

FARMER'S ADVOCATE

PERSEVERE SUCCEED

AND HOME MAGAZINE

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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.

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We would suggest that agricultural societies offer among their prizes the "FARMER'S ADVOCATE AND HOME MAGAZINE" for one year. Those who have done this in a small way at first have found it so satisfactory that they have added to the number of premiums of this kind, and this custom is increasing. Such premiums do vastly more to promote the objects of the society than money prizes. Aside from the fact that one cannot fail to be greatly benefited by the teaching of the FARMER'S ADVOCATE AND HOME MAGAZINE, its regular coming once a month is a frequent reminder of the society and its fair, and thus the interest of the winner of the prize is kept alive the whole year. If the officers who have yet to arrange their premium list will think of this matter, they will see that they can in no other way make the money at their disposal go so far, and at the same time do as much good. Special rates are given to agricultural societies for copies for this purpose.

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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.

Our Monthly Prize Essay.

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.

A prize of \$5.00 will be given for the best essay on the comparative advantages and profits of *Summer and Winter Dairying*. The essay to be handed in before the 15th September next.

No essay upon the subject of "Drying and Evaporating Fruits" having been received up to date specified (15th July), though an essay has just come to hand, an editorial upon this important subject was prepared, and will be found on page 234.

30,000 COPIES.

THE SEVENTH ANNUAL ISSUE

THE EXHIBITION NUMBER.

Our Annual Exhibition Number for 1883 will be issued in Three Editions, the first of which will be published on or about the 15th August next. This special number will be circulated at the leading fairs of Ontario, Manitoba and Maritime Provinces, mailed to progressive farmers in the Dominion not yet among our subscribers, and a large number will be mailed to leading farmers and stock men in the United States and Great Britain.

The Seventh Issue of this unrivalled and leading advertising medium will be superior in many respects to any previous issue.

The great satisfaction which our patrons of former issues have manifested, shown so clearly in their continued liberal patronage, proves a guarantee to our new patrons that this medium is a most profitable means of advertising their implements, stock, etc., to the best class of Canadian farmers.

While thanking our patrons of former years for their confidence in our endeavors to promote their interests, we can assure them that our endeavors will not be relaxed, and that our increased facilities will be used to the utmost for their benefit.

This issue affords special advantages to advertisers who wish to push their business in Manitoba and Maritime Provinces. Advertising rates forwarded on application.

H. G. Charlesworth, of Rosedale and Oakland farms, Port Hope, Ontario, writes: "I cannot refrain from writing you expressive of the high opinion I have formed of your paper as an advertising medium. I have advertised largely for the past five years in both Canadian and American papers, but with no such results. I have not only been flooded with letters from all parts of the country, but they have been of such a character that I have experienced no delay in making sales."

O. Rust, Pres. of the Rust Well Auger Co. of St. Joseph, Mo., informs us that his Company has failed, but all orders will be promptly filled by the Empire Well Auger Co., of Ithaca, N. Y., U. S. A.

Our Fall Campaign

GRAND PREMIUMS FOR WORKERS.

Pushing Agents Wanted Everywhere.

To every subscriber, or any member of his family, to all post masters and school teachers, for one new subscriber with \$1.00, we will send, per mail, post paid, the charming lithograph "Yes or No," by Millais, or 1 lb. *Martin Amber Fall Wheat*, or 2 plants "Jersey Queen" strawberry, or 3 roots of "Lily of the Valley," or 1 copy of the *Farmer's Hand Book for 1884*; and for two new names with \$2.00, we will send a copy of the beautiful chromo "Windsor Castle," or "Balmoral Castle," or 3 Russian Mulberry plants, 9 to 12 inches, per mail. Send for sample copies, poster, list of book premiums, &c.

"You give good value for the money. I do not want to be without the ADVOCATE."

JOSEPH LAW, Claremont, Ont.

By the Way.

Never let your gates sag and fall down.

When the ditches are dry, clean them out and haul the cleanings to the yard for manure.

Cisterns should be immediately cleaned out on the first discovery of any unpleasant odors.

How many of your family—including wife and young folks—are to exhibit, as well as observe, at the fair?

Give the horses that are working hard an occasional pail of water, in which a large handful of oatmeal has been stirred.

Dr. Sturtevant, Director of the New York State Agricultural Experimental Station, has planted 140 varieties of corn.

A Hollander's maxims: When you see a good cow buy her. When you have a good cow keep her. When you find you have a bad cow sell her.

In many places the blight is affecting the potatoes; in others the great amount of rain has caused them to rot in the ground. We expect that prices will be high.

The swallows are the natural enemies of the midges and similar smaller insects that prey on grain. It is estimated that the nestlings of a single pair of swallows will in three weeks consume half a million insects.

It will pay to sow a bushel of rye per acre in the corn field now, and have it ready to plow under when you take the corn off. It is a first-class fertilizer for sandy land or other land that is lacking in vegetable matter, and upon heavy clay land its mechanical effects in lightening up the soil are equal to its fertilizing powers for increasing the growth of next year's crop.

It is worth while for farmers who use Paris green to know that the best antidote to the poison is iron rust. There are preparations of iron in liquid form which should be kept in farmers' houses wherever this popular insect poison is used. Of course, the poison should be got from the stomach by emetics wherever possible. Cases of accidental poisoning from Paris green are frequently reported in the daily papers.

Editorial.

Harvesting and Storing Potatoes.

This month is the time when the earlier varieties of potatoes should be dug. It is a great mistake to allow the tubers to remain in the ground until late in the fall, as the generality of farmers do. Hence they are exposed to rains and are liable to rot, or at least to get so thoroughly impregnated with water that it takes a long time for them to dry and become in a proper condition for winter storage. Then the potatoes near the surface being exposed to the sun and weather; turn green and are totally unfit for use. Then after being dug they are often carelessly left in heaps, and exposed to the action of winds and the sun. It is not generally known that a potato exposed to a keen wind for a length of time without any sun will greatly injure its eating qualities. To retain its proper flavor it should be excluded from the light as much as possible. For the want of proper management in harvesting and storing, a great percentage of the potatoes in the country are spoiled every year.

The withering of the stalk tells that the tubers are fit for the harvest, and when the soil is dry the potatoes come from the ground clean and bright; if gathered in rainy weather much soil adheres, which injures both appearance and consequently the market value. We have noticed in London market that people, especially women, prefer a clean, bright looking potato.

In digging hilled potatoes a fork or potato hook is easier and faster than a hoe—a fork loosens up the dirt, yet leaves it behind when the potatoes are drawn out. In drills there is a uniform depth of planting, and as the potatoes will be found at about the same, a plow or potato digger can be used with advantage. Plow along each of the rows to loosen the dirt, then, with the plow set a little deeper than the seed bed, plow over the rows to throw them to the surface. All in sight can be picked up, and if any be covered a light harrowing will expose them. They should be gathered up and put under shade at once, for, as we said before, the light turns the surface green and renders the potato bitter and unwholesome. At the same time they must be spread where the air can circulate freely and dry them, lest moisture in the bin should induce rot. A cool shed, a barn floor, or a covering of straw, brush or boards, if the air has access to them, will any of them answer the purpose—but don't let a sharp frosty wind strike them. It often happens that a farmer carries his potatoes directly from the field to the cellar, and they winter through without harm, yet it is risking somewhat considering their liability to disease.

In storing potatoes there is a great loss in shrinkage from evaporation—from ten to twenty per cent. from the time of storing till the following spring, a larger waste than from any other crop, and hence taking it all around, farmers will make more to sell their potatoes in the fall than to keep them all winter. Because less evaporation takes place in pits than in cellars and bins, many prefer this method. If so, select a dry sloping space, or on well-drained land, where there will be no danger of standing water. Dig a shallow trench six or eight inches deep, four feet wide, and as the quantity to be protected demands. A furrow each side this trench is an additional safeguard against moisture. Ridge up the potatoes about as steep as the roof of a house; cover with straw sufficient to keep the fine earth from sifting through, and over this throw a thin layer of soil; leave an opening at the top every five feet and insert a stovepipe, or cover the opening with a slanting board to shed the rain. This will allow the heat to pass of rapidly. When

frost comes remove the ventilators and fill the openings with a wisp of hay or straw. When settled cold weather sets in, cover sufficiently with earth to prevent freezing. This trench could be portioned off with layers of straw and earth so that the potatoes could be opened up in sections as wanted without exposing the whole.

If potatoes are intended to be kept in a cellar, it should be dry and free from frost, capable of being made perfectly dark, and of being ventilated quickly and thoroughly. In such a cellar potatoes might lie on the floor in heaps without injury; but in the majority of cellars the floor is no place for them. Store rather in bins or barrels raised a foot or so from the floor. In bins board partitions may separate varieties, and there may be three or four rows of bins one above another. There is much less danger of rot in this arrangement, and a greater opportunity is given to pick them over in case of disease. However, temperature is one of the factors in keeping a potato. The germinating power of a potato is injured, if not destroyed, when exposed to a temperature below thirty degrees, and it commences to grow at a temperature above fifty degrees. Then a cellar that could be kept within this range, or better still from thirty-two to forty-five degrees, ought to furnish sound potatoes until spring, and that would sprout freely. A light sprinkling of lime upon potatoes when stored is a preventative against rot. Potato rot is a parasitic fungus, and the lime destroys the germ.

Sowing Wheat.

Active preparations should be made this month for putting in the wheat. We have invariably noticed that the plant that got a good start in the fall, stood the best chance to stand the attacks of a severe winter. Last year, owing to the continued drouth, the wheat, as a general thing, was put in late, and it got no root hold before winter. The best piece of wheat we have seen this harvest was sown the early part of September or late in August. It is well known now that wheat in Ontario will nothing like come up to the yields of the past four years, and although climatic influences affect to a certain extent the growth of the plant, yet proper cultivation and manuring have a great deal to do with determining whether a crop of wheat will be good or bad. As we have previously intimated, our farmers have gone too much into fall wheat, and, indeed, a number were making a specialty of it, and last fall acres and acres were thrown in on wheat and oat stubble in the most slipshod manner. In plenty of cases stubble land was merely gang-plowed once, the seed thrown in and harrowed down. How can farmers expect crops with this culture? To grow wheat successfully, the land should be thoroughly drained, manured and should be in good tilth. It is no use trying to grow wheat, no matter how rich the land may be, if it is but poorly drained. *Drainage* is the key note to successful fall wheat raising. Last winter, and during the present spring and summer, the land has been thoroughly soaked, and it is a wonder the wheat crop looks as well as it does. Where land is flat and low it would be advisable for our farmers to ridge up their fields in narrower lands than we see in general practice here. The furrows will also afford a surface drainage and protect the plant from being washed and frozen out. Besides these narrow lands, what a Yorkshireman calls "gripping" should be done, that is, running little surface ditches wherever the water is inclined to run. This could be best done when the fall rains set in. It may take a little trouble, but it will pay in the long run.

With regard to the prospects there are for wheat

growing in Ontario, we are strongly of the opinion that the fertile belts of virgin soil in the west and north-west can always discount this part of the country in wheat raising, and hence instead of our farmers going extensively into this cereal, it is advisable to relax their efforts in this direction, and instead of throwing in large fields of wheat, the way it was done last fall, put in a lesser proportion and do it well. Wheat is not the only thing a farmer should rely upon to make money; there is scarcely any crop but pays equally, and even better; and then, Why so much wheat? Wheat finally exhausts the soil, and we may say it becomes wheat sick. Nearly all the older States of the American Union and the first settled portions of Canada have gone through a series of spoliation from constant wheat growing, and the land has been left in a poverty-stricken condition.

That the productive power of our lands in this respect is being rapidly lessened is plainly evident, and it can be attributed to no other cause than the continuous growing of this cereal.

Government Drains.

In another part of the paper will be found an enquiry from a correspondent, "Whether there is in this Province a Government Drainage Fund, and if so, is it available to individual farmers or only to municipalities?" There appears to be a considerable misapprehension about this question of drainage, and we may say it arises from supposing that the Ontario Government has a special loan fund for tile drainage.

The original Drainage Act of 1878 provided for Municipal Drainage Works being executed by the Government, and that the amount expended should constitute a rent charge on the land improved. In 1878 a Bill was passed providing that the Council of any township municipality could borrow money on debentures for tile drainage from \$2,000 to \$10,000. This was extended to stone and timber drainage in 1879. Thus it will be seen that two methods of drainage have been in existence. Under the first the Government did the drainage and charged the municipalities benefited; under the second the Government lent the municipalities the money on twenty years' debentures bearing five per cent. interest. Hence in no case could private individuals borrow directly from the Government, but through their several municipalities. The sum that can be loaned to one person cannot exceed \$1,000, and not less than \$100 can be loaned, and on this the Councils impose a special rate of 88 on each \$100 loaned for the term of twenty years. Any person can avail himself of the Tile Drainage Act by making proper application to the municipality. Up to 1882 there was \$604,075 expended in Ontario.

Barn-yards.

The barn-yards in this country, without exception, are kept in a filthy condition. Take even farmers who are tidy and tasty in other respects about the farm, and the yard is totally neglected. In the fall of the year the barn surroundings are simply a mash of mud and slush, and locomotion is made at the expense of going in knee deep. For the female members of the family who have to do the milking, this state of things is intolerable, and we have no doubt serious diseases are contracted and their general health impaired. There is no wonder that young people take a dislike to farm life and think there is nothing worth living for in the country. Besides the disagreeable situation of people being forced to wade through sloughs three or four months of the year to attend their stock, the animals suffer from having to be continually

standing and walking in wet and slush. Cattle cannot thrive that are thus exposed; so in this economic point of view it would pay to have a clean, dry yard. To this end there needs proper drainage, and with this the water from the roof should be prevented from discharging in the barn-yard and run into reservoirs or tanks, and utilized to water stock in the yard instead of driving them a distance away in cold and stormy weather or during the burning sun of a hot summer's day. Another advantage occurring from a dry, well-drained yard, would be that of liquid manure, which on nearly all our farms goes to waste.

Manure tanks could be built at a slight outlay and would pay for themselves in the utilized liquid in one year. The best of the dung pile in this country is washed away into the surrounding sloughs and drains, and adds to the impurity of the water about the farm and renders it unhealthy for the animals that partake of it. In a sanitary point of view, a clean, well kept yard would add much to the comfort and health of the farmer's family; and when all these things are considered, it would certainly be desirable for our farmers to look to their barn-yards as soon as possible, or get them in order for the weather.

Bridges and Culverts.

The recent disastrous floods in Middlesex and adjacent counties, and the carrying away of nearly all the bridges and culverts, ought to demonstrate to the farming community the fallacy of the present system of bridge and culvert building. A few hundred dollars saved when the bridge is first built probably means a loss of thousands of dollars afterwards. In most cases to keep down the cost of the bridge, embankments are thrown out on either side of the river and the bridge sprung across. These embankments are probably high above the ordinary water mark, but when the water rises from heavy rains these embankments, if not carried away by the rushing waters, most effectually dam the river, and the consequence is that low lying lands are submerged and incalculable damage done, and the farmers at one fell swoop pay more by loss of crops than they would have to pay by years of taxation for the bridges to have been properly constructed. Now that our country is being drained, the rains which fall upon the land are run off and conveyed to the streams very rapidly, instead of remaining upon the land and going away gradually, as it did in years gone by, and it is no uncommon occurrence now-a-days to see in a well-farmed district small creeks after a heavy shower almost instantly become mighty torrents, and the culverts which formerly were large enough to allow the water to pass under the roadways, are now altogether insufficient for the purpose. More debris is brought down the streams, and the culverts are easily choked. The consequence is that the road-bed for many yards is carried away or badly damaged. All these things should make our farmers ponder, and open their eyes to the fact that the saving system that has been pursued in bridge and culvert building is false economy. The outlay of a few dollars extra at first would be many dollars saved in the end. The farmers who have to bear the brunt of the taxation must weary of continually paying for reconstruction. Again the question arises, Would it not be better to have fewer bridges and have them placed where really necessary, and have them properly constructed under the supervision of experienced engineers, instead of the members of Township Councils, who can not have had experience sufficient to enable them to control such important works? If competent engineers cannot be obtained in Canada, then by all means import them.

Threshing Time.

Threshing will be later this year owing to the backwardness of the season. To thresh the fall wheat early is a good plan; in the first place, it gives room for garnering the other grain. Taking the average of years, selling in the fall is the most advantageous. There are a great many risks to run in keeping wheat a length of time; and if a less price be got in the fall it is better than to keep it and run the risk of shrinkage, must and rot, if not kept in proper bins. Last year there was a great quantity of wheat spoiled by threshing early, and when the straw and grain were damp. The wheat was piled up in large quantities, and the dampness produced heat, and the grain mustered. There is more wheat spoiled every year before it gets to the millers' hands than people are aware of, and simply by keeping large mows of wheat without moving. Grain of any kind, when threshed early, should be continually on the move. When wheat is moved from the farmer's granary to the local buyer, and from there to the railway, and from that to the steamboat, &c., every handling improves its condition with regard to dryness. According to present advices the wheat crop on this continent will be over 84,000,000 bushels less than last year, and, consequently, prices may be expected to have an upward tendency.

