Office, Moncton, N. B., 28th November, 1882. 206-4f

ENGINES & BOILERS

best materials. FEED WATER HEATERS, FORCE PUMPS, INJECTORS, BRASS GOODS, PIPE and FITTINGS.

WRITE FOR 1883 CATALOGUE.

For Farmers, Threshers, Cheese and Butter Factories, and all purposes requiring Steam Power, having all the best improvements and made from E. LEONARD & SONS, London, Canada.

WATER STAR AUGER!

\$20 Per Day for Well Boring
HAS NO SUPERIOR!
FIRST PRIZE AND DIPLOMAS!
BORES 20 FEET PER HOUR, HAND OR HORSE POWER.

STAR AUGER COMPANY,
68 MARY ST., HAMILTON, ONT.
Send for Catalogue.

GOOD BOOKS FOR THE FARM, GARDEN & HOUSEHOLD

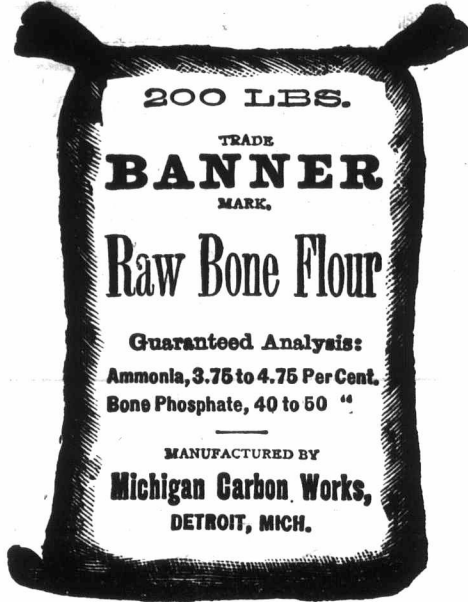
- Allen's (R. L. & L.F.) New American Farm Book.....\$2 50
- American Dairying, by Prof. L. B. Arnold..... 1 50
- American Bird Fancier..... 50
- Allen's (L. F.) American Cattle..... 2 50
- Barn Plans and Outbuildings, 257 Illustrations and Designs..... 1 50
- Buist's Family Kitchen Gardener..... 1 00
- Butter and Butter Making. Hazard..... 25
- Book of Household Pets; paper..... 50
- Bommer's Method of Making Manures..... 25
- Brill's Farm Gardening and Seed Growing..... 1 00
- Clock's Diseases of Sheep..... 1 25
- Cook's Manual of the Apiary..... 1 25
- Dadd's American Cattle Doctor, 12 mo..... 1 50
- Dog, The—Idstone..... 1 25
- Dog Training—S. T. Hammond..... 1 00
- Elliott's Lawn and Shade Trees..... 1 00
- Feeding Animals, by E. W. Stewart..... 2 00
- Fuller's Forest Tree Culturist..... 1 50
- Flax Culture. (Seven Prize Essays by Practical Growers)..... 30
- Fuller's Grape Culturist..... 1 50
- Fuller's Small Fruit Culturist..... 1 50
- Fulton's Peach Culture..... 1 50
- Gardening for Young and Old; by Harris..... 1 25
- Gregory on Squashes (paper)..... 30
- " Cabbages..... 30
- " Carrots, Mangolds, etc..... 30
- " Onion Raising..... 75
- Guenon on Milch Cows..... 1 00
- Harlan's Farming with Green Manures (new)..... 1 50
- Harris on the Pig..... 1 50
- Henderson's Gardening for Pleasure..... 1 50
- Henderson's Gardening for Profit..... 1 50
- Henderson's Practical Floriculture..... 1 50
- Hop Culture. By nine experienced cultivators..... 30
- House Plans for Everybody. S. B. Reed..... 1 50
- Hunter and Trapper..... 75
- Husmann's American Grape Growing and Wine Making; Illustrated..... 1 50
- Insects Injurious to Fruits, by W. Saunders. 440 illustrations..... 3 00
- Johnson's How Crops Grow..... 2 00
- Johnson's How Crops Feed..... 2 00
- Johnson's Winter Greenhouses at Home..... 2 00
- Keeping One Cow Profitably: illustrated with full page engravings of the most desirable Dairy Cows..... 1 00
- Law's Farmer's Veterinary Adviser: authorized edition..... 3 00
- Law's Farmer's Veterinary Adviser: Canadian edition..... 2 00
- Our Farm of Four Acres: paper, 30c.; cloth 60c.; extra cloth..... 1 00
- Practical Farm Draining, &c. (By J. J. W. Billingsley)..... 1 00
- Packard's Our Common Insects..... 1 50
- Quincy (Hon. Josiah) on Soiling Cattle..... 1 25
- Quinn's Pear Culture for Profit..... 1 00
- Randall's Sheep Husbandry..... 1 50
- Rarey's and Knowlson's Complete Horse Tamer..... 50
- Roe's Play and Profit in my Garden..... 1 50
- Stewart's Stable Book..... 1 50
- Stoddard's An Egg Farm: paper, 50c.; cloth 75..... 75
- Talks on Manures: Joseph Harris..... 1 50
- Thomas' Farm Implements and Machinery..... 1 50
- Ten Acres Enough..... 1 00
- Thompson's Food of Animals..... 1 00
- Waring's Farmer's Vacation..... 3 00
- Wheeler's Homes for the People..... 2 00
- Willard's Practical Butter Book..... 1 00
- Williams' Window Gardening..... 1 50
- Waring's Draining for Profit and Health..... 1 50
- Waring's Elements of Agriculture..... 1 00
- Wright's Practical Poultry Keeper..... 2 00