Last year a number of farmers were burned out through the carelessness of threshers, and defective smoke-stacks on the steam engines, and it behooves our farmers to look carefully whether the engines that are used are properly supplied with efficient spark arresters, so as to run no risk of being burned out. The general run of smoke-stacks are blocked up with dampers and screens, and to get draught so as to do a good day's work, these dampers have to be opened so as to keep up steam. When the ground and all the surroundings are dry, there is a rush of sparks from the smoke-stacks which renders threshing extremely hazardous. On this account a number of farmers put off threshing until late in the fall, to avoid the danger of being burned out. There is no excuse for either manufacturers or threshers using unsafe and dangerous smoke-stacks, for there are sufficient safe and reliable smoke-stacks that give both draught, and at the same time arrest sparks, to make them a perfect safeguard against fire. Let every farmer see that threshers have a license from some reliable fire insurance company, and that he has a safe smoke-stack and arrester on his engine.

Hay Tedders.

A prominent farmer near this city has used one of these useful implements this season, and informs us that he would not be without one. It enabled him to get in his hay both quicker and in better condition than before he used one. As soon as the mower had gone a round or two, the tedder was started, and kept pace with the mower. The hay was dry and ready for cocking the same day, and was hauled the day following. We are sorry that none of these useful implements are manufactured in Canada, and hope that some of our manufacturers will turn their attention to making them. They would have proved almost invaluable to farmers during the past unfavorable season.

Mr. Shaw Wood, of London township, from experiments made last year in growing oats, gives the preference to Mole's Ennobled, Australian and Swiss oats. The latter were fully two weeks earlier than the other two varieties, but was more liable to rust. He found the Australian and Mole's Ennobled about equal in growth, vigor of stem, stood well, and were free from rust; but 90 kernels of the Australian weighed equal to 130 of the other varieties. He also states that his experiments showed the Russian and Australian to be the same oats.

Special Contributors.

A Chatty Stock Letter from the States.

[From our Chicago Correspondent.]

There has of late been uncommon activity in fine breeding cattle. Fine stock breeders are busy, and as a rule are making liberal profits out of their business. There probably has not been a time when there was such an active call for good breeding stock as at present. There is nothing of a "boom" in the trade; it is of a more stable character. There is simply a good healthy demand for good cattle, and it is very clear that people are not rushing into it headlong simply because "everybody" else is, or because of any undue newspaper notoriety, but it is all owing to the fact that people are satisfied, from experience, that it is the proper and most profitable thing for stock men to do.

Recently there arrived at Chicago, from quarantine at Baltimore, a herd of 230 fine breeding cattle, including five Polled Angus and 225 purely bred Herefords, undoubtedly the largest and finest importation that has ever been made of these cattle. The cattle belong to a party of Wyoming capitalists and breeders. When the herd arrived in quarantine there were 202 head, but many of the cows calved and materially swelled the already large herd. In the lot there were about 20 males; the others being females, ranging in age from suckling calves to old cows. Such a lot of thoroughbred breeding females has never before been sent to the plains. The stock is owned by gentlemen who will engage in breeding high grade bulls for the range. Heretofore there has been more or less of this done, but the breeding of thoroughbreds and grades has been done on breeding farms farther away from the free cattle ranges. Perhaps the stock will be more hardy for being bred in the same climate in which they are to do service.

Some very fine distillery-fed cattle were recently marketed at Chicago. They were half-blood Herefords, originally from the Wyoming ranch of Swan Brothers; in fact they were the first fruits of the bulls of that breed which they took out to the ranch some three or four years ago. The lot numbered 75 head, averaged 1,880 lbs., and sold at \$6.15 per cwt., which was at least 25 cents per hundred more than any other cattle sold for on the day of their arrival. They sold to Armour & Co., to dress at Chicago and be forwarded in refrigerator cars to a New York butcher who makes a specialty of handling the best grades of beef. The lot dressed sixty-four pounds per hundred, an extraordinary record, being about eight pounds above the average. The lot attracted much attention, and was inspected by numerous breeders of note, the most of whom came for the express purpose of seeing the first really large lot of Herefords that has been marketed. On the same day, and with the same lot, was a large shipment of ordinary range cattle that had been slop-fed the same length of time as the half-bloods, which averaged 1,309 lbs., and sold at \$5.75. A few practical lessons like that, showing in actual figures the value of improved blood, carry more weight than almost any amount of theorizing.

Slop-feeding cattle at distilleries is gaining in popularity every year, and has been done very extensively this year. It is rather remarkable how completely and in how short a time all prejudice against still fed cattle has been overcome. The time was, and it was no longer ago than three years, that such cattle would not sell within fifty cents to a dollar a hundred as much as could be realized for corn fed beeves of corresponding quality. It was argued that there was necessarily

more shrinkage to them, and also that the flesh of an animal that had been tied up during the fattening period could not be as healthy as that of the others. This last argument is hardly to be gain said even now, but the first is completely exploded, for it has been demonstrated time and again that stall fed cattle will dress right up to the others and occasionally do better. Some of Chicago's best beeves this year came off of slops.

Col. John D. Gillett, of Elkhart, Logan Co., Ill., is now making a business of disposing of his Shorthorn beeves before they are more than three years old. A few days ago he was at Chicago with 173 head, and Kenyon & Smith had in 150 head, making in all 323 high grade Shorthorns from the same locality, which were said to be the finest lot, considering numbers, that has been seen in the pens in many a day. They went to Baltimore, thence to England on owners' account.

Great changes are taking place in the cattle trade on account of the refrigerator business. Under the new regime, the trade is being less and less controlled in the east. Many seaboard butchers who formerly got their supplies from home slaughter houses, now receive all their meat in refrigerators from the west, after having been slaughtered about thirty-six hours. Of course any body knows that the meat is in vastly superior condition to what it would be if sent a thousand or more miles on foot. Dressed meat enterprises are springing into life in various quarters, and even Chicago, with the great prestige which she has gained in the trade, is certain to yield a good deal of her meat business to cities further west, and nearer the centre of the cattle growing fields, sooner or later. The nearer the slaughter houses are to the grazing grounds the better. Of course there can be no reasonable doubt that Chicago will long and perhaps always maintain her position as the chief distributing centre, because of her unequalled facilities for utilizing every particle of offal, which cannot be done in the far west. Recently there has been a large dressed meat enterprise put on foot in Texas. It is located at Victoria, and several others are projected for that State.

Mutton raising is something that is sadly in need of more attention on this continent. Only last week there was an order for eight hundred export sheep on the Chicago market, which could not be filled because of the poor quality of the offerings. There are sheep enough and too many, such as they are. There is no shortage of numbers, but of quality. The trouble has been that what little attention the great majority of the sheep have received has been on the score of wool, and no attention whatever has been paid to the mutton qualities. In time flock-masters will learn that good feeding of sheep will do more than keep their carcasses in marketable condition; that it also greatly increases the quality and quantity of wool, besides keeping the animals in the best condition to resist and throw off diseases. Give us better mutton and more wool. Nobody, except very wealthy men, can afford in these days of competition to breed from scrub sires. The ram, like the bull, is more than half the herd. If a ram did not produce any more lambs than a ewe, then it might pay to refrain from using expensive animals of good breeding; but it does not take long to figure up the importance of good blood when it is considered what a vast number of lambs a ram will get in a lifetime.

The crop of range cattle from Texas and the Northwestern regions will be larger this year than last, and as the shipping season is opening much later, there is a strong probability that there will be unprecedented supplies crowded on to the market this fall. It is predicted that 50,000 cattle in a week will not be very uncommon. The largest number that Chicago has ever received was 42,000 in a week. A much lower range of prices than was current last year is inevitable if present prognostications hold anywhere near good.

The winter Fat Stock Shows bid fair to have much larger numbers of entries than last year. Some remarkably work at fattening is being done by the Shorthorn men, and they will make a grand display. The Polls will come out in some force, and the Herefords will make a better fight than they have ever done before.

On the Wing.

After writing to the leading seedsmen and enterprising agriculturists to ascertain the state of the winter wheat, we thought it best to take a trip for personal inspection and enquiry, to enable us to form an opinion as to which varieties of wheat to recommend. We visited some of the farms in Middlesex county, among which we found on one farm quite a number of new varieties of wheat being tested. The Martin Amber, a new wheat introduced from Pennsylvania, appears more promising than any other of the new varieties, a cut and description of which appear on the next page. The Mediterranean Hybrid, crossed from the Diehl and Mediterranean varieties, —spoken of very highly across the lines—appears to have stood the winter well, and deserves further trial. Several European varieties are being tested, one of which appears very promising; several appear to be failures. The Rogers wheat requires further trial before we can commend it for a general crop. It is a bald, white chaff, red wheat: many speak highly of it; it is not as early as the Michigan Amber. The Scott and Democrat are both looking very well. The three last varieties appear, from the tests seen here, to be as safe wheats as any to sow; in this vicinity the Clawson wheat has been superceded by these three varieties. Few fields of Fultz are to be seen.

We went to the Government Farm at Guelph. Mr. Mills, the Principal, very courteously gave us information regarding the College, its internal management and arrangements; but for information about the farm we are passed on to the outside or farm managers. The Professor of Chemistry was full of information about minerals and reports of other Professors, and had his mind on the co-operative action of different fertilizers. We at length reached the testing plot, under the management of Mr. Shuttleworth, who has the plot clean and free from Canada thistles, and the different varieties clearly labelled. *It is very evident the remarks we made last year about the thistles have had a most beneficial effect on the appearance of the farm this year.* Those who are opposed to fair, honest criticism, should not read this journal. This time the plot is free from Canada thistles; it is also free from the information we were in quest of, namely, What is the best kind of winter wheat to sow? We put the above question to the Government Farm manager. The response was: *The Clawson (formerly called by the officials the Seneca—now corrected).* We went to examine the varieties, and failed to see the kinds we were in quest of information about, namely, the Soules, Victor, Gold Medal, No. 9, all of which have been "Royal" wheats, but we did not see any of them now growing on the test farm. Some of the new varieties we hear of from other sources we did not find, but the Fultz, Fluke and Finlay wheats were allowed good space. *We see no reason for changing our view that they are all the same or one variety of wheat under different names.* The Fultz is the earliest maturing wheat, and will be ready to cut before any other; the heads are short. In viewing the different varieties, the most promising appear to be the Clawson, Egyptian and the Democrat. The Rogers and White Mountain, two varieties of late introduction, appear to be doing fairly well. The Diehl was very inferior to either of the before-mentioned varieties. They have one variety in the test plot with its name plainly labelled *Rust proof*. The name might sell it to the unwary, but every variety had more or less rust on it, and the rust-proof wheat had about as much as the average on the other varieties.

We left the Government Farm and called at Galt. Mr. John Blain kindly gave us a drive through the

country among the farms and farmers. We found the Clawson had lost the prestige it once had. The White Mountain has been preferred by many; the Egyptian or Michigan Amber are also well liked. The Democrat is not generally raised, but has a good report from those who have it, and we believe will increase in this country. One of the best pieces of wheat we saw in the locality was a field of Scott wheat. The beautiful-looking White Diehl wheat, which has carried off so much of the cash from our Provincial Exhibitions as the best white wheat, is so little thought of by our practical farmers that we did not see a single field of it growing in our journeyings through the country. There are some pieces no doubt growing on high sloping land that will produce a fine looking kernel, and may still gain prizes that ought to be awarded to wheats having greater merit. The red wheats are in demand by the farmers more than the white wheats. They are more to be depended on to yield profit. At the present time it is considered that the Clawson is degenerating, and has seen its best days in this locality.

We left this vicinity and make another inspection at Woodstock. Here we found that a wheat called Walker's Reliable has quite a run and is well liked, but the same wheat is known in other localities as the Michigan Amber or Egyptian.

The Mediterranean still holds a good name, and has kept it as long as any wheat. We deem the wheats mentioned are the best and safest known varieties of winter wheat. We must not place too much stress on either, as some succeed better than others, depending on soil and location. From these we would advise you to select for your main crop for your fall seeding. The Michigan Amber enjoys the greatest popularity. We find some of our American and Canadian seedsmen are introducing new varieties. Some of them are very highly spoken of, and recommended by good farmers, and are offered at very high prices. We advise you to act very cautiously in investing your money too hastily in any new seed, plant or implement before it has been fairly tested or examined by yourself. Fifteen dollars per bushel is asked for wheat by some of our American seedsmen. It is right for you to be posted in all seeds, and as our wheats run out, we must look for new changes and new varieties. It is no loss on the whole if you expend a little money each year in procuring a small quantity of any really new variety that bids fair to be more productive. A few ounces, or a pound, is ample to test it. We give you a brief account on the next page of some of the latest varieties, but we have not as yet sufficient knowledge about them to commend them for a crop. They may be the coming wheats, and it is but right that you should know what is being introduced.

FRUIT.

When walking through the garden of the Experimental Farm at Guelph last month, we noticed the black knot badly affecting the best class of cultivated cherries. It has been destroying the Mazzard or common pie cherry trees through a large section of country. We do not know if experiments are being made to find a preventative or cure. We know of none better than the immediate cutting away of the parts affected, but this does not appear to be of any avail if other trees in the neighborhood are permitted to remain and propagate the disease which threatens the total destruction of our cherry trees. Who will be the first to find out an efficient remedy? The pear blight is still on its march of destruction, which is much to be regretted; we are sorry to see the fine pear trees

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dying so rapidly. We are unable to give you any reliable cure. The Aphis is leaving its desolating mark on every apple orchard we have visited; the light, sickly appearance of the leaves shows that the trees are sick. Limbs and branches are dying, and our orchards have not the healthy appearance they formerly had. Where are the luxuriant green leaves we used to see a few years ago? As to our grapes, one successful fruit grower informs us that he has tried every grape and every fruit that has been put out by our horticultural societies, and he has wasted much time and space in propagating them; but there is not one of them equal to the old varieties. The Clinton, Hartford Prolific and Delaware appear to be the most reliable varieties for the farmer to propagate. The other varieties die back, are shy bearers, mildew, and are a disappointment.

These remarks are rather discouraging, we must admit; but there has been and still is a fault that we are all apt to fall into, that is, of pointing out the good qualities of every novelty, and not examining into the defects close enough.

If any of you have a crop of good apples in any section of the country, particularly of the winter varieties, you will be able to obtain a good price for them. We know of two buyers in this city that are ready to contract at good prices at the present time.

New Varieties of Wheat.

Every year there are new kinds of wheat being brought before the public for their acceptance. Although we do not believe in a great number of the varieties, yet it is well that experiments should be made in producing the most improved kinds of grain. That old varieties can be improved by selection and change of climate and soil, is evident. But in reality there are only two kinds, red and white. We now present our readers with a number of new kinds which are seeking public favor.

The Martin Amber, which our engraving represents, originated in the eastern part of Pennsylvania in 1878. "Its habit of growth in several respects is," according to the originator, "different from any other kind cultivated. While young the plant lies spread over the ground, affording a good protection to its own roots. It remains in this position until May, when it begins to tiller out and grows very rapidly. It is claimed that it surpasses by far every other kind in the number of stalks from one grain by ordinary cultivation. The straw is of average length, very bright, and stands erect, until ripe, when the heads incline somewhat; and although stiff enough to support the large heads, is free from that brittleness which characterizes some wheat on becoming ripe. The grains are of a beautiful amber color with a thin hull. Expert millers pronounce it first-class, for, by reason of its very thin hull, it makes very little bran, but yields a large return of flour of the best quality. The yield, by ordinary cultivation, is from 35 to 45 bushels to the acre. Threshes very easily and perfectly, and weighs 63 pounds to the measured bushel. It has never been tested as a spring wheat, but we have very good reason for believing that it will do very well in sections where spring wheat is grown."

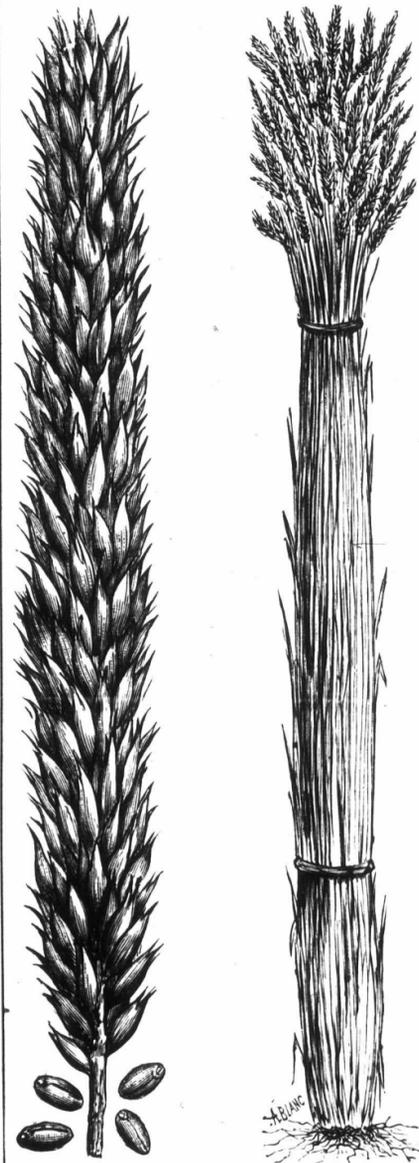
The samples which we have received are very good, and this new variety deserves a careful trial by our farmers.