Any of the above useful books will be mailed post-paid, from the FARMER'S ADVOCATE Office, on receipt of price named, and for books under \$1, 5c., and over \$1, 10c. additional to cover postage, etc

NOYES' HAYING TOOLS

FOR STACKING OUT IN FIELDS OR MOWING AWAY IN BARN.
Save labor and money, simple, durable, cost but little. No trouble to get over high beams or to the end of deep days. Thousands now in use.
Wood Pulleys, Floor Hooks, etc. Send for circular and designs for tracking barns, to U. S. Wind Engine & Pump Co., Batavia, Kane Co., Ill. 210-C State where you saw this advt.

GOOD FOR ALL CROPS



Price \$45 per ton. Sample Barrel of 200 lbs. sent on receipt of \$4.50.

Samples and pamphlet containing full information sent free on application. Good agents wanted in every town.

THE OLD RELIABLE HALLADAY STANDARD WIND MILL, 27 YEARS IN USE.



GUARANTEED Superior to any other make. 17 Sizes—1 to 40 H. Power Adopted by U. S. government at forts and garrisons and by all leading railroad companies of this and other countries. Also the Celebrated I & L FEED MILL, which can be run by any power and is cheap, effective and durable. Will grind any kind of small grain into feed at the rate of 6 to 25 bushels per hour, according to quality and size of mill used. Send for Catalogue and Price-List. Address U. S. Wind Engine & Pump Co., Batavia, Ill. 210-F State where you saw this advt.

IN ELEGANT SCRIPT TYPE, on 50 Beautiful Imported Chromo Cards, 10c., 14 packs \$1., 26 pearl bevel Gilt Edged Cards with lapped corners, 15c. Agents' Large Album, containing all the Latest Styles of Imported, Bevel Edge and Satin Fringe Cards, with illustrated premium list and private terms to Agents, 25c. CARD MILLS Northford, Ct.

D. R. W. E. WAUGH. OFFICE The late Dr. Anderson's, Ridout Street, LONDON ONT. 195-t

STOCK NOTES.

(Continued from page 224.)

Polled-Angus bulls are making \$150 to \$200 per head, in the county fairs in Scotland; they are not generally of the fancy pedigree families. Seventeen bulls and twenty-eight heifers were dropped in April in the herd belonging to Mr. Wilkin, of Waterside. In the herd at Pitfour the crop of calves numbers ten bulls and eight heifers, to sires Lord Maurice 1881, and Lord Buchan 2205. Mr. Fraser, Kinbata, has sold three Polled yearling bulls, by Battlement 1768. The purchaser is Mr. Craig, Airdrie, Kirkdean, Dumfries, who bought them for export to America.