The Mediterranean Hybrid is a cross between the Diehl and the Red Mediterranean. Sibley & Co., the growers of this variety, maintain that its heads are broad, of medium length, full of plump, heavy, red grains; blue straw, stiff, and of medium height, and consider it of the most important additions to the list of winter wheats which have been made in many years. They state that it has produced about 40 bushels to the acre by ordinary cultivation. It has the compact head of the Diehl, and the head and blue straw of the Mediterranean, and is very hardy. Some sample heads of this variety have been shown us, but do not commend themselves to our favorable judgment.

The Russian Red is another competitor for public favor; as its name denotes, it is of the red kind, and is a bald wheat. One seedsman in the U. S. states he has grown as high as 60 bushels to the acre, and also claims that it is midge proof. J. H. Zavitz, an enterprising farmer in Lobo township, speaks very highly of this variety, has

grown a good crop from it, and claims that it will weigh 69 lbs. to the bushel. The seed of this is said to have been procured at the Centennial Exhibition, in 1876.

The Rogers is another variety. The heads are of unusual length, with something like the appearance of the Clawson, but the kernels are more compactly stored. This wheat is a winter variety and originated in the eastern part of Pennsylvania. It has been grown for three years with the Fultz and Clawson, and has yielded much better than those kinds. It is a bald, white-chaffed wheat; has straw as stiff and much softer than Fultz. The yield from a five acre field this year



THE MARTIN AMBER.

on black loam, with clover sod and 100 pounds of phosphate, was 47 bushels per acre. On a fourteen acre field of light, sandy loam, without fertilizer, was 40 bushels to the acre.

The White Mountain, another new kind, is a beardless white chaff variety of fall wheat, with large white grains. It is claimed for hardness it has no equal; and as for productiveness, it is asserted 100 bushels have been raised from four bushels sowing. A considerable quantity was grown last year about Guelph. We have not ascertained what the yield is yet and how it has turned out this season, but hope to give a further brief report in Sept. issue on this and the Rogers wheat.

The Lancaster or Red Mediterranean, the bearded or improved Diehl, and Michigan Bronze, are under test, and sufficient reports are not yet to hand on which to pass even a superficial opinion.

35 Dead Lambs.

We have heard from good authority that 35 lambs died recently on the Ontario Experimental Farm at Guelph; that they were in good order, even fit for the butcher, and were of different breeds. A skilled veterinary was called in, *post mortem* examinations made, and the verdict given was death by Tape-worm. We claim that the farmers should be immediately posted in any such case as this, and the cause and remedy given, if any is known; if not, let the question be asked publicly. Perhaps some of our farmers may aid us in giving the information. Thirty-five lambs are more than 25 per cent. of the lambs raised on the farm. We have had considerable experience with lambs for near 50 years, both in Canada and England, and never heard of anything like this—25 per cent. of the lamb crop lost when fit for the butcher, from the effect of Tape-worm! In what way has the disease been contracted to such an extent? Has this been caused by the food, and of what kind? Has it been imported? If so, whence? Is it likely to be spread by breeding stock from the farm? Should the Government Farm be placed under quarantine, or the stock be destroyed? Are sheep more liable to contract this disease than they formerly were? We would be pleased to have correct information in regard to this subject, but we wish the information in language the farmers can understand, and given in short space, so that it will not weary them to read it or crowd out better matter. We beg to call the attention of the authorities to this matter.

Wool or Mutton.

We condense the following from a contemporary: "It may be that wool can still be grown profitably, even on lands near the great cities. It must be admitted that more land is cultivated than is well tilled. Would it not be better to let more land lie in pasture for sheep, even under the present prospects, than to wear out men, teams and implements in scratching over eighty acres to get a forty acre crop? The production of mutton has received comparatively little attention from farmers, and the growing of lambs for the early spring market has not yet become a large industry near the large towns. Yet large, thrifty lambs sell well in March, April and May every year. There is no apparent reason for thinking they will not continue for years to do so, for the demand grows even more rapidly than does the supply. This is a branch of farming in which those at a distance could not compete with the farmer within a few hours' ride from town, because young lambs are too soft and tender to bear shipment any considerable distance. They soon shrink in weight, and their flesh quickly becomes dark, soft and unattractive when dressed, after a long ride in the cars. The question suggests itself, Could not the raising of mutton, and of early lambs especially, be made a profitable branch of farming, leaving the price of wool out of the question, by those living within a few hours' travel from any large city? In March and early April thrifty lambs sell at a price which is surely great enough to pay all expenses and leave something more than the manure for profit."

It is common to cut grain as low down as possible. Sometimes this is necessary to gather it all when felled by rains, but otherwise there is no advantage in low cutting. A long stubble is often an efficient protection for young clover in winter. It holds the snow, which would otherwise blow away.

This is the month for potting strawberry plants. Grown thus this month they will yield nearly as much next season as last spring set plants—that is if transplanted next month with all the earth that is in pots or boxes. Take two and one-half inch pots, or small boxes or berry baskets, or even inverted sods, and sink them in earth near the old plants and in their places the small plants, binding them to their places by small staves or a little earth; bring pots filled with heavy, rich soil; when large and well rooted, and ready to transplant, soak well with water, knock out of pots or boxes and transplant where wanted for fruiting.

Drying and Evaporating Fruits.

The drying of small fruits, apples, &c., is of the greatest importance to our farmers. Fruit should form a considerable part of a farmer's diet. Besides, the growing of fruits of all sorts, and especially the small kinds, is becoming a paramount industry in Ontario; and in no department of agricultural economy do we find so much loss as in the fruit that wastes under the trees and passes unnoticed. Yet in the case of apples or peaches, properly dried or evaporated, they are worth in the market to-day respectively fifteen to twenty-five cents per pound. The same carelessness or extravagance on the part of a farmer, if it related to corn or wheat, would subject him to unpleasant criticisms over the entire neighborhood; yet the actual loss would in present markets be only two and three cents a pound. It should be remembered that we have the markets of the world offering a profitable margin over the cost of production for all our fruits and berries at advanced prices. It has always been a wonder to me why our people have not gone more fully into evaporating or drying fruit, and we may say, vegetables. An active young man with a little capital invested in cultivating say five acres of sweet corn, planted at intervals, and evaporate it, can in a few months make a year's earnings at most other employments; and if followed up as a business, developing a home market for his product, will find in this suggestion a very satisfactory and profitable business. But infinitely more may be claimed for the making of slashed apples from early windfalls, to be had in the apple-growing sections for the picking, or a trifling cost. The term slashed apples simply means cutting up the fruit in slices and drying or evaporating. But I may here say, between drying and evaporating fruit there is no comparison. Evaporating is the method, and is demonstrated in nature's laboratory in the curing of the raisin, and fig, and date, which are dried in their natural skins in a tropical climate during the rainless season, by natural dry hot air, in the sun. The fact is, our farmers' wives, sons and daughters have been exchanging the product of Canadian orchards, with their labor added, at a discount of fifty to four hundred per cent. below the product of the less intelligent colored labor of Asia and Africa. Fruits that are grown in Canada are just as delicious, just as nutritious, as those of "Ormus or of Ind," if properly cured. But look at the village store, or in our cities and towns—our farmers' wives would trade off two or three pounds of dried apples for one pound of figs, currants, raisins, or prunes. Our domestic fruits are superior to those that we import in the way of raisins, &c., &c. That our domestic fruits in themselves are superior to those of Asia, Africa, Spain and Portugal, Italy and the Mediterranean islands, needs no further argument than a comparison of daily quotations between evaporated fruits and those produced in these countries. Every pound of evaporated apples offered has a value in Canadian and American markets equal to about two pounds of tropical dried fruits, while evaporated peaches readily command from three to four pounds of their currants, figs, dates, raisins, or prunes. This evaporating had better be more definitely explained: it simply means subjecting fruits at once to *dry*, hot currents of air, by drying the surface quickly, which prevents discoloration, forms an artificial skin, and seals the cells containing acid and starch, which yield fruit sugar,

and then *keep it dry until finished*. The hot steam or vapor is discharged at once. (I am speaking now of regular evaporators, which may be obtained of any respectable dealer.) Though a crude and slow process, the development of grape sugar is almost perfect. Water in fruit is water, and the medium of decay, and to expose the cut surface to steam or vapor retards evaporation and induces acetous fermentation and subsequent loss of sugar. This must be further explained. The majority of people suppose that raisins, dates and currants are cured or preserved by the addition of sugar. This is a mistake, for by the principle of dry air in a tropical climate, an artificial skin is formed, and the process of developing fruit sugar is carried on. There is sufficient sugar in all our fruits to preserve them if evaporation is not allowed to continually take place, and they are immediately dried by currents of dry heated air, as by evaporators now in use. These are designed to convert into the most valuable condition strawberries, raspberries, gooseberries, currants, grapes, apples, peaches, pears, plums, &c. The old paring bee style of drying apples, and the exposure of small fruits to the common temperature of the sun for a number of days, I need hardly say is not a scientific way of preservation in a climate like Canada, and hence it would be useless to recommend any particular procedure. Evaporators are to the old drying method what the sickle is to the self-binding harvester, or the old skim milk cheese compared to a rich Stilton. I would not recommend any particular method outside of a scientifically constructed evaporator; indeed there is no method or trick in *drying* fruit any more than putting out to the sun, or placing them in an oven, and this makes only a poor class of fruit. The table below, cut from an American paper, will show the relative value and profits of fresh and evaporated fruit in the United States markets, and certainly it shows a big margin of profits.

There can be a great deal said on this drying or evaporating question, and it may be stated that whichever process be resorted to, the free use of sulphur fumes has a beneficial effect in preserving the fruit.

A lady writer in an exchange says:—"In the fall of 1880 I visited a large fruit evaporator near us, and saw the lovely cream-white rings as they came from the wire cloth frame packed in huge boxes ready to ship. They looked good enough for Victoria's table. I went home, having ascertained that the cream color was the effect of bleaching in the fumes of sulphur, procured a machine that pared, cored and sliced the apple into a spiral ring at one operation, and then set the baskets filled with the rings in an ordinary packing box over the fumes of sulphur to bleach. The sulphur was thrown on a few live coals in an ashpan, one teaspoonful at a time, and the box was closed about fifteen minutes. This bleached several baskets of rings almost as white as a sheet of paper. The apples were then spread and dried in the ordinary way, and they retained their beautiful creamy color when dry. Then were then packed in paper bags and put away. When cooked in the spring they were entirely free from any smell or taste of sulphur, and as fresh and pulpy as green apples. No one that has ever tried them recognized them as dried apples. Two or three small sacks were left over until this year, without any further care. On opening them this spring of 1882 they were as fresh, apparently, as when first put up. The worms had not molested them. Housekeepers will appreciate this, as much fruit is lost every year from these pests. Those living in the country who are drying sweet corn, apples, berries, &c., will find their fruit much improved and made absolutely worm-proof by a few minutes' bleaching over sulphur fumes."

Our Scotch Letter.

[FROM OUR OWN CORRESPONDENT.]

A very great and welcome change has taken place in the weather in Scotland since I wrote last. Much needed showers have fallen copiously, and they have been general in every part of the country. Rain commenced on Sunday afternoon, and from that time till Tuesday evening the sky was wholly overcast, in almost all districts, and the rainfall was heavy. The wind was at first from the east, and the rain consequently was very cold, but on Tuesday it veered round to the west, and since that time the temperature has been very much higher. The sun shone out brightly on Wednesday, and Thursday was one of the warmest days this season. The effect of the rain and the change of wind combined has already been marvellous. In the Lothians and in those parts of Perthshire where the turnips had never branched they are already visible, and promise well; and the grass has quite another look from the withered and bare aspect which it had till the rain came. I went over a large portion of the Midland and Western Counties of Scotland on Wednesday, and I have seldom seen the fields look better at this season. Wheat almost everywhere looks well, and if there is a fair amount of sunshine till the autumn, it should be a grand crop. In the heavy clay soils its appearance suggests vigor, and though there are some places where the drought has told upon it, it is rapidly recovering now under the influence of the genial showers. Potatoes also promise well everywhere. In the west of Scotland, where there are many farms which send off the whole potato crop to market as early as the beginning of August, it has seldom looked better, and if the rains take off now it will be a very fine yield. Growers of potatoes have remarked that the disease, when it appears early in the summer, generally shows itself first in rainy weather, and after a thunderstorm, and as thunderstorms have been frequent with the rains during the last few days, there is no doubt that some growers may be anxious about their crop, but as yet the grounds for anxiety are not very grave, as, though the rain has been abundant, it has by no means saturated everything. Some farmers are now disposed to modify their estimate of the lightness of the hay crop. There is no doubt that, as compared with the hay of recent years, it is very light, but it is perhaps scarcely correct to speak of it in general as the lightest crop of this generation. Even in the Carse of Gowrie, where it is on the average very light this season, there are some fields which bulk very well, and if only there is fair weather during the haymaking time it will not be an unprofitable crop. There is a good deal of anxiety among feeders of cattle as to the present state and prospects of the market. The price of lean cattle has of late been very high, and fat stock, though dear, has not at all risen in proportion, so that the return from recent markets has come to be rather small for the feeder; and at some recent markets there has been something like a dead lock, and great numbers of lean cattle have remained unsold. The more favorable prospects of the grass through the recent rains will doubtless be advantageous to the graziers, and will give them more confidence in buying, but there are indications, not a few, that extreme caution will be necessary on the part of the buyers of lean stock for some time to come. It has been forced up in price above that point where much profit is possible at the present rates for cattle, and if a reaction in prices should set in, it will add another to the many troubles of the time for the struggling farmer. Farmers are now looking very anxiously for signs of dry weather, for the sake of their hay, but as I write the appearances are not very favorable. To-day (Friday) the clouds are overcharged with moisture, the mean temperature is high, and the probability is that copious showers are again at hand. More sunshine and clearer skies would now be very welcome.

Aberdeen, July 6, 1883.

Quantities.	Varieties.	Average value fresh.	Yields in lbs. of evaporated stock.	Worth per lb. evaporated.	Cost of conversion, labor, and fuel.	Profit in given quantity.
1 bushel, .	Apples,	\$0 15	6,	10@ 15	\$0 10	\$0 35@ 65
1 bushel, .	Peaches, 2d gr.,	25	7, unpared, .	10@ 15	15	30@ 65
1 bushel, .	Peaches, 1st gr.,	75	6, pared, . .	25@ 30	25	50@ 84
100 ears, .	Sweet corn, . . .	40	10,	10@ 15	30	30@ 80
100 quarts,	Blackberries, . .	2 50	35,	10@ 12	40	60@ 1 35
100 quarts,	Whortleberries, .	4 00	25,	15@ 18	35	90@ 1 95
100 quarts,	Raspberries, . . .	6 00	30,	30@ 35	30	2 70@ 4 20
100 quarts,	Cherries,	3 00	25, pitted, . .	18@ 22	50	1 00@ 2 00

The Dairy.

Water for Dairies.

BY JOHN GOULD.

It is a source of wonder to many that men who have conducted dairying for years know so very little about the cause and effects that influence their business, and in fact go on year after year in the one groove, and that often one furrowed out by their grandfather. There is one thing that dairymen as a class are very unmindful of, and that is the water supply of the farm, and farmers in supplying their stock, often, it would seem, imagine that a cow resembles a camel—in only requiring water about once a week.

When one considers that the best milk is nearly nine-tenths water, its importance then becomes apparent, and what is quite as imperative is that it should be pure, and adapted to the wants of the system without any filtering process needed to make it healthful. The cow is not an ambitious animal, and therefore requires that the water be brought very near to her; and in large pastures the one drinking place is not enough, but several are required, for when deprived of water for some hours, either from distance or being outside the trail—for dairy cows range the pasture by a sort of swinging-round-the-circle plan—they, upon approaching the water, rush in and gorge themselves to the utmost, and the discomfort that follows has its deplorable effect.

It is true that all farms are not naturally watered as one would wish, but it is true that labor, or small expense, will do quite as well where nature failed to place where men afterward desired. On the Western Reserve of Ohio the water supply is in the main abundant, and yet this summer hundreds of wells are going down, and wind-mills being erected to make the supply abundant and better distribute it for the convenience of the dairy. And it is from these rock wells that a supply, both unfailing and uncontaminated, comes.

The day has not wholly passed when large dairies during the summer draw their supply from some shallow clay pond, in which the stock, in their efforts to rid themselves of flies, plunge, and by standing, aided by their excrements, soon poach into a mass of pollution, called water, for lack of anything better, and even then dairymen often complain that their cows are shrinking badly and falling off in flesh. The feed is good, but that the two losses were caused by bad water has never occurred to them.

It is now a recognized fact that there is not a perfect assimilation of the food and drink that a cow takes in the way of nutriment—in other words nature does not fully change the character by digestion of all the elements that go to make up her food, and so it is possible to find traces of the food consumed in the milk unchanged. Especially is this true in the case of cows obliged to drink filthy water, or eat improper food; for, as has been shown, "non-volatile foods may in part be appropriated without essential change by the milk;" also we find in the case of filthy water, filled with disease germs, that they are not decomposed, but pass into the milk, and thence into the butter and cheese, and then establish a disorder that first causes a disarrangement of the curing process, and ends in hastening decay, a fact that a great cheese manufacturing firm in Ohio established in the case of patrons feeding the refuse of the glucose factories at Buffalo.

The ordinarily constructed pond, where springs are absent, is faulty unless very large and very deep, so as to prevent drying out and stock standing in its every part. Scarcely a farm is so level but that higher ground could be selected on which

to construct this pond, and if a discharge pipe were put into it and run to some distance and then discharged into a long drinking box, the purity of the water would be maintained, and the stock quite as well favored with drink. By this means the pond is fenced in to protect it. If the pond is quite large and deep, a rough calculation might be made of its capacity, and a hydraulic ram put in; the supply of water being thus calculated and an abundant supply forced to the barn-yard. Such an arrangement near me amply provides for 40 cows and other stock the year round, and the total expense of making the dam and the apparatus was not to exceed \$75, and it has been in use nearly fifteen years, without expenses. If the pond could be made on higher ground than the barn, the ram would be unnecessary, the expense being simply for galvanized iron pipe and labor.

If the pasture is a large one, two or three places should be constructed for the cattle to obtain drink. The same plan if spring brooks are not present, of a small fenced pond, with drinking trough below; its feed pipe so regulated as to run six or eight barrels per day, and would furnish the required amount of water through the season, for it is probable that rains would replenish the reservoir before it had been drawn off. If a pasture has a stream of running water, so that contamination is not possible, I am greatly in favor of "splashing pools" in shady nooks, and if none were found in the stream, I would dredge out a few, for the cow in hot weather exhibits a trace of the proof that Darwin was right about the first life on the earth being aquatic, though it does not satisfactorily prove how all the water gets into the milk.

The rock well, with its wind engine, costing not far from \$200, best solves the water supply, for it never gets low, is never foul, is always pure, and never carries in its current the germs of disease, or a suspicion of decaying elements, to the butter and cheese. Drink is fully as important to the dairy as food; for the perfect assimilation of the latter depends upon it, and the employment of reasonable expense to procure pure, good, and abundant water for the dairy, should be put in force at once by every progressive dairyman.

Dogs on Dairy Farms.

It is rather difficult to discover any profitable use for dogs upon dairy farms. A dairy farmer kept a dog for driving his cows to the pasture and bringing them home from the field, and never tired of praising the sagacity and usefulness of his dog. "A hundred dollars would not buy the dog," he was wont to say, "I could not get along without him. He saves a lot of running." But one day this useful dog came up missing. Perhaps he fell a victim to some chance lead aimed at a nightly marauder among a neighboring flock. No one knows. Bose disappeared suddenly, and the grumbling farmer drove the cows to the pasture and brought them home. And very soon he was astonished beyond measure to note the greatly increased flow of milk, and his wife remarked casually, soon after, "I don't know what's come over the cows, but I am getting near twice the butter I used to; what are you giving them? And we don't have any bad milk, and the heifer that used to give bloody milk so often, is quite well now. I do believe it's because we've no dog. I always told you he drove the cows too much, and you used to say, 'Oh, women don't know anything.'" "Perhaps you are right," said the husband; I notice the cows are doing better and we have no hard bags or sore teats any more. And, after all, it's no great job to go down with the cows, and indeed I have them trained now to come down to the gate, when I call, for the handful of salt I give them. Poor 'Bose' did as well as he knew how, and was always willing and ready; but I begin to think driving cows with a dog won't pay for the time saved, by a good deal."

This experience is by no means singular, and although a dog wins upon our good nature by his kind, affectionate, and faithful ways, yet, as a matter of business, it does not pay to keep one on a dairy farm, unless he is securely chained up out of sight of the cows, and then the profit is so small as to be invisible.—[Dairy.

Dairymaid Competition.

On the last day of the show of the Royal Agricultural Society of Ireland, perhaps the most interesting and instructive feature in it took place—viz., the butter making contest, in which seven entries were made. And it was a pleasure to see such a large number of elegant girls, many of them highly educated and accomplished, whose parents were large occupiers of land, thinking it not beneath themselves in the slightest degree to compete thus publicly for the prizes offered for what has been, until lately, a much neglected part of Irish agriculture—viz., butter making. Equal quantities of cream having been weighed to each competitor, on a signal from the steward, whose arrangements for the competition were as perfect as possible, a capital start was made. No. 7 had her butter ready for working in thirty minutes, followed very shortly by the others. The butter of each competitor, as taken from the Holstein butter worker, was carefully weighed in the lump, and again weighed when made up in one pound rolls; but so carefully had the working been done that it was found only the 120th part was lost in this operation. The butter was found to be of very fine quality, the texture, flavor, and color, being excellent. These gratifying results are doubtless due to the instruction the competitors had received in the Munster Dairy School, the manager of which took a lively interest in the success of his pupils. Only two prizes were offered in the catalogue; but so keen was the competition that a number of gentlemen placed five other prizes at the disposal of the judge. This example might be profitably followed by our Agricultural Societies.

Very hot water is undoubtedly the best final manner of cleansing milk utensils. When a person recommends galvanized ware as fit for milk, he makes a mistake, because milk utensils cannot help but be exposed to acid, and as galvanized ware is coated with zinc, and zinc is very easily corroded by acid, and is then strongly poisonous, such ware is dangerous. Tin, of the heaviest plate, is the best. In our dairy a set of block tin pans, which have been in use for two generations, are to-day in perfectly good order, and have been the cheapest utensils that could be procured. Heavy tin plate is by all means the best material. The first cleansing should be by cold water, which removes all the soft sour milk, while hot water will harden it, and cause it to adhere in every seam and leave a little leaven to spoil the next milk. Then hot water should be used, and a stiff, round-headed bristle brush will be found to be the best thing to scour the pails and pans with, when the water is so hot—as it should always be—that the hand cannot be borne in it. A final rinsing with cold water then completes the washing. A good airing in the shade comes after all.

The novice who will believe he can take a scrub cow, and, by feeding her, make her equal to a good Jersey or Ayrshire cow, must be sought for in a lunatic asylum. And yet, in spite of what a professor may say about it, it is quite certain that a common native cow that has been fed on poor grass and gives 3 lb. of butter a week, may be made to double her yield by as good feeding as is given to the pure bred cows that are so much talked of. There are thousands of common farmers' cows, that give five or six quarts of milk a day and half a pound of butter, that can be brought up to ten quarts and a pound of butter by good pasture and four or five quarts of good feed. It is a novice, indeed, who can be induced to believe that Jersey cows give 10 lb. to 20 lb. of butter a week on pasture alone. This prevalent idea, that breed makes butter and feeding goes for nothing, is a delusion. Any Jersey cows will prove the contrary in two months feeding.—[Exchange.

What shall be done with the old cows? Years ago the farmers used to feed up an old cow, and fatten her on turnips and corn meal, and the beef we used to get in those days was as much better than what we buy from the butcher now as "gilt-edge" is better than lard. No cow should be kept in a dairy after she's seven or eight years old, unless she is a good one, and her calves are good too. At that age a cow is just past her prime, and there are fools enough who will pay a good price for such cows rather than rear their own. And a farmer may turn off some excellent beef from a good Ayrshire, Dutch, Devon, or Durham grade, or any fair kind of a native cow, when she is retired from dairy work at eight years old.

The Farm.

The Quebec Farm School.

Whitfield is the name given to a new post office established on the Whitfield Farm. This farm consists of about 800 acres, half of which is lying on the side of the Rougemont mountain, some 1,200 feet high, having a stepping ascent and partially level plateaus that are arable, although stony, the greater part being best adapted to grazing. The soil on the mountain side is porous and of a light quality. The other half of the farm consists of rich bottom land, lying in a large fertile valley below the mountain. This large valley runs about 100 miles in length, and varies in width from about 8 to 20 miles, having mountains of greater or less height along each side of it. It is a beautiful, rich, picturesque valley—in fact, the view from the top of Rougemont, and even from the house about one-third the way up the hill, is one of the finest landscapes we have ever seen. The magnificent scenery alone will recompense an admirer of the beautiful and grand to visit this

pense to procure the best animals that could be purchased in England. The Quebec Government now grants a subsidy of \$6,000 per annum for the benefit of the students, the officers of the institution, and maintenance of stock. It is now the Government Model Farm of Quebec, although owned by Mr. Whitfield. There are other Government Farms in Quebec, but of very slight importance in comparison to this. Mr. Whitfield is endeavoring to procure the best superintendents in each department. Mr. E. A. Barnard, Director of Agriculture, and the former editor of the Government Journal of Agriculture, is now the General Manager. Mr. J. Watson is the General Stock Manager. This gentleman has a calm, quiet demeanor, and is very widely and favorably known on this continent and in Europe. He has acted as cattle exhibitor or judge from the Atlantic to the Pacific. Mr. Watson and his ancestors have a world wide reputation as breeders of Polled Angus cattle. This class of animals now command a higher average price than any other class of beef cattle. The largest herd of pure bred cattle on the farm consists of 69 Polled Angus. The mag-

Green Fences.

A correspondent in the *N. Y. Tribune* says: "More than twenty years ago I began to raise osage fences, and while many of my neighbors met with failure in this industry, my efforts were usually crowned with success. Winter-killing is the chief setback. For two or three years the plants must be well mulched over winter, and the vacant spaces reset in spring. With age comes hardness, and no tree bears neglect better. An osage hedge set ten inches apart in the row should be a good, effective fence against all stock, hogs not excepted, in four years from setting. But hogs must not root along it, nor lie under it through the summer for shade, for grass is its winter protection, and bare ground its certain death. Shearing of the hedge should commence the second or third year, if one has time. But very little of it was ever done here at that age. Necessity drove most of us into hedging, and the fence once grown to effectiveness was left to itself, and there it stood a faithful guard for ten, or often twenty years, with no care save an occasional branch bent down and crowded into a hole below. "I have here on my small farm more than 600 rods of good osage fence, not much of it less than twenty years old. A few rods of it have never been either lopped or trimmed, and yet it does good service. Six years ago this spring I com-



ROUGEMONT—THE QUEBEC PROVINCIAL MODEL FARM, THE PROPERTY OF G. WHITFIELD, ESQ.

place, if he should take the pains to climb to the summit and admire it, as we did.

Mr. G. Whitfield, the proprietor, is a wealthy West Indian merchant. He was born on one of the farms which now comprise the estate. In his youth he had noticed the improvement made by the use of imported stock; and being desirous to improve the stock of his native place, he commenced the establishment of this as a model farm about eight years ago. He has added farm to farm, and erected the fine block of agricultural buildings which are to be seen in the view now given. The cattle stables are large, convenient and airy; they were constructed to accommodate ten herds of the different varieties of cattle and a dairy of 70 cows. Mr. Whitfield says he wishes to give each variety a fair trial and prove the merits of each. He also wishes to establish a trade between Canada and the West Indies. He intends to ship his dairy products to that part of the British possessions.

Mr. Whitfield has been generously allowing farmers the free use of his fine bulls for the improvement of their stock. He has spared no ex-

nificant bull, "Judge," stands at the head of the Angus herd. He is a perfect model of what we might term a mountain of beef.

The number of cattle at present located on the farm is 321, consisting of 69 Polled Angus, 16 Gallows, 27 Highlanders, 52 Shorthorns, 24 Jerseys, 34 Ayrshires, 5 Shetlanders, 9 Sussex, 12 Devons, 3 Kerry, and 70 grade milch cows. Over 200 head, including the fine herd of Herefords were sold last spring. In our last issue, page 223, we gave full information from Mr. Barnard regarding entrance to this Farm School.

LEGUMINOUS PLANT FERTILIZERS.—Sir. J. B. Lewes, the great English scientific and practical farmer, reasons from experiments in this style: "To obtain maximum crops of grain the proper course to pursue is to precede them with a crop of leguminous plants—that is, peas, clover, vetches, etc., to which the minerals should be applied, and this enables these plants to make an unusual growth, which renders them capable of storing up a large amount of ammonia—more than is necessary for the grain crop that follows—and the latter, by this active stimulant, is rendered capable of obtaining all the minerals required from the soil and the decaying vegetation for maximum crops."

menced lopping, and got at odd spells 200 rods of it into the shape of a bush fence. My man being ignorant of the business, I allowed him to cut the plants half way off at the ground and lap them backward, one upon another. With his axe to cut and his weight to afterward press down, he made a barrier of the high and wide branching trees that was almost equally effective against a horse or a rabbit. A dense and rank growth of sprouts shot up through it, and by the end of the second summer many of them were six to eight feet high and an inch through. I now determined to make a trim, neat hedge of it. This was no child's play—the tall and wide and thorny old row. With a hedge-axe I narrowed up the sides to the main stems, and with a short-lipped, long-handled shears I made it three and one-half feet in height, cutting off, for the most part, one shoot at a time. We now shear that hedge twice a year; first about the last of June and then again the last of August, and the fence is an ornament to the farm."

While the wet weather all over the country makes digging ditches impracticable, it is an excellent plan to mark where underdrains are needed. Unhappily on most farms failure of crops indicate the places plainly enough, and very often the crop that failed would have fully paid the expense in one year.

Road Scraper.

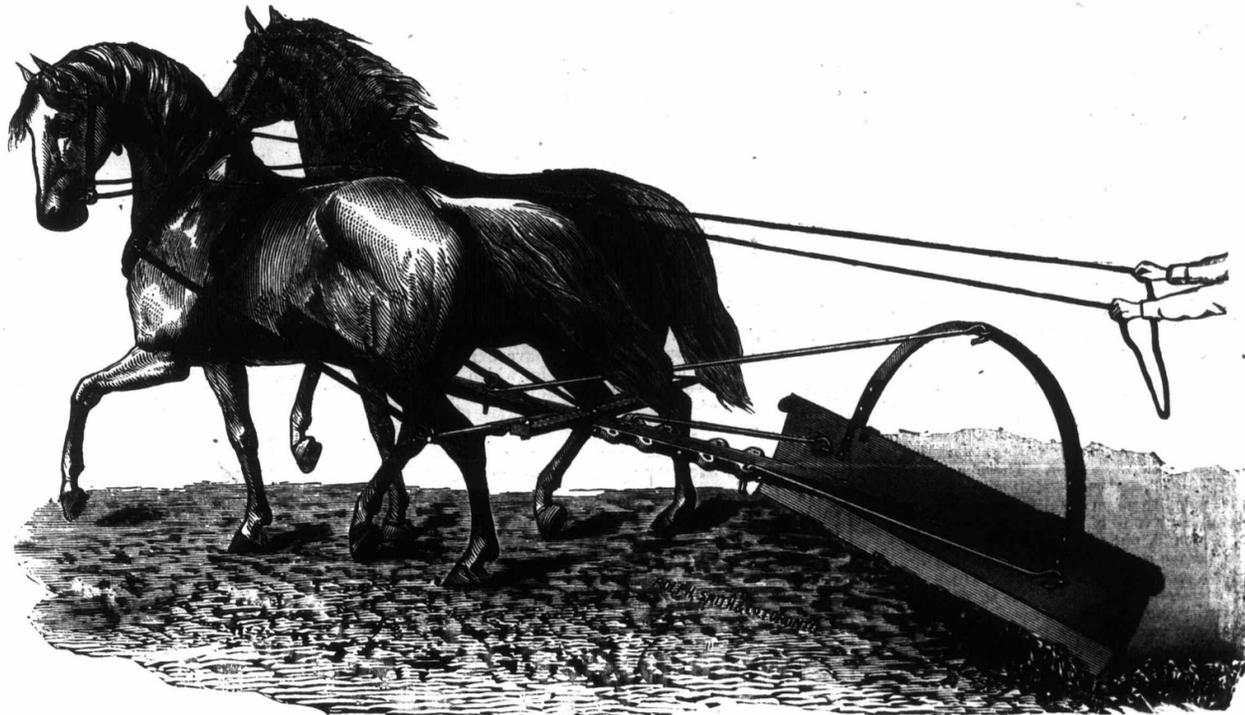
A road scraper that is admirably adapted for its intended purpose is manufactured by Copp Bros., the well-known implement manufacturers, of Hamilton, Ont., to whom we are indebted for the use of the engraving. The body of the scraper is made of a plate of boiler iron, and to its lower edge is secured a cutting blade of steel. The tongue is hinged by a hook to a loop in the center of the scraper, and brace rods hinged in the same manner to near the ends of the scraper have at their outer ends hooks that engage with eyes placed on the side of the tongue. By this means the tongue can be turned toward either end of scraper, and held by the rods to give the scraper a slanting position in relation to the tongue. The body of the scraper is held and adjusted vertically by a rod hinged to the top of the handle, and passing down to a pin placed in one of a series of holes in the tongue. The scraper is simple in construction, strong and durable, and is especially adapted to scraping roads and fields. It is easily taken apart without any tools, and needs but little room for storage. It only weighs 190 lbs.

ledged that in a case of this kind no higher testimony can be adduced than the experience of practical farmers; but the advocate of broadcasting will assert his right to balance his own experience against my own. Therefore, if I would maintain my position in favor of drilling, I must give additional reasons for the faith that is in me.