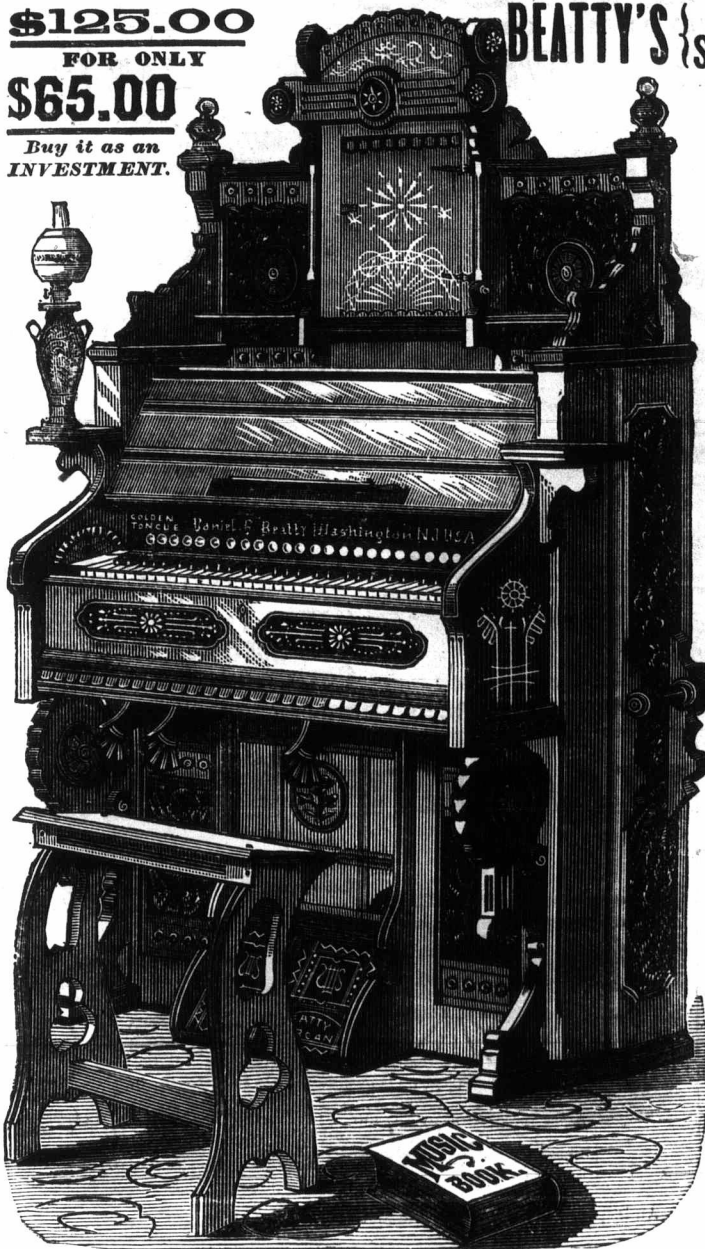
CATTLE SHIPMENTS.—Notwithstanding the vicissitudes which have attended the export of cattle from this country to England, Messrs. J. Wood, W. F. George and H. Humphrey, of Sackville, are still conducting the business quite extensively. Since the middle of March they have shipped 660 cattle, in three cargoes. The first resulted satisfactorily, but on the second there was quite a heavy loss, owing to regulations in force at the time, which required all imported cattle to be killed within two days of landing, and the loss of 15 out of 250 on account of rough weather at sea. The third cargo of 250 is expected to arrive at Glasgow ere this, and we trust the enterprising shippers will soon hear of satisfactory returns from it. The above cattle, with the exception of 130 got in Albert Co., were all bought in Westmoreland and Cumberland, and cost 4½c. to 5c. a lb., live weight.

THE NEW STOCK-BREEDING COMPANY.—Notice is given in the Gazette for a charter of incorporation by letters patent for "The Geary Brothers Canadian Stock-breeders and Importers Association, limited." The operations of the proposed Association are to be carried on in the Dominion of Canada and elsewhere. The stock farms of the Association are to be at the town of Bothwell and township of Zone, in the county of Kent and Province of Ontario, with head office of Association in the city of London, in said Province. The capital stock of the Association is to consist of one hundred thousand dollars in two thousand shares of fifty dollars each. The purposes for which incorporation is sought are the importing, breeding, raising, buying and selling cattle, horses, sheep and other stock, and the carrying on in all its branches of stock raising, the acquiring of such lands and premises and the erection of such buildings thereon as may be necessary to the successful carrying on of a first-class stock farming business.