First, undoubtedly drilling secures a more uniform distribution of seed. In this respect there can be little improvement upon the work of the two horse force feed drill. Where its working is not hindered by uncleanness of seed the regularity of its distribution of seed is almost all that could be desired. But when the grain is thrown by the human hand it is impossible to distribute it uniformly. It is not in the power of man to grasp the same number of grains each time, give his arm the same sweep, and thus distribute them evenly over the same area at the same movement. Broadcast seeders may be in this respect an improvement upon the human mechanism; but they are nevertheless clearly inferior to the force feed drill. If the atmosphere is not calm, the grains, whether thrown by the hand or the broadcast seeder, will be blown hither and thither by the gusts; but as grain passes down a tube in the force feed drill till it reaches its final resting place, it is quite clear

with undiminished vigor and is now far ahead of it in the race for life. These evils are avoided by the use of the drill. For when the seed bed is prepared properly, independent of the use of the drill, the variance between the greatest and least depth the seed is covered is small indeed. None is left uncovered, and none is placed so deep that it will never germinate, or else reach the surface so exhausted that it is smothered out by more fortunate and vigorous plants.

Third, with the drill it is possible to more accurately regulate the quantity of seed sown and the depth at which it is covered. Both of these should vary with the character of the soil. On good strong land, less seed is required than on comparatively barren land. So the mechanical condition of the soil may have something to do with the amount of seed desirable to put upon an acre. The chemical composition of the soil also varies the proper amount of seed. To regulate the amount of seed per acre when it is sown broadcast by hand is always difficult, and to regulate it with any precision is clearly impossible. But the force feed drill is so constructed that the amount sown may be varied with all reasonable precision by the deflection of a lever. This advantage is more marked in the regulation of the depth at which the



THE ONONDAGA ROAD SCRAPER.

Drilling vs. Broadcasting.

BY JOHN STAHL.

There are yet farmers who maintain that broadcasting wheat is better than drilling it. I say there are yet such farmers; for the invention and introduction of the drill soon made broadcasting a notable exception. In many cases, if we accept it as true that good results prove the excellence of the methods by which they are attained, we must acknowledge that broadcasting is a good way to sow wheat. For no small number of those farmers who claim that broadcasting is preferable to drilling, and practice as they preach, are highly successful wheat raisers. Yet it seems to me that if they used the drill they would raise still more; and that while their success proclaims that broadcasting is good, it does not disprove that drilling is better. I am led to take this view of the situation by my own experience, which has almost conclusively taught me that drilling is the better method of seeding. For almost without exception I have raised more and better wheat by drilling than by broadcasting; when the yield of that sown broadcast exceeded the yield of that sown with the drill, it was clearly attributable to the existence of more favorable conditions in the case of the former. It is acknow-

that when the drill is used the winds can not interfere in the uniform distribution of the seed. Again, when the grains are thrown as they are in broadcasting, they will strike against the sides of clods and little elevations and fall in depressions, the result being thick seeding in low places, and thin or no seeding at all on elevations; but the drill drops the grain through a tube till it reaches the ground; the earth falls upon it immediately, and there is no opportunity for it to bounce out of place.

Second, the drill covers it to a more uniform depth. When the grain has been distributed by broadcasting it still remains to be covered. This is done with a harrow or brush. The reader need not be told that some is buried to a depth of six inches, some is not covered at all, while the balance is covered at all depths ranging between these extremes. The seed not covered at all is totally lost. It never germinates and is picked up by birds and animals. That buried six inches deep or more is also lost. It may germinate, though that is doubtful at that depth, but its vitality is nearly or altogether exhausted in the effort to force its way to the surface. If it does reach the surface, weak and exhausted, it is soon smothered out by that which was covered a less depth and which, as a consequence, soon reached the surface

seed is sown. By broadcasting the depth is put wholly in the domain of chance. The grain is covered at all depths up to six inches, no matter what the wishes of the farmer, guided by accurate knowledge and sound judgment, may be. But when the drill is used the depth is easily regulated. It is the work of but a moment to change the angle at which the hoes stand to the plane of the land, and thus to lessen or increase the depth at which they run. I believe that as a general practice wheat is sown too deep. When the land is so plowed that the horses tread upon the plowed land in turning at the corners, the drill will run shallow there because the ground is solid; and there will always be found the best of wheat. This may be in part attributed to the seed bed being firmer there; but I conceive that shallower sowing should be credited with a good part of the result. It exhausts the wheat plant to push itself six inches through the soil to the sunlight. It is becoming the common practice to sow late on account of insect enemies. These enemies, notably the Hessian Fly, do their damaging work in the early fall. By late sowing their ravages are escaped to a great extent. But when the grain is sown late it should be sown shallow, that it may quickly make a vigorous growth. Shallow seeding can not be done by broadcasting; but with the drill it is possible.

Our Great North-West.**THE BELL FARM.**

A correspondent sends the *Manitoba Free Press* the following account of a visit to the Bell Farm at Indian Head, which will no doubt prove of much interest:—

It is about ten miles square, and contains in all 56,800 acres. The school sections, two or three Hudson Bay sections, and the land occupied by three settlers, are within the square of ten miles: all the rest belongs to the Bell Farming Co. The farm is owned by a company which has a capital of \$600,000, of which \$100,000 has been issued in paid up stock. Last year the company, which is managed by Major Bell and C. W. Routledge, broke about 3,500 acres, and now have a growing crop of 1,600 acres of wheat, and 1,800 acres of oats. They are now busily at work breaking new land, and will complete the breaking this year of 6,000 acres, and will thus have about 9,500 acres of land ready for seed next spring. The land is a deep, sandy loam, having a few stones upon it, which will be cleared off and used for the erection, as far as they will go, of the large amount of buildings which the company is putting up.

They have about the centre of the farm a stone building, two stories high, and covered with a tin roof, which is 44 feet by 80, and contains eighteen rooms and two pantries, with a large dry cellar. A round stone stable has been built, 64 feet in diameter, with stalls for thirty-four horses, and in the upper story has room for sixty tons of hay and 3,000 bushels of oats, conveniently provided with shoots and appliances to save manual labor. Also a granary and store house, built of wood in the shape of a cross, each arm being 100 feet by 48. It has two floors, and wooden annexes have been added, which largely add to the capacity of the building. There are also two wooden houses for the men, each 32 feet by 26, and with comfortable sleeping accommodation for 17 men in each. There are also a blacksmith's shop, a carpenter's shop, a horse infirmary, dog kennel, ice house and hennery. There is also a kitchen garden promising a large crop of vegetables. All the buildings thus far mentioned are round the main farm house.

The company are also building a number of cottages and three-stalled stables, of which about 35 are now finished, and it is intended to have 50 in all complete this year. They are being built of stone picked off the farms as far as they will go, and the balance, which will be a good deal the largest number, of wood. Each cottage contains five rooms, all on the same floor. These cottages cost about \$450 each, and each 3-stall stable about \$120. It is intended to go on building these cottages and stables under a total of 213 acres of land attached to it, which is one-third of a section, one mile square. Each cottage has an acre of land attached to it for a garden. The intention, which is so far being successfully carried out, is to fill these cottages with persons employed upon the farm, and at the end of 5 years, to give the occupants the preference to purchase 213 acres and the building upon it, with the land brought into successful cultivation, at prices to be then determined upon and at long terms of payment. A good many English emigrants are already located in these cottages and give every hope and promise of becoming owners in fee of a valuable farm within the next few years. If this plan, which is now being successfully inaugurated, is carried out, as seems to be almost certain, the Bell farm will ultimately be the home of 255 families settled upon cultivated farms which they will soon be the owners of in fee.

There are at present upon the farm 100 horses, 32 waggons, 55 ploughs, 46 harrows, 21 seeders, 24 self-binders, 3 mowing machines and 3 steam threshers. The whole of the work is being done by horses, there being neither oxen nor mules upon the farm. At present 35 teamsters are employed, also 3 carpenters, 1 blacksmith, 2 stable men, 1 vet, 1 gardener, and 12 laborers, who are probably only likely to be temporarily employed, at least in part. Those men who occupy cottages have them rent free, are supplied with fuel, and are paid \$35 a month. They board themselves. The men who are not at present supplied with cottages live in the two houses near the main farm house, and receive \$35 a month and their board. There are at present upon the farm one bull, twenty-one cows, and fourteen calves. There are no sheep and no pigs. There is a supply of wood fuel on the company's land sufficient to last for five years. It costs \$1 a cord to cut and stack it, and its cost delivered at each cottage on the main farm building will be about \$2.50 a cord.

The water supply is hardly at present in a satisfactory state. Water can be procured for each cottage by sinking a well from twenty to forty feet. A plentiful supply will soon be procured for the main buildings by drawing excellent water by pipes from a lake, and making a reservoir in a coulee which is conveniently situated for the purpose.

The land upon which the present year's crops have been sown was broken, but not backset, the seed being scattered upon the sod after being well harrowed. One field of 800 acres of wheat, the first sown, is well headed out, but the straw is short, owing to very dry weather. Within the last few days copious rains have fallen (extending, to my own personal knowledge, all the way from Winnipeg to Moose Jaw.) These rains have greatly benefited the growing crops all over the country, and from accurate measurement the 800 acre field in the Bell farm showed a gain growth of upwards of one inch and a half within 24 hours after the rain had ceased to fall. I have a sample of wheat growing near Virden, which was pulled Saturday last, and measures upwards of three feet in height and well headed out.

The 1,000 acres of wheat on the Bell farm sown on ground which was broken but not backset will from present appearances yield an average of fully 20 bushels to the acre; two bushels were sown to each acre. It is believed that after being plowed this fall the yield of next year's crop will be considerably larger. All the oats growing this year will be required for the use of the farm. The 32,000 bushels of wheat expected to be garnered this year will be required for seeding for next year and the balance sold to surrounding settlers for seed.

There is no prospect of any wheat being exported from any point outside of Manitoba this year, but from the very large area of land now being brought under cultivation there ought to be a very considerable quantity of wheat to send away next year along the line of the C. P. R. between the second and third principal meridians. It is the intention of the Bell Farming Company to let one third of their land lie fallow every year, after a certain lapse of time, so as not to unduly exhaust the soil. The company will have spent by the end of this year about \$250,000, and if they carry out all plans described in this paper, they will have expended four or five years hence \$500,000, for which they will have about 50,000 acres of land under cultivation, capable of division into 255 farms of 213 acres each, all supplied with buildings.

Bone Manure for Pastures.

An English paper, in commenting upon the subject, remarks that the Cheshire dairy farmer, by free use of bone manure laid on the grass lands, makes his farm which at one time, before the application of bone manure, fed only twenty head of cows, now feed forty. In Cheshire two-thirds or more, generally three-fourths, of a dairy farm are kept in perfect pasture, the remainder in tillage. Its dairy farmers are commonly bound to lay the whole of their manure, not on the arable, but on the grass land, purchasing what may be necessary for the arable. The chief improvement besides drainage consists in the application of bone manure. In the milk of each cow, in its urine, in its manure, in the bones of each calf reared and sold off a farm, parts with as much earthy phosphates of lime as it contained in half a hundred weight of bone dust. Hence the advantage of returning this mineral manure by boning grass lands. The quantity of bones now commonly given in Cheshire to an imperial acre of grass land is 1,290 to 1,500 weight. This dressing on pasture land will last seven or eight years, and on mowed about half that period.

The worst weed is an excess of plants of the crop intended to be grown. In corn fields all the stalks should be thinned out to not more than three or four in each hill, and fed to the cattle. If in drills, the stalks twelve to fifteen inches apart will produce more grain than if more closely grown.

Fence corners, with their mass of brush and weeds, afford secure retreat for such troublesome insects as live through the winter, and for the deposit of eggs of others ready to hatch out in early spring the larvae prepared to engage in depredations upon the first plants that appear. Cutting out and burning the rubbish is the best plan, as fire puts an end to most of these, and thus the destroying element lessens the labor and saves the crops of the farms.

Stock.**Cheapest Time to Make Pork.**

R. F. asks if a full diet of grass in summer and a full diet of grain in the winter is not the cheapest plan for making pork. This he thinks would cost very little in summer, and the chief expense would come in winter.

The chief mistake in this idea, which is very prevalent, is, that it gives a period of comparatively slow growth at the very time when the growth should be the most rapid. Grass is a very important food for pigs, and should always be given them in the season; but to let the pig live wholly upon grass is to put it back to the old slow-growing condition of nature in the most favorable season for rapid growth. The skillful feeder should make the best use of his opportunities, and when the temperature is mild it takes so much less food to generate animal heat, and the extra food will produce so much more gain than in cold weather, that every consideration of economy requires that some concentrated food should be given in addition to the grass. The only really profitable pig-feeding requires judicious full-feeding from birth till time of slaughter. One hundred pounds of grain, fed in summer on grass, will produce as much gain as two hundred pounds fed in winter. All this difference is made up in temperature. Pigs do not require heavy feeding in summer to produce a larger gain than they can make in cold weather. A half ration of grain is quite sufficient in summer, and this small grain ration will pay twice the profit, according to quantity of that fed in winter.

It would thus appear that with a full ration of grass should be given grain enough to produce rapid gain through the summer, and this will require much less feeding in winter to reach the same weight. The cheapest way to make pork is to feed full every day of the pig's life till sold. It is very expensive holding pigs with slow growth in the most favorable season—the summer—and then making it up in the most expensive season—the winter.—*National Live-Stock Journal.*

Fattening Cattle.

The more we restrain the movements of the body the greater is the aptitude for fattening. Contentment aids the formation of fat. "Laugh and grow fat" is a proverb with a foundation in fact. Violent exercise, by stimulating the lungs, consumes the fatty matters. The size of the lung has a marked influence upon fattening. A large lung, developed by abundant exercise, burns away the heat-producing matter and retards fattening. On the other hand, a small lung and a small liver, though they render the possessor much more delicate, are favorable to fattening. The experiments of Messrs. Lawes and Gilbert show—(1.) That a large portion of the fat of the herbivora fattened for human food must be derived from substances other than the fatty matter in the food. (2.) That when fattening animals are fed upon their most appropriate food, much of their stored-up fat must be produced from the carbohydrates it contains. (3.) That the nitrogenous substances may also serve as a source of fat, more especially when they are in excess. So that we may affirm that while the nitrogenous substances of the food undoubtedly maintain the tissues of the animal body and produce flesh, they also produce fat and heat. In animals nature provides in a time of plenty for some of their requirements in a time of scarcity. Starch and sugar maintain heat and vitality; but unless there is a supply of the fats and oils the progress will be slow, because the maintenance of the vital principles taxes the latter.

All vegetable foods vary with the age of the plants yielding them, and the soil they grow upon. Hence the care necessary in selecting seeds for laying down pastures and in cutting and harvesting hay and straw. When grass is comparatively young it abounds in flesh-forming substances and in sugar. As the plant ripens the sugar becomes changed into starch and the starch into wood fibre. This shows the desirability of cutting all grass crops for hay before they have fully ripened. Cattle fed upon over-ripened hay have to consume some thirteen or fourteen per cent. more of indigestible woody fibre. Some experiments in feeding with hay alone have shown that in a large ox the store condition may be maintained by giving it about one-fiftieth of its own live weight per day; or, if working, one-fortieth. A fattening ox, having nothing else, will consume from one-twentieth to one-twenty-fifth of its live weight, according to

the degree of fatness it has attained. Sheep are said to consume about one-thirtieth part of their live weight of hay per day. These figures will show us that when hay commands a good price in the market it is not advisable to use it in any large quantity alone as a meat producer.

Improving Flocks.