An association has been formed in the United States of breeders of Jersey Red swine, under the title of "Duroc or Jersey Red Swine Club." They intend holding their annual meeting on the third day of the Fat Stock Show at Chicago. The following is the standard:

The true Duroc or Jersey Red should be long, quite deep-bodied, not round, but broad on the back, and holding the width well out to the hips and hams. The head should be small, compared with the body, with the cheek broad and full, with considerable breadth between the eyes. The neck should be short and thick, and the face slightly curved, with the nose rather longer than in the English breeds; the ear rather large and lopped over the eyes and not erect. Bone not fine, nor yet coarse, but medium. The legs medium in size and length, but set well under the body and well apart, and not cut up high in the flank or above the knee. The hams should be broad and full well down to the hock. There should be a good coat of hair of medium fineness, including the bristles at the top of the shoulders; the tail being hairy and not small, the hair usually straight, but in some cases a little wavy. The color should be red, varying from dark, glossy, cherry red, and even brownish hair, to light yellowish red, with occasionally a small fleck of black on the belly and legs. The darker shades of red are preferred by most breeders, and this type of color is the most desirable. In disposition they are remarkable mild and gentle. When full grown they should dress from 400 to 500 pounds, and pigs at nine months old should dress from 250 to 300 pounds.

\$125.00
FOR ONLY
\$65.00
Buy it as an
INVESTMENT.



BEATTY'S {27} BEETHOVEN ORGANS \$65.00

Regular Price \$125.00 without Bench, Book and Music.

The Beethoven is beyond a doubt the most popular Cabinet Organ ever placed upon the market. During the past 119 working days 6,434 were manufactured and shipped to all parts of the civilized world. The factory is taxed to its utmost capacity to supply the demand, working nights by Edison's Electric Light to fill orders promptly. If you are about to purchase a Cabinet Organ or to buy one as an investment to sell again you should avail yourself of the special limited offer as below. (Be sure to read Description of Stops 26 and 27, see below.)

A BRIEF DESCRIPTION OF THE INSTRUMENT.
There are TEN FULL SETS OF GOLDEN TONGUE REEDS built upon an entirely new and scientific plan, producing music equal to an organ costing four times its value of other makes. The Reeds are arranged in the Reed Board, as follows:
1st. Set Charming Saxophone Reeds. 6th. Set Sweet Vox Celeste Reeds.
2d. Set Famous French Horn Reeds. 7th. Set of Soft Cello Reeds.
3d. Set Beautiful Piccolo Reeds. 8th. Set of Dulciana Reeds.
4th. Set Jubilant Violina Reeds. 9th. Set of Diapason Reeds.
5th. Set Powerful Sub-Bass Reeds. 10th. Set of Clarinet or Celeste Reeds.
Special attention is called to the number of stops used in this famous instrument. With the above 10 sets Golden Tongue Reeds and the following Stops fourteen (14) distinct combinations are produced. THUS MAKING THIS ORGAN EQUAL TO 14 ORGANS OF ORDINARY MAKE COMBINED.

- 27 STOPS, as follows:**
- | | | |
|------------------------------|-----------------------------|-----------------------------|
| 1 CELLO, 8 ft. tone. | 9 VIOLA DOLCE, 4 ft. tone | 17 VOIX CELESTE, 3 ft. tone |
| 2 MELODIA. | 10 Grand Expression 8 ft. | 18 Vox Jubilant, 3 & 4 ft. |
| 3 Clarabella. | 11 French Horn, 8 ft. tone. | 19 Piccolo, 3 ft. tone. |
| 4 SUB-BASS, 16 ft. tone. | 12 Harp Eolian. | 20 Octave COUPLER. |
| 5 Bourdon, 16 ft. tone. | 13 VOX HUMANA. | 21 Orchestral Forte. |
| 6 SAXAPHONE, 8 ft. tone. | 14 Echo, 8 ft. tone. | 22 Grand Organ Stop. |
| 7 VIOL DI GAMBA, 8 ft. tone. | 15 Dulciana, 8 ft. tone. | 23 Right Knee Stop. |
| | 16 Clarinet, 8 ft. tone. | 24 Automatic Valve Stop. |