The merchant is constantly trying to improve his trade, by improving the quality of his goods without increasing the price in proportion, trying to meet all the wants of his customers. The manufacturer tries to increase the amount of his sales and profits by improving the character of his manufactures; so, likewise, should the flock owner make it a constant study how to improve the character of his flock, both as to its capacity for increasing the weight of carcass and wool from a given amount of food, and its capacity for breeding strong, healthy lambs. Every element of income should be taken into consideration, and an effort made to increase the value of each.

The best digestion produces the best growth of body from a given amount of food, and the power of digestion is increased in several ways: First, by the proper selection of foods. A mixture of grasses is nature's prescription of food for the sheep, as well as other grass-eating animals. The mixture of grasses contains all the elements, in precisely the right proportion, and, when in full supply, cannot be improved upon. When other food must be given, it should be of a varied character, in imitation of the grasses. The sheep has a strong craving for variety in food, and should be indulged. It is always a strong recommendation of a food that it is palatable—that the animal eats it with pleasure. This is an element of digestibility. Second, habitual full supply of food increases the power of digestion. The full supply of food gives full exercise in the stomach, and its power is increased by this exercise. The blacksmith's arm grows more muscular by the constant exercise of wielding the sledge-hammer, so the animal full-fed from birth acquires a large increase of digestion, and grows with great rapidity to its full maturity. It is this increase in the power of digestion that enables the animal to come to full weight in half the usual time of slow growth. Food enough must be digested to make this growth in this short time; and this is the real improvement in the vital machinery of the improved animal.

Let us examine the effect of small and large digestion on the form of animals. If we note the bodies of the sheep kept upon barren hills, or where food is scanty, we find them long, thin-bodied, sharp-backed, long-necked, long-headed, and long-legged. This is the way nature moulds her forms on a meagre diet and slow digestion. An expert animal anatomist could, at once, tell the liberality of the diet of the animal by an examination of its skeleton. But if we examine the improved sheep of any breed, we find them compact, round-bodied, broad-backed, short-legged animals, rounded out into lines of grace and beauty by superior alimentation. This improvement might have been hastened by selection in breeding, but still the basis of the improved forms has been, skillful feeding, long continued. This increased power of digestion comes of long habit. An animal that has always had scanty food has a very limited digestion, and it cannot suddenly be much increased. The food must be increased very gradually, and the stomach increase as gradually in its digestive power.

It will thus be seen that skillful feeding is the true basis of improving the flock in form. The effect of poor feeding upon the improved Leicester and Cotswold sheep has often been seen, and the deterioration is much more rapid than the improvement has ever been. The flock owner must therefore always regard it as a great misfortune that his flock should be reduced to a scanty ration even for a short time. No prudent flock owner can afford to economize on the food of his flock; trying to save on their necessary food is simply reckless waste.—[National Live Stock Journal.]

The largest sale of Shropshire wool ever held in the Midland Counties of England, took place at Wellington recently. There were no less than 30,000 fleeces, and of lamb's wool 10,000, being a total clip of above 40,000 animals. The average prices were slightly over 1s. for fleece and 1s. 2d. for lamb's wool.

The Horse.

Over-working.

It is strange how little attention is paid by the majority of farmers and teamsters to the equal distribution of labor among their working stock. Nearly as often as otherwise, we find horses unequally paired to do the same amount of work. For instance, a small horse with a large one, or one that is thin and feeble with another that is in good condition and of unimpaired strength.

Then, too, not half the time is there any reasonable account taken of the weight of a load and the character of the road to be gone over. Is the load made suitable to the animal's physical strength, or must he draw as much as elsewhere over a bad or hilly road, a quagmire, or a plowed field, and nearly tug his life out in pulling beyond his strength? The philosophy of light loads and quick trips seems to have been almost forgotten. Many horses have been ruined by severe strainings, either manifesting great lameness or other injury at once, or gradually failing afterward, until they become nearly worthless.

Young horses are often put to work too early, before the bones are properly hardened and the joints sufficiently strong. In this immature condition the young animal is not able to bear constant and severe exertion, and if it is exacted of him, the owner must expect that the least serious injury which the horse can sustain will be limbs and joints enlarged and stiff throughout his whole life. Moderate exercise should be begun quite early, but full service of no kind should be required until the fourth year.

The Growth of Colts.

The sire, before conception, should not only be generously fed, but he should receive that amount of daily exercise that will keep, in a vigorous, healthful condition, a well-developed physique. Nothing is more deleterious to the progeny than an obese inaction as the daily life of the sire. When such treatment does not produce positive incompetency, it manifests itself in an enfeebled offspring. The colt is either blemished, or weedy, or dwarfed. The law of the preservation of physical powers is judicious exercise.

While carrying the foal, the mare, too, must be properly nourished and exercised, and sheltered from inclement weather.

Very frequently you hear the remark from horse breeders that the brood mare must not be kept in high condition, but the danger of an impoverished condition is much more to be apprehended. The foetus is fed by the blood of the dam. If she is half-starved, if she is exposed to the inclemencies of the weather, whose assaults require all the vital energies of her nature to withstand, it inevitably follows that the colt will manifest emaciation somewhere in his physique. If not in his want of size, it will be shown in his enfeebled constitution.

The time of foaling has a positive influence upon the size of the colt. Occasionally may be found a breeder who prefers a fall colt, but all nature seems to decide in favor of the spring time as the more auspicious period for size and power. Independently of the weather, the growth of the colt until weaning times depends almost solely upon the quantity and quality of the dam's flow of milk, and in both respects it is much superior in the warm, genial weather of spring and summer, when the abundance of grass and natural exercise stimulate its production, than when the severe cold of winter requires much of her dry feed to sustain her own life. The fall colt is generally stunted; not only is his coat rougher and harsher, but his form

approaches more to the dwarf-like proportions of the tough Canadian pony. The breeders of the blood horse manage to have their foals dropped as soon after New Year's Day as possible, because their age during that entire year dates, by arbitrary turf usage, from the first day of January, without reference to the exact day or month of their birth. To this one fact, as much, if not more, than to any other, must be attributed the great size of the race-horse. Being foaled so early in the year gives him time for growth before the midsummer heat brings the swarm of flies that almost eat up alive the young and tender colt, only a few weeks old, that has not strength enough to fight successfully these persistent pests. Coming so early in the year, he receives strong nourishment from his dam, that is generously fed. As his growth keeps pace with the advance of the season, her flow of milk is increased by the growth of the spring grass and the warmth of the returning sun, and his growing appetite is thus abundantly supplied. When weaning time comes, in the autumn, he has grown so large and strong that he can eat and digest strong dry feed, without suffering the least check in his growth, provided always he has abundant exercise, with a sheltered and warm bed. The proper time for weaning the colt, with reference to his future growth, has long been a mooted question. The universal practice has settled upon the age of six months, but the writer knows of a breeder who never weans his colts till the mare is within a month or six weeks of her succeeding parturition. He claims that when the dams are well cared for, this practice is not too great a drain upon their physical capacities. Moreover, if it was, then nature or instinct would force them to wean the colt without the interference of man, which is never the fact. His brood mares, even to old age, are strong and healthy, and constant breeders. But the effect upon the size and stamina of the colts is remarkable. Nearly every one of them overtops both sire and dam, while their depth of girth and fullness of flank and breadth of quarters, with strong limbs and ample muscles, would indicate that his practice of weaning them in the eleventh hour is productive of great size and strength in the offspring. The beneficial result upon the colt, at least, is susceptible of scientific explanation. Nothing in the form of nourishment that men can devise for the colt is equal to his mother's milk. It produces more sustenance for the bones and muscles and nerves and blood and the general system than anything else the colt can eat.

That which produces size and power in the colt must all be taken in at the mouth before it can be assimilated to the up-building of his physique. If the dam, therefore, is generously fed, on strong, wholesome, nutritious food, it follows that both in quality and quantity her milk is the most nutritious food the colt can receive. But while climate and soil contribute largely to the bone, muscle, and growth of the colt, yet generous feeding and comfortable quarters are necessary to insure the desirable size; care during the first two winters generally determines the future form of the colt. Especially is this true with reference to the attention he receives during the first winter after he is weaned. If he has only rough fodder, and is subjected to constant exposure, he is sure to be stunted. His growth and prosperous condition then seem to stop suddenly after he is weaned, and he remains at a standstill throughout the winter and spring, till the early grass again starts his growth. But then much valuable time has been lost in the period of his growth that can never be recovered. Moreover, his system has been stunted, and his subsequent growth is, like that of the pony, more in breadth than in height. All this is remedied if sufficient food and shelter are given to the young colt during the first winter of his existence; and if the same generous treatment is continued during the second winter, then the possibility of stunting has passed away. Every consideration, monetary and useful, of value and beauty, favors the horse of fine size. Whatever specialty the small horse may fill, the larger horse will serve much better.

Our farmers, and breeders of horse stock generally, should make it a special point to exclude from the harems dwarfed stallions and diminutive mares. Then they should give heed to the proper care and feeding of the colts during the years of their more rapid growth, and they would not only benefit themselves pecuniarily, but would contribute to the permanent value of the horse stock of this country in the future ages.—[National Live Stock Journal.]

Fruit Garden.

The Jersey Queen Strawberry.

In describing this strawberry a prominent writer says: It most truly deserves the title of "Queen." The berry is cone-shaped, slightly flattened at the point, and very large specimens partake of the oblong or oval form, yet smooth and perfect. It possesses a brilliant color, between a scarlet and crimson, as evenly and perfectly distributed as can be imagined, presenting an appearance that cannot be approached in beauty by any other strawberry. It is one of the largest and most luxuriant ever grown, thriving under any circumstances, although doing especially well on a good, rich soil; is easily grown, making vigorous runners and never burning or blighting its foliage; bearing the largest fruit of fine form and first quality—fine in texture, solid and firm, yet melting, high flavored, and luscious. It is the best of all strawberries to keep. At the close of the exhibit of the New York Horticultural Society, where it took first prize among thirty other varieties, after three days' trial of warm, moist weather, it was found that the Jersey Queen presented an appearance nearly as fresh and firm as when first placed on the table; whereas nearly all the other berries exhibited were covered with blue mould, thus being unequalled in the most desirable of qualities. It has been tested to withstand severe exposure and frost, when nearly every other variety in the same situation was destroyed. The best method of growing this valuable strawberry is to plant in single rows 2½ feet by 14 inches, and every third row should be planted with some good late bi-sexual variety blooming at the same time, such as the James Vick.

Peter Henderson says: This so far is the strawberry *par excellence*, each season's experience more than confirming all that has been claimed for it. It possesses the delicious aroma peculiar to English strawberries; in our grounds the odor was perceptible two hundred yards away. As it is one of the finest growing varieties, it is consequently likely to adapt itself to any soil or situation.

Growing Black Raspberries.

Care must be used at this season of the year to keep the new growth nipped off at tips when not over two to three feet high. If this nipping is put off too long, they branch heavily at top, and are easily broken over by hard winds, and, too, the tops for growing plants are not so easily bent to the ground. If plants are not wanted, and growing for fruit is the chief object, nip off the new growth of side branches when two feet long.

Care of Strawberry Beds.

The sooner plantations or beds are worked out after they are through bearing, the better. If in rows sufficiently far apart to cultivate, plow away from the rows, leaving rows six inches to one foot wide, owing to thickness of plants. Then scatter well-rotted compost among the plants and keep the ground well worked among them for two months. If young plantations set last spring, keep thoroughly worked out, and if intended for fruit only pick off the first runners that sprout out, thus giving vigor and strong growth to the set plants. Then allow the runners to grow out, and by keeping the cultivator going afterwards the runners may be kept thrown along in close rows. Some, however, allow first runners to grow and set plants, and form very thick matted vines before

also as Apple Leaf Aphis, *Aphis malifolia* (Fitch) They are deposited in the autumn, and when first laid are of a light yellow or green color, but gradually become darker, and finally black.

"As soon as the buds begin to expand in the spring, these eggs hatch into tiny lice, which locate themselves upon the swelling buds and the small, tender leaves, and inserting their beaks, feed on the juices. All the lice thus hatched at this period of the year are females, and reach maturity in ten or twelve days, when they commence to give birth to living young, producing about two daily for two or three weeks, after which the older ones die. The young locate themselves about their parents as closely as they can stow themselves, and they also mature and become mothers in ten or twelve days, and are as prolific as their predecessors.

The leaves of trees infested by these insects become distorted and twisted backwards, often with their tips pressing against the twig from which they grow, and they thus form a covering for the aphides, protecting them from the rain. An infested tree may be distinguished some distance by the bending back of the leaves and young twigs. It is stated that the scab on the fruit of the apple tree often owes its origin to the punctures of these plant-lice. This species, which was originally imported from Europe, is now found in apple orchards all over the United States and Canada.

Remedies.—Scraping the dead bark off the trees during winter, and washing them with a solution of soft soap and soda, would be beneficial by destroying the eggs. Syringing the trees about the time the buds are bursting, with strong soap suds and weak lye or tobacco water, the latter made by boiling one pound of the rough stems or leaves in a gallon of water, will destroy a number of the young lice. A frost occurring after a few days of warm weather will kill millions of them; in the egg state the insects can endure any

amount of frost, but the young aphid quickly perishes when the temperature falls below the freezing point."

The author describes a number of parasites which feed upon and destroy the aphid; nine species of the Lady-bird are described and figured; also Lace-winged or Golden-eyed Flies, and the larvæ of the Syrphus flies. The latter were frequently found on the lice infested leaves, last season, and were supposed by many to be the real cause of the destruction of the fruit.

DECAYED APPLES.—Farmers have often noticed that where green apples have been left on the ground till they rotted, the grass beneath them has been killed, apparently poisoned by their contact. A dressing of lime or ashes will correct this acidity, and restore the soil to fertility.

Do not prune, manure or cultivate pear trees during the summer. Cultivate and prune early in the spring and apply fertilizers in the fall.



THE JERSEY QUEEN STRAWBERRY.

winter sets in. The latter is our general practice. To grow in stools or hills, keep all runners cut off. It is claimed that for each runner thus cut off, a crown is formed on the old plant which puts forth one or two fruit stems, the fruit on these being much larger and finer than those from matted rows. However, we do not advise it for large plantations.

A very good way to force plants into a strong growth is to sprinkle over them water from barn yard, being careful not to put it on too strong.—[Fruit Recorder.]

The Apple Aphis.

In "Insects Injurious to Fruits," Prof. Saunders gives the following concerning the Apple Aphis, which has so largely increased in numbers of late: "During the winter there may be found in the crevices and cracks of the bark of the twigs of apple trees, and also about the base of the buds, a number of very minute, oval, shining black eggs. These are the eggs of the Apple Tree Aphis, known

The Flower Garden.

Hardy Azaleas.

The Azalea has long taken an important rank among flowering shrubs, particularly the greenhouse varieties; indeed there is no plant, indoor or out, that will give such a blaze of color, as will a good selection of Azaleas when well flowered. The American or Hardy Azaleas, *A. calendulacea*, *nudiflora* and *viscosa*, with hosts of garden varieties bred from them, are inhabitants of all our best gardens, and have been so wonderfully improved by seedling culture as to throw into the shade the original species; there can now be selected at least fifty varieties better than the very best of the original species. Every year, too, adds to the diversity of sorts and to the size of the flowers, which is one of the characteristics of the improved kinds. In most places they thrive in the common soil of the garden, but for successful cultivation

leaf mould should be mixed with the soil, and where they are grown in masses, which is the proper way to produce a good effect, it is best to give them a light mulching of dry leaves. *Azalea americana*, a beautiful hardy species, with double flowers of a bright reddish-purple color, has no equal as a flowering shrub, either for the open border or for forcing in the greenhouse. It is a native of China, an evergreen and perfectly hardy. Another splendid new species, of recent introduction from China and Japan, is *A. mollis*, a deciduous species, the flowers of which are of various

colors and of immense size. Japan has recently furnished us another beautiful and distinct species, *A. Balsaminiflora* (see illustration). In general character it is quite unique; its flowers are bright salmon red, beautifully double, rosette-like, and regularly imbricated, similar to those of a Camellia-flowered balsam. Being very double, it lasts in perfection a long time, and from the neatness of its blossoms is invaluable for bouquets as well as for general decoration.

This species is of so recent introduction, that it is only to be met in collections of rare plants; the demand, however, for such plants will be sufficient inducement for our florists and nurserymen to increase their stocks, which can be rapidly done, so as to meet the great demand there certainly will be for a plant so beautiful and rare. Although it has not been thoroughly tested in this latitude, there cannot be any doubt as to its hardiness.

It should be a practice to cut the fruit stalks of flowering plants as soon as the flowers fall. It is an exhaustive process to the plant to bear fruit. Such plants as snapdragons, Chinese pinks and other biennials that flower the first year from seed can generally be made to flower the second year if not allowed to fruit. Care should also be exercised in regard to the plants from which seed is to be selected.

Winter Blooming Plants.