Latest Improvements: 27 MAESTRO PERCUSSION, open Patented Combination Swell. To which is added the AEROSTATIC EXPRESSION Compass or Regulator, showing at a glance the amount of pressure upon the instrument, same as a compass to the ship so is this new improvement to the Organ. (See cut shown under the lamp or side of case.) Case is built from handsome Solid Black Walnut (if preferred Ash or Ebony). In Solid Mahogany Case only \$15.00 extra. (Height, 72 ins., Depth, 24 ins., Length, 48 ins.) All cases are profusely ornamented with neat hand carvings. Manufactured so as not to take the dirt or dust. Thoroughly seasoned and kiln dried; will stand the test of any climate; handsome rubbed varnish finish and polish; carved and ornamented with arabesque designs in gold. IT IS BUILT TO LAST, NOT FOR SHOW. THE CASE IS VERY HANDSOME. Contains Lamp Stands, Pocket for Music, Trough for Upright Bellows, Steel Springs, Nickel Plated Pedal Plates, BEATTY'S PATENT STOP ACTION and SOUNDING BOARDS. REGULAR CATALOGUE PRICE OF THE BEETHOVEN, IN THE ABOVE STYLE OF CASE, IS \$125.00 without Bench, Book and Music.

SPECIAL TEN-DAY OFFER TO READERS OF THE FARMER'S ADVOCATE.

If you will remit me only \$65.00 and the annexed Coupon within 10 days from the date hereof, I will box and ship you this Organ, with Organ Bench, Book, etc., exactly the same as I sell for \$125. You should order immediately, and in no case later than 10 days. One year's test trial given and a full warranty for six years. GIVEN UNDER MY HAND AND SEAL this 15th day of July, A. D. 1883.



Daniel F. Beatty

COUPON On receipt of this Coupon from any readers of **\$60.00**
THE FARMER'S ADVOCATE
and \$65.00 in cash by Bank Draft, Post Office Money Order, Registered Letter, Express prepaid, or by check on your Bank, if forwarded within 10 days from the date hereof, I hereby agree to accept this Coupon for \$60.00 as part payment on my celebrated 27 Stop \$125 Beethoven Organ, with Bench, Book, etc., providing the cash balance of \$65.00 accompanies this Coupon, and I will send you verified, fully warranted for six years. Money refunded with interest from date of remittance if not as represented after one year's use.
(Signed) **DANIEL F. BEATTY.**

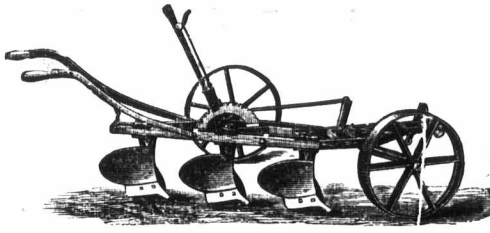
VISITORS ALWAYS WELCOME. I will give 8 days grace from the above date, to any person who will come and select the instrument in person, and will allow \$5.00 for traveling expenses, if they buy. If possible, I would much rather have buyers come and select instrument in person. FREE COACH meets all trains. Hotel Meals Free, whether you buy or not; you are welcome anyway.
AS AN INVESTMENT. If you do not want an organ yourself, it will pay you to want the instrument introduced in this New Style of Case quickly, hence this special limited time offer and price. Only one will be sold at this extremely low price in each vicinity, and, after the ten day offer has expired, the price will POSITIVELY be \$125 without Bench, Book, and Music. There are over 50,000 post-offices in the United States and Canada, and I want one of these instruments introduced in each post village. Will you order? It is shipped subject to one year's trial; nothing can be fairer.

View, Latest Style **RESONANT WALNUT** Case No. 15,000.
IMPORTANT ANNOUNCEMENT! Keys, Lumber, Steel Springs, Rubber Cloth, Reed Boards, etc., used in the construction of this instrument, are of the best quality and are bought from the very same parties that sell to all other organ makers in the United States and Canada. The Beethoven, therefore, contains more Reeds, more Stops, more musical combination effects than an organ of ordinary make at four times its cost.