Vick says: Some of the best plants for winter flowering must have attention given them from this time onward, to prepare them to take the place of our summer plants when the dull season comes. Many have already, probably, sown seed of the Chinese Primrose and Cineraria; if not, there is still time, but the matter should now be taken in hand in earnest. The Chinese Primrose, more especially, should receive attention for window culture, while both are planted for the greenhouse. Chinese Chrysanthemums should not be overlooked, as they are of the highest value in the late fall and early winter months. A variety of colors is desirable, with plenty of white, and then it is also best to have some of the large flowered varieties and some of the small or pompon sorts, and also some of the Chinese. Good plants may be produced by setting them in the garden and cultivating them there until removed to pots about the first of September; but if kept in pots from the



AZALEA BALSAMIFLORA.

first, and all through summer, finer plants can be obtained. The pots can be in a place a little shaded, and proper attention should be given to watering and repotting the plants, and regulating their growth by pinching in the shoots up to the first of August.

Cuttings from this time for two months onward can be made of geraniums, and plants raised to be in prime condition during winter. Other plants can also be propagated, and a cold-frame will be found of great service.

Making a Lawn in Autumn.

Some of our correspondents appear to hesitate about laying down a lawn at any other time than in spring. If given the choice, we should prefer autumn. When the grass seed is sown in spring, unless a good "catch" is made very early, the young grass has to contend with a daily increasing temperature. If sown in the fall, the cool nights, with their refreshing dews, restore the plants, and they grow rapidly during the warm days, while there is, usually, at this season, an abundance of rain to encourage growth. It is sometimes recommended to sow oats with the grass seed; however useful this may be in late spring sowing, it is not at all needed in autumn. Oats are of doubtful utility at best; whether the good they do, by shading the young grass, is not more than offset by

depriving it of needed nourishment, is a question. At all events, oats at this season are not needed.

In making a lawn now, as at any other season, it is well to recollect that the work is to be done for many years, and that in no part of the grounds will thorough preparation, deep tilling of the soil, and abundant fertilizing, pay better than here. In a lawn of considerable extent, it is a mistake to suppose that it is necessary to reduce the surface to a dead level. For small grass plots, on small places, this may be desirable, but a large lawn appears to much better advantage if the surface is gently undulating. Various mixtures of seed are offered by the seedsmen. Some of these seem to be well considered, but anything more unsuited to our climate than the "French Lawn Grass," can not be imagined. Probably not a third of the kinds of grass it is said to contain, will survive in our climate. The best lawns we ever had were sown with "Kentucky Blue-grass" and "Rhode Island Bent" (a variety of Red-top); in both cases a small amount of "White Clover" was added. For

strong soils, the former, for light and sandy ones, the latter, will no doubt give satisfaction.

In buying grass seed for a lawn, look well to its quality; some seed of Kentucky Blue-grass — the same as June grass — sells for twice the price of others and is worth four times as much. Chaff does not always cover seed, and the samples had better be carefully inspected. The advice to use from three to eight bushels of seed to the acre, is founded upon the uncertain quality of the seed. Probably four bushels of fairly good seed would be ample. The seed should be divided into two or

four equal portions, and the sowing made, after thoroughly preparing the soil, in different directions. The seed may be brushed in, but at this season, a good rolling will give a sufficient covering. Where the lawn borders on roads or paths, or on shrubbery or other plantations, it will be best to lay a margin of turf, six inches or more in width. For small areas, the laying of sods is advisable, and this may be done now, as well as in spring. In most localities, a common, or the road-sides, will usually afford a fine, close turf. The soil, in this case, should be as thoroughly prepared as for seeding, and the turf well beaten down, to bring its roots in close contact with the soil. If necessary to cover steep banks, sods must be used. These may be held in place by the use of pins; plasterer's lath split, is best. These will decay by the time the sod becomes well established.— [American Agriculturist.]

Labelling the trees and shrubs is hardly a desirable practice on private grounds. A better plan is to have made an accurate and neat map of the premises, with each plant properly indicated by a number referring to the name in the margin. Even small grounds should be mapped. One often wishes in Winter to study over or to alter his grounds, at which time a plan is quite necessary.

The Field.

Draining Swamps.

A NOVEL METHOD.

The following method of draining land, although not a new one by any means, is well worth notice:

An expert well-borer sank several test shafts in various parts of a farm, and found that the underlying ground was a tenacious blue clay, fourteen to sixteen feet thick and almost perfectly impervious. Beneath this was found a strata of white sand. The well-borer and his machine were placed in a wagon which by means of a long rope was hauled to the deepest part of a pond about an acre in extent. Here he bored a well down to the sand, completing the operating before sunset of the day when the work began. In thirty-six hours the water had disappeared and the pond was dry. To make this short perpendicular drain permanent he had it cleared of sediment, sunk the shaft about two feet into the bed of sand, and filled it to the top with clean, coarse gravel from a creek bed. The gravel was heaped about a foot high above the shaft to strain the water properly that the shaft might not become choked.

There are thousands of places in the west where, year after year, farmers have plowed around such wet spots, giving them up to the possession of rushes and frogs. Yet they could be drained easily by a few hours' work. A large swamp lay for years on the southern edge of a village, a noisome barrier to progress and a bone of contention in village and township politics. To drain it a large ditch a mile or two long would have been required; but some one fortunately discovered that a thin sheet of clay was all that kept the waters from going down into a deep strata of gravel, boulders, and sand. The wells were sunk and the swamp thoroughly drained, at an almost nominal cost, leaving rich black soil, which is the most productive and valuable in all that district. There may be thousands of similar swamps, where two or three days spent in sinking test shafts would show a ready means for converting sloughs or swamps into fields of wonderful fertility.

A Novel Fence.

Among the curious and valuable exhibits at the Railway Exposition recently held in Chicago, was an electric fence. It is made of ordinary steel wire, with no barbs or sharp points or edges to tear the flesh of man or beast, and no more intricate or expensive than an ordinary wire fence. Its simplicity and cheapness are its highest commendations to the public. The fence is put up alongside the highways, around the pasture, fields or gardens, and runs up into the house, where it connects with a small battery located in a little cupboard that can be kept locked. The battery is put into order, the connection made and the thing is ready. When a cow or horse runs against it, a percussive shock darts through them, such as a man feels when he takes hold of the brass handle of the showman's electrical apparatus. On trial it is found that an animal will dart back from the fence every time and very soon learn to avoid the wires as they do the barbed ones. By a simple key the force of the shock is easily regulated. By a very simple and cheap device the current may be sent through a bell in the dining or bed-room, so that if a single strand of the wire fencing anywhere gets broken the bell is set ringing at once, and the break can be repaired. So, too, call-bells can be arranged anywhere on the farm where the fence goes, in the horse or cattle barn, or milking yard. Even more, the same wires and battery can easily be utilized for telephone purposes between neighbors, &c. It must be of immense service, not only on the general farms of the country, but on the great cattle ranches.

Regarding the value of birds to the farmer, Prof. Stearns, in a paper read before the Connecticut State Board of Agriculture, states that a young robin in the nest requires a daily supply of food more than equivalent to its own weight.

An Indiana farmer planted cabbages in "missing hills" of corn and found that they were not injured by the imported cabbage insect. This season he will locate his cabbage patch in the middle of his corn-field. He finds that the cabbage fly moves near the surface of the ground and prefers smooth sailing. He thinks that cornstalks will prevent it from moving through them.

Poultry.

The Culling.

The early hatched chickens are growing more rapidly now than at any other period in the year. The warm sunshine, grass and insects they get while roaming in their daily jaunts around the farm and village plat help to develop flesh, features, bone and muscle.

The young stock has now so far advanced that one can tell with tolerable accuracy how they will turn out. The size, shape, color and facial markings are beginning to develop and take form. Now is a good time to watch their progress and select the most promising from the flocks, and give them extra care and wider range, if possible. It is not economy to treat all fowls alike, particularly when you practice annually the culling process. Good stock breeders never do it, but some require heartier food than others; the old hens do not need fattening food at this season—only the young and select, and those intended for market that should receive extra treatment.

The culls can be got rid of advantageously when peas and other vegetables come to market, and those that are retained for breeding purposes or for sale to customers will fare and thrive better by the others being away. Their condition is quite different from that of adult fowls. These may be overfed easily, and will put on fat internally, to their injury as layers and breeders. But the young stock in good thrift, having ample space to skip around, convert what they eat into flesh, bone and muscle, and continue to thrive.

Chickens cooping together without hens should be removed by degrees to a more permanent roosting place, if it be airy and clean. It is very well in dry seasons to let them occupy their coops, if they have perch room, but open sheds or temporary roosting places, water tight at the top, are more preferable than lying on the damp ground, as is the case with those in coops out of doors since the past spring.

FEEDING FOR RAPID GROWTH.

Very young chicks cannot consume enough of food at one time to last them half a day, as their crops are small. Their rapid growth of flesh, bone and feathers, and habitual exercise, demand material proportionably nourishing and active to develop a vigorous constitution and build up a "harmonious whole"—that is, to have their limbs and body grow in size, firmness, strength and symmetrical beauty.

The food for growing fowls should be the best, not necessarily very strong, highly stimulating or expensive, but of a kind that will cause a healthy and rapid development of bone, flesh and feathers. Animal food is not only necessary, but beneficial, when judiciously fed. When given often and too much at a time, it has its attending evils. Animal flesh has in common much of the same properties, and, though good and nourishing and stimulating as a substitute for insects when the birds are confined, or in early spring, late fall and winter, is otherwise not as natural or agreeable as the different forms of insect life that draw their sustenance from the vegetable kingdom.

The next object in feeding well is to build up a healthy constitution, so that they may become, when matured, useful to breed from, and be remarkably prolific and able to resist attacks of cold and wet. A well-fed bird is not as liable to disease as a neglected one. Neglect, bad food and bad care predispose fowls to many ills that they would be strangers to if well fed and comfortably housed.—[Poultry Monthly.]

The roosters should now be taken from the hens, and either killed off, or kept by themselves. None are needed now, and there will be more eggs without them.

Some varieties of chickens are poorly suited for market. They show the pin feathers, and are not so saleable as white or light colored fowls. Those with yellow legs and skin are more saleable than blue or white legged ones. Asiatics can be raised early, and command a high price as broilers. In starting in the poultry business do not build one large house, but several small ones. They need not cost much to hold thirty, or near that number, without crowding. The smaller flocks always do the best under all circumstances, provided they are fed in proportion. Divide the flocks into several buildings, and healthy fowls and the best results are sure to follow if food and cleanliness are also provided.

The Apiary.

Bee Notes for August.

There is, during August, a notable scarcity of honey flowers. This dearth commences sometimes early in July. When this absence of bloom occurs, the bees are idle, and with this comes a consequent indolence of the queen. She stops egg-laying, brood rearing ceases, and the hive is losing in numbers. The queen will not lay again at her best, even when the full bloom comes. We have often noticed this tardiness of a queen to resume when once she has wholly stopped laying at this season. In the absence of bloom, it pays well to feed the bees, and thus keep up the breeding. It takes but a little syrup or honey each day, one-half pound is sufficient, and, with our convenient feeders, it is easily and quickly done. We have experimented in the matter over and over again, and have always been impressed with the wisdom of such practice. This feeding keeps the number of bees up to the full standard, and the bees in prime condition to appropriate the autumn nectar. The bees are not all old in late autumn, and are in better condition to resist the dangers of winter and spring.

It is desirable to provide artificial pasturage. By proper planting, we may have nectar-secreting bloom all the season, and there will be no need of supplemental feeding. The Syrian bees seem to breed on all the same, whether there are flowers or not. It is probable that in the desert regions of Syria natural selection has produced this race, well fortified against those famous famines which, of old, sent the patriarch to Egypt for bread and corn.

Veterinary.

New Disease in Horses.

At a meeting of the Royal Agricultural Society of England, attention was called to a new disease amongst horses. The disease was something similar to eczema in man; it was a skin disease, and began in the back, then went to the shoulders, and afterwards to the mane and tail. The speaker said he believed that it came originally into England with some horses from Canada, and he had chiefly heard of it in the neighborhood of Brighton and in the county of Surrey. He was afraid that veterinary surgeons understood very little about the disease, and therefore he might state that he had successfully used carbolic soap on the horses afflicted, as well as on a cat in the stable, which caught the disease, and the man who looked after the horses. One veterinary surgeon whom he had consulted told him that he had used acetic acid with similar success.

SIR,—I have a cow that has warts on her teats which hurt when she is milked; is there anything that would kill them without making them sore?
J. A., Humberstone.

[If the warts are elongated and attached by a narrow or slender neck, clip them off with a pair of sharp scissors, then touch with nitrate of silver; if they are attached by a broad base do not meddle with them, unless they crack, then use vasoline and oxide of zinc ointment.]

SIR,—I have a splendid horse about 10 years old; about three months ago I drove him rather hard over 38 miles of bad roads; the day was wet and cold, and ever since he has been lame, and suffering especially in his two fore feet. Before this he suffered occasionally from tenderness and a little contraction in one of his fore feet. But now he is completely useless, and I do not know how to treat him; I am thinking that he is foundered. Will you be kind enough to say something regarding this case in your next issue of the ADVOCATE.
P. P., Arisaig, N. S.

[The symptoms described indicate disease of the navicular joint or corns in the heel. It will be necessary to have the shoes removed and carefully examine the heel for corns; should they not exist, then we may fairly conclude that it is disease of the navicular joint. Soak the feet well in hot water, pare the sole well down, and poultice with flaxseed meal until the soreness and fever is reduced, then blister thoroughly with cantharidine ointment; repeat the blister if necessary in two or three weeks.]

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 one end open and postage will be only 1c. per ½ ounce.

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

SIR,—It appears to me that the *ADVOCATE* is improving with each succeeding number, and I find it is consulted as an authority by your numerous readers hereabouts, and is highly appreciated on account of the valuable suggestions it contains. Many of the hints to farmers in recent numbers were very timely and useful. For instance, your suggestion that more calves be raised instead of knocking them in the head, has had a wide spread influence. One extensive dealer has told me that while he used to handle hundreds, a deacon skin now would be a curiosity. Moreover, good veal calves used to sell for \$2 to \$4 each, while now newly dropped grades sired by the writer's bulls go off like hot biscuits at from \$2 to \$3 each, and the demand exceeds the supply. Ordinary weanlings are now worth \$15 and up per pair, while a few years ago hundreds could have been bought in the fall after they were one year old for that money. Indeed, the importance of improved stock and more of it is taking a pretty firm hold on the public mind. The writer knows of one man with only eight cows who is raising twenty-eight calves this season. Another valuable advice you gave was the importance of securing high bred bulls in season. Why, sir, in this neighborhood the veriest scrubs are at a premium, while the pedigreed bull calves are being sharply looked after. Then, again, the barbarous custom of washing sheep has been reprehensively spoken of in the *ADVOCATE*. Of all the ruinous practices in vogue among farmers this is about the worst. The writer has frequently seen long wool sheep die on the bank after leaving the water, though never a Southdown, yet the operation is no doubt injurious to them also. Their superior hardihood probably enables them the better to endure the ordeal. But why wash them, anyway? The manufacturer has to re-wash all fleece-washed as well as tub-washed wools. Then why not allow him to do the whole thing without subjecting both man and beast to such a trying ordeal? There is no money in it, but much loss by the practice. The writer has for years discarded the middlemen and dealt directly with the manufacturers. This year we shipped confidentially, and our returns were highly satisfactory, viz., 33 cents for unwashed Southdown wool, with ½ off for shrinkage. Now, when we bear in mind that the fine woolled sheep of Ontario yield about the same per head as the coarse wools, viz., a fraction over 5 pounds, the reader can readily perceive where the profit comes in, while coarse wool rules at about 18 cents per pound, to say nothing of the vast superiority of the Down in every other respect. It is extremely marvellous how we, as agriculturists, are wedded to old varieties and old customs. Our fathers did thus and so, and they were intelligent and successful. True, but they lived under entirely different circumstances. Our fathers came into the woods, cleared their land, built their buildings, raised and educated their children, and kept out of debt, while hundreds who have succeeded to these beautiful homes and who try to follow the old paths are becoming hopelessly involved, a sure proof of the necessity of an improved system of management. There evidently is a screw loose somewhere, Mr. Editor, and your efforts in the *ADVOCATE* are well calculated to reveal to the reader which nut is off. More anon.

EVERGREEN, Mosa, Ont.

SIR,—A owns a farm and resides on the same. B owns a farm joining A, but does not reside on the same. A has his land cleared by the side of A, while the land that B owns is in bush, doing him no good. Can A lawfully compel B to make half of the line fence between them? Can a settler compel a speculator to make half of the line fence between them?

H. F., Sault St. Marie, Algoma.

[In any case you must keep half the line fence between you and your neighbor's land.]