HOW TO ORDER. Enclosed find \$65.00 for Beethoven Organ in your latest style case. I have read your statement and I order one on condition that it must prove exactly as represented in this advertisement, or I shall return it at the end of one year's use and demand the return of my money, with interest from the very moment I forwarded it, at six per cent, according to your offer. Be very particular to give Name, Post Office, County, State, Freight Station, and on what Railroad. Be sure to remit by Bank Draft, P. O. Money Order, Registered Letter Express prepaid, or by Bank Check. You may accept by telegraph on last day and remit by mail on that day, which will secure this special offer. I desire this magnificent instrument introduced without delay, hence this special price. Providing order is given immediately.
Address or call upon
the Manufacturer

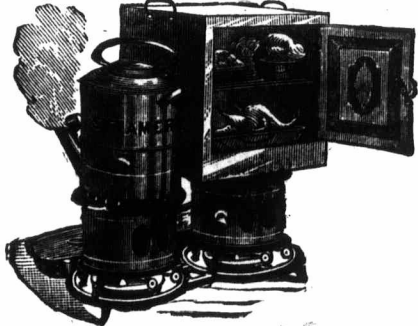
DANIEL F. BEATTY, Washington, New Jersey.

DEATH TO CANADA THISTLES.



ECLIPSE GANG PLOW.
BUNGAY MANUFACTURING COMPANY,
OF NORWICH,
Manufacturers of Agricultural Implements generally,
beg to call special attention to their
Eclipse Gang Plow and Two-Horse Cultivator.

Send for Illustrated Catalogue and Price List to
THE BUNGAY MANUFACTURING CO.,
Norwich, Ont.



Keep Cool and Save Money.
Procure an **IMPROVED MONITOR**—the only
Safe Oil Stove.

This Stove has been awarded the Diploma over all other Oil Stoves. It is perfectly Safe; will cook for a large family. Hundreds say it is worth 5 times its cost. For full particulars and wholesale or retail rates, address:
R. F. CAULFIELD & CO.,
Niagara Falls, Ont.

FRUIT & VEGETABLE EVAPORATORS

The Pacific all brick and iron stationary, and the Little Giant Portable Fruit and Vegetable Evaporators have the largest drying capacity for price of any in the market. They are designed for the rapid curing of all kinds of fruits and vegetables, meats, etc., which retain their natural flavor and color for any length of time in any climate. Send for circulars (illustrated) and particulars to

J. A. & H. BARTHOLOMEW,
Managers and Proprietors for the Dominion of Canada and State of Michigan,
237 AGENTS WANTED.
Vanessa P. O., Ont.



COCKSHUTT PLOW COMPANY (LIMITED)

MANUFACTURERS OF

CHILLED and STEEL PLOWS, SULKY PLOWS, PRAIRIE BREAKERS, &c.

This Cut Represents our
"BRANTFORD" SULKY PLOW

which is manufactured with either Prairie Breaker or Old Ground Bottoms, and is the same pattern as the celebrated BROWNE Sulky. This is the first Sulky Plow that has been manufactured in Ontario. We furnish it with either adjustable Rolling Coulter (as shown in the cut), or with plain Coulter, or with Jointer.

Warranted Equal to the Best.

SEND FOR CIRCULARS.



OFFICE & WORKS: SOUTH MARKET STREET, BRANTFORD, ONTARIO.

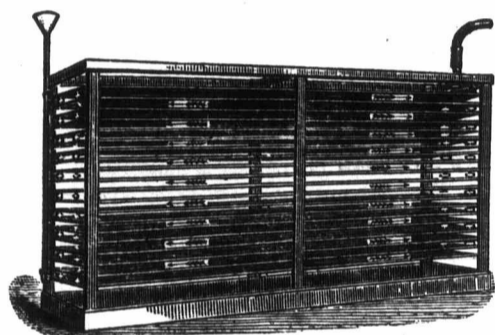
We Manufacture the
JOINTER PLOWS:
"CHAMPION," "JUNIOR,"
"PEERLESS," "UNION,"
and "REAUME."

NORTH-WEST PLOWS:
"BRANTFORD" Sulky Plow
"NOR-WEST" Gang Sulky
Plow.

"BRANTFORD" Prairie
Breaker.
"K" Old Ground and Turf
and Stubble Plows.

ALSO THE
"WESTERN," two-horse, and
"DIAMOND POINT," single,
Corn and Root Cultivator.

209-d



**ACME
STEAM HEAT
EVAPORATOR**

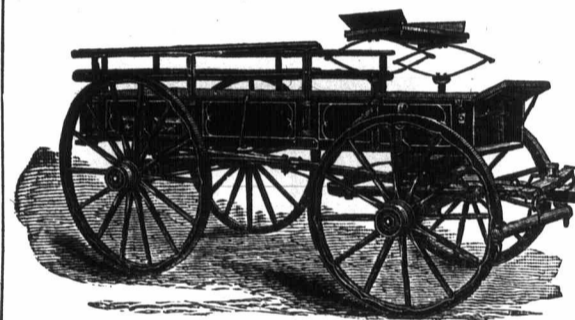
FOR DRYING
FRUITS & VEGETABLES

Has twice the capacity for its size of any machine in the market, and is warranted to use less than one-half the fuel used by any other drying machine. Is used for drying Straw Board, Fish, Confectioneries, etc.

Send for Catalogue and Price List.
J. J. BLACKMORE & CO.,
ST. THOMAS, ONT.

209-c

WAGONS! WAGONS!



Procure the Best.

The PLUMMER WAGON has had a reputation for the past

40 YEARS

as being unsurpassed. The greatest care is taken in procuring the best wood, best iron, and the best workmanship. Purchase no other until you have examined the Plummer Wagon. Every Wagon guaranteed. Send for Circulars, parts of Wagons supplied either wholesale or retail.

An inspection of the Works and Material respectfully invited. Address,

**THE PLUMMER WAGON and GENERAL MANUFACTURING CO.,
LONDON, ONTARIO,
CANADA.**

JOHN PLUMMER, President. JOHN LABATT, Vice-President. G. C. JOLLY, Secretary.

— THE —

UNION CHURN

Admitted to be the Best Churn
in the World!

Took the Following 1st Prizes Against
all Competitors:

Hamilton..... 1876 and 1881
London and Quebec..... 1877
Sydney, New South Wales..... 1877
Paris, France..... 1878
Toronto..... 1878, 1879 and 1880

Made in Four Sizes:

No. 1..... \$ 8 00 each, net cash
No. 2..... " 5 50 " "
No. 3..... " 9 00 " "
No. 4..... " 10 00 " "

When we have no agents we will forward to your nearest railway station for above prices.

MANUFACTURED ONLY BY
C. T. BRANDON & CO.
TORONTO,
Manufacturers of All Kinds of
Wooden Goods.

210-c

— THE —
'CORNELL' ENGINE & 'WIDE-AWAKE' SEPARATOR

IS MANUFACTURED IN CANADA ONLY BY

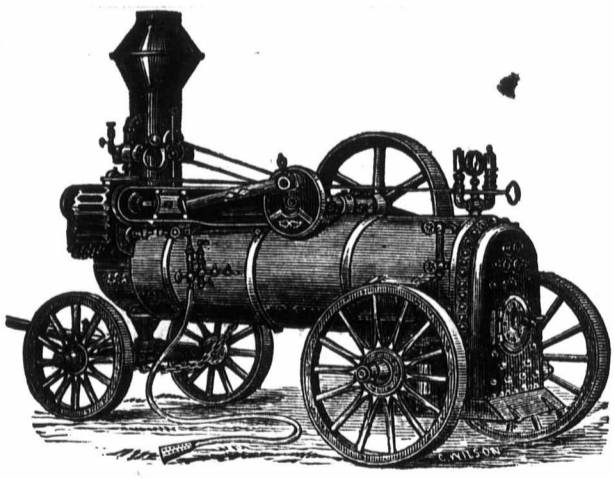
The HAGGERT BROS. MANUFACTURING CO., BRAMPTON, ONT.

The only Engine having an entire steel boiler—constructed upon purely scientific principles.

OVER 300 NOW IN USE IN CANADA

The only Traction Engine that propels and guides itself on the road without the aid of horses, and that goes either forward or backward.

The Cornell is the lightest, the strongest, the easiest managed, the most powerful, takes the least wood and water, the safest from fire, and the most suitable for threshing purposes of any Engine made in Canada.



The DOUBLE BELTED and over and under
DOUBLE WIND BLAST

"WIDE-AWAKE" SEPARATOR

with five Combined Automatic Grain Separating Beaters, Universal Shoe Shake, and Self-Grain Tagger.

The most perfect Thresher, Separator and Cleaner on this continent. For pleasure of feeding, easy motion, fast threshing of grain, cleaning and saving, the Wide-Awake has no equal.

Send for Illustrated Catalogue, with testimonials from purchasers.

HAGGERT BROS. Manufacturing Co., Brampton, Ont.
**SAMUEL KEAST, Agent, Masonic Buildings, Market Square,
London, Ont.**

209-d