SIR,—The cherry-trees in this quarter are badly affected by what some people call "black knot." It is similar in appearance to the "black knot" in the plum trees, but very much larger. Inside the swelling there are always found the white grubs burrowing their way in the wood. From present indications the trees are likely to be very much more seriously affected next year, as very few are going to the trouble of cutting off the affected limbs and burning them, which should be done. There is one small orchard here which is all but entirely free from the ravages of insects or grubs. The proprietor says he can account for this freedom from the pests from the habit he has adopted of throwing common land plaster over his trees, vines, berry bushes and vegetables two or three times in the season, commencing early. A second small orchard has but few cherry trees, but a number of plum trees, which are loaded down with fruit. The curculio does not seem to have affected the plums in the least, and the promise is this year as it was last, that the crop will be splendid. The quantity is a matter of wonder to the neighbors, who have not for years been able to get any yield from their trees. They have even tried the experiment of exchanging trees with one another, but the result is the same. In this man's garden the blue plum, green gage and others are year after year abundant, but his neighbors have not for a long time got any but scanty crops. Now, what can be the reason of this? The soil in the gardens is similar; in fact all are on a bed of limestone rock from a foot to 18 inches below the surface. The owner of the garden can give no reason for his success, unless, he says, it be that he allows a flock of hens to roam in the garden, who pick up the grubs, &c. He has spread street scrapings on the ground, and manured liberally. On the adjoining lot there is a blacksmith shop, from which falls a heavy coating of coal dust, smoke, &c. Can you tell from these what makes the fruit trees of this spot so favorable? The garden has always been a failure in vegetable gardening, as the soil seemed barren because of the close proximity of rock to the surface. But in plum raising it is a marvel.

CANADIAN, Dumfries, Ont.

[Black knot is not caused by an insect, as our correspondent appears to think; it is of fungoid growth, and the grubs he speaks about get into the decayed wood afterwards. Land plaster or sulphate of lime would act in two ways—first as a fertilizer, and again as an insect destroyer. The limestone foundation you speak about would be favorable to all kinds of fruit trees, especially plums, because it affords excellent drainage and plant food for the trees. The effect of the blacksmith-shop smoke may be two-fold. When coal is burned certain gases are generated, sulphuretted hydrogen and carbonic acid gas. Both these are destructive to insect life, and the latter would act as a slight fertilizer; the coal dust would be beneficial also. Sulphur burned under trees would have about the same effect; the fumes of this will destroy insect life.]

SIR,—I have carefully perused the "Essay on the Management of Cows, &c.," and I would therefore ask the author a few questions and give a few of my own observations. I have handled a great many bulls. Am this season working three to their full capacity, and have been constantly in the business for the last five seasons. I have by my books observed that some cows return in three days, some in seven and others in nine, while in some cases it is two weeks and sometimes even nine weeks when they return. I have hitherto been in the habit of allowing the bull to cover them whenever they exhibit symptoms of a desire for his company. Is such a course correct and proper? I do not like to send a cow back when she has been brought perhaps several miles. Last season a cow came and was duly covered; in six weeks she returned and was again served; then in seven days the owner sent his son to say that she was again in heat and wished my advice. I replied that if he should send her I would let the bull cover her, but I did not think it necessary and would leave it with himself to decide what was best, as she had on former occasions proved troublesome. Well, he did not bring her, but she proved in calf all right. So that we have a clear case of a cow seeking male companionship when she was actually in calf. Now I have observed that a writer in the *Stock Journal* says that abortion among cows is sometimes caused by association with the bull after pregnancy has taken place. Will the author of the prize essay please give us a general rule for such cases? I

have secured the fertilization of cows that proved difficult to get in calf by slip-looping a cord or small rope around just in front of the bag and hips, and then as soon as served pull up sharply upon the cord. But then I have known this to fail also. Some blame the bull and run off to another. This, I believe, is folly, unless the bull is impotent. Last season my Shorthorn proved extremely successful. But then one cow came three times, and the fourth heat taken to another, and again to a third, without any better success. She was then returned to mine. I felt somewhat surprised, and yet in a measure pleased, as it proved reasonably clear that it was not the bull's fault. I on this occasion gave two services, and the cow proved to be in calf. Now, as a rule, I believe that one embrace is as good as a dozen. But may there not be cases where the second will be necessary in order to properly open the organs to fertilization? But I object *in toto* to any cutting and searing as mentioned in the above mentioned essay. The sensitive part referred to was placed there for another purpose altogether. Some seasons the state of the weather, or condition of the herbage, or both, or some other causes, seem to render it extremely difficult to secure the fertilization of cows. Is it proper to hold cows that through fear or otherwise will not stand well for service?

E. J. Y., Wardsville, Ont.

SIR,—I would like to ask a question through your valuable columns. Will the wool of Shropshire sheep fetch more money in the market than other long-wools, Cotswold, &c.? We have some of the Shropshire sheep in this neighborhood, but cannot get any more for it than for coarse wool. 2. Can you tell me of a good, reliable grain chipping machine and where made, one fit for farmers use to attach to a horse-power?

R. B., Thornbury, Ont.

[1. Wool buyers pay no more in this country for Shropshire wool than for the coarse Cotswold, although it is a finer quality. Dealers only make two classes, and grade wool as combing wool, which includes the long and coarse kinds, and clothing or fine wool, which takes in Southdown and Merinos. 2. Look in our advertising columns for the machine you ask about.]

SIR,—In your answers to correspondents please reply to the following:—1. In farming a place infested with wild oats would you advise chopping the oats used in feeding horses, as some say they will grow after being voided by a horse? 2. Is there in this Province a Drainage Fund (Government), and if so, is it available to individual farmers or only to municipalities? By answering the above you will oblige.

G. Y., Motherwell, P. O.

[1. It would be a good plan to chop your oats; this would avoid any chances of germination of the wild oats taking place after passing through the animal. 2. See editorial in another part of this number on this question.]

SIR,—Would it be better to sow Lucerne grass after fodder corn this fall or next spring; also, what quantity per acre broadcast?

F. A. H., Leeds Village, P. Q.

[We would advise our correspondent to delay sowing until spring, owing to the lateness of getting off fodder. Ten or twelve pounds to the acre is the right quantity.]

SIR,—How to make a cold frame?

G. N., Grandin, N. W. T.

[Excavate about 18 inches and put on a frame a foot high; put sash on the top, and cover with mulch or straw. Take this off on fine days to allow a free access of air.]

SIR,—Would you please inform me through the columns of your valuable paper if there are any tiles made in New Brunswick. If so, who are the manufacturers? R. R., Forest Glen, N. B. [Perhaps some of our manufacturers can answer this, and an advertisement would promote their sale.]

SIR,—Can you inform me what are the tuition fees at the Veterinary Colleges of Toronto and Montreal? If not, send address and oblige.

W. H. B., Winnipeg, Man.

[Have not the required information, but Prof. A. Smith, of the Ontario Veterinary College, Toronto, Ont., will send you the necessary particulars.]

SIR,—Wild Mustard is one of the most dreaded and best known weeds to all farmers all over this world. I hereby send you a sample of another weed that, in my estimation, is as bad, if not worse than Mustard, for the simple reason that it spreads faster in a whole neighborhood than the Mustard, it has more seeds from one stalk, and on account of the seed being smaller and lighter, will travel over those prairies on the snow in winter for miles, especially when the prairie is coated with a covering of thin icy snow crust; then the strong winds of March will take those seeds a great distance; the plant will thrive well where Mustard would die—I mean in fence corners or road sides.

The harm it will do.—If cattle eat it the milk will be so strong of the odor that it cannot be drank; the butter will smell so strong that it can be easily detected before it is tasted. I have been told by a native that has known its existence for 30 years, that he always had to send his beef cattle to the plains for three weeks before he killed them for such.

Mustard would not be so bad as that. It is said to have come from France. No amount of freezing will kill the blossoms, which it continues to do from spring till fall. It is now just ripe; the seeds that have grown since spring will germinate and blossom again before fall. It is beyond control, and I am of the opinion that it extends from Pembina to Lake Winnipeg, from Winnipeg to Portage—along the river I mean. I expect it will be met with in Prince Albert. By driving over an old field with a wagon when the field would be wet would carry enough seed into a new farm to choke the crop out in three years. It has several names, milkweed, stinkweed, etc., but I think that "first mortgage" is the most fit name for it.

D. L., St. Agathe, Man.

[The plant received is called *Thlaspi arvense*, L.; English name, Field Pennywort or Mithridate Mustard. It belongs to the Order *Cruciferae* (Mustard Family). It is a smooth annual with root-leaves undivided, stem-leaves arrow-shaped and clasping, and has small, white or purplish flowers. The pods are broadly winged, flattened, half an inch in diameter, several seeded and deeply notched at the top. The plant grows in waste places throughout Canada and also in Virginia. It is a native of Europe.]

SIR,—I enclose two rose bugs. They first appear on rose bushes; they then get on the apple trees and grape vines, and are destroying the apples and grapes fearfully. Kindly inform me if there is any cure for them, and oblige?

A. H. W., Kingsville P. O.

[The specimens sent are the common rose beetle or bug. Besides attacking the rose it is also very injurious to the grape vine, the apple, cherry, plum, etc. When numerous they may be detached from the trees by a sudden jar, falling on sheets spread below to receive them. They are naturally sluggish, do not fly readily, and are fond of congregating in masses on the foliage they are consuming, and hence in the morning before the day becomes warm they can easily be shaken from their resting place, collected, and either burnt or put into scalding water; or the trees can be syringed with Paris green and water. As this pest is very partial to the Clinton grape, and will congregate on it in preference to any other variety, a few vines of this grape should be grown as decoys and thus lessen the labor of destroying these beetles.]

SIR,—I have found the *ADVOCATE* a good farmer's paper, well worthy of their patronage; although I am surprised at your zealous defence and advocacy of the old Provincial Fair nuisance, after it has outlived its usefulness, if it ever had any, which I very much doubt. Of course it is said by interested parties that it has been the cause of all the improvements in the country, but I think the money lost by competitors, given in prizes and grants by the Government, let alone the thousands spent in buildings and grounds, would, if spent directly in stock, furnish a bull, boar, buck and horse, at a nominal cost, to every township in the Province, and would have been a general thing; not, as now, in the hands of a few gamblers, for it's little better as it goes. Be this as it may, its necessity is gone, if it ever did exist, by the independent exhibitions, and grants by government can be little less than the robbery of one class of the people to give it to another; and I say this without fear of successful contradiction, for the only plausible argument in their favor is

a day or two of amusement and recreation, and that none will say is a legitimate business for a government to compete in, when so well supplied from other sources. W. D. S., St. Catharines.

SIR,—Thinking the answering of the two following questions might prove interesting to some of your readers, I take the liberty of asking them:

1.—The names of a couple of the best hardy perennial creeping vines for portico or house-side.

2.—After the fruit has set on melon vines and we desire to force them by the use of glass, where could the sash be set to the most advantage, over the fruit itself or the root of the plant?

J. B. W., Cambridge P. O.

[1. The Chinese Wistaria, the Clematis and Virginia Creeper or climbing roses would suit your purpose. 2. Set on the roots would produce the best results in growth.]

SIR,—I enjoy your paper thoroughly and obtain a great deal of useful information from it. We have had a very cold, backward spring here, and a good deal of the early sown wheat is a failure in consequence. Later sown grain of all kinds has done better this year than the early. I see an enquiry in your last issue about clovers and grasses for Manitoba. I have tried red clover without success, as it is winter killed after making a good growth in the fall. I have seen white clover growing wild here. Timothy does fairly well here; in many cases very well. Hungarian does well also. The lump so universal amongst cattle in Manitoba does not form on the bone but in the skin, and appears to give little inconvenience to heavy cattle. Every single head of cattle that I have kept till full grown has had one or more of these lumps in the lower jaw or in the loose skin between the jaws. In one case I used turpentine when the lump first showed, and it absorbed again. I have only seen one case fatal, and in that case the whole head was covered with the lumps. These lumps generally burst, and after discharging thick matter for a few days, they heal over, but the lump always remains hard and callous. I never heard them accounted for. Yours, &c.,

A. C. H., Swan Lake, Man.

The Coming Exhibitions.

THE DOMINION EXHIBITION.

The arrangements for the Dominion and Centennial Exhibition, to be held in the city of St. John, N. B., on the second of October, and the three following days, are progressing satisfactorily. To provide accommodation for the exhibits of the produce of the Dominion, a second permanent Exhibition Palace is being erected a short distance to the south of the present one. The new building will be connected with the other by a gallery, to be devoted to an exhibition of the Fine Arts. The drill shed, the use of which has been granted by the Dominion Government, will be used as a machinery hall, in which power will be provided free of charge to all who need it. Between the drill shed and the main buildings will be the poultry house and agricultural hall, which will be over three hundred feet in length, thus giving altogether over one thousand feet in length of substantial, well-finished structures, where goods of the most delicate workmanship can be safely displayed. In the rear of these buildings will be the stock yards.

Full particulars as to the conditions of entry, freights and other charges are ready for distribution, and may be had, together with any other particulars desired, by addressing Julius L. Inches, Esq., Sec for Agriculture, at Fredericton, N. B., to whom application for space should be made. For general information we may state that the Exhibition will be open for live stock, agricultural, horticultural, domestic and dairy products, manufactures of all kinds, minerals and arts. Articles not produced in the Dominion may be exhibited for honorary mention, or a diploma or medal may be granted. Entries should be made not later than the 15th of September. The books will be closed on Wednesday, September 26th. Entries sent in between these dates will be received conditionally.

The Exhibition of 1883 will be held in the centennial year of the founding of the City of St. John, and a display of old-time relics would form an attractive feature of the Exhibition, recalling the earlier history of the city and province, and identifying the present with the past.

PROVINCIAL ONTARIO EXHIBITION.

The Thirty-eighth Provincial Exhibition is to be held in the city of Guelph, from the 24th to the 29th of September, under the management of the Agricultural and Arts Association. A complete revision of the prize list has been made by the Council.

In the horse exhibit a new class has been made for heavy draught Canadian bred; none are eligible for this class unless they are under five crosses from heavy draught stallions. In this class prizes are given to brood mares with foal by side, filly three years and under four, filly two years and under three, filly one year old and under two, and foals of 1883. Shire bred horses are also allowed to compete with Clydesdales, and a prize is given for the best team of walking horses.

In Durhams, a prize is given for the best four calves sired by the same bull and raised by the exhibitor. The Prince of Wales' prize of \$60 is also given for the best herd of one bull and four cows owned by the exhibitor.

Herefords, Ayrshires, Galloways, Polled Angus, Devons and Jerseys have all been put on the same footing, giving three good prizes in each section.

For bulls of any ages in these classes a silver medal is offered; also the same for the best herds; this equalization adds a large amount of money to the prize list over any previous year.

In sheep Merinos and Shropshires have been placed on the prize list. There are also two special prizes, given by the Thorley Cattle and Horse Food Co., of Hamilton, for pens of long and short woolled sheep, consisting of one ram and nine ewes, with same conditions as to feeding. Silver medals are to be given in all classes for one ram, two ewes, two shears and over, two shearing ewes, and two ewe lambs.

Classes for pigs are not changed materially.

The same can be said of poultry. A trial of self-binding reapers and single binders is to be held on the Government Farm on Friday, the 28th of September, and a special prize of a tent of the value of \$50, given by the National Manufacturing Co., of Ottawa, for the best and largest collection of agricultural implements and machines.

In field grains some new premiums have been offered; also Mr. William Weld, of the *FARMER'S ADVOCATE*, London, Ont., gives special prizes, amounting to \$100, for fall and spring wheat, best varieties for the general farmer to raise.

In the field roots some of the old varieties of potatoes are left out and new ones added, such as Early Ohio, Pride of America, Magnum Bonum, White Star, Bonnell's Best, Burbank's Seedling and Success.

In dairy products the Western Dairymen's Association gives \$100. A good list of premiums is offered.

In sugar and bacon smaller exhibits are allowed; 15 lbs. of sugar instead of 30, 1 gallon of syrup instead of 2, etc.

In honey and apiarian supplies several changes have been made and additional premiums offered. Fruit, garden vegetables, and plants and flowers have not been materially changed.

THE INDUSTRIAL.

The Industrial Fair will be held in Toronto September 11th to 22nd, and promises to eclipse the Exhibitions of any previous year. The directors have devoted themselves to providing attractions which will not merely maintain the status of the Fair, but increase its popularity. The Secretary has visited many of the leading cities and towns of the Province to see exhibitors; and also leading centres of the population in the United States. Among a few of the minor novelties will be cheese and syrup factories, balloon ascensions, Japanese day fire works, and the presence of the celebrated Gilmour band of New York. The great attractions are yet necessarily left for full consideration which their selection demands.

In the horse department a new feature is the substitution of over \$2,000 worth of handsome medals for the diplomas hitherto awarded for the best animals in each class, irrespective of age. The aggregate of prize money too has been increased.

In cattle a departure, never attempted before in Canada, is to be made, and the result will be watched with interest. The plan of judging by points, which was adopted at the Philadelphia Centennial, and has been in use for years at the shows of the Highland and Agricultural Society of Scotland, is to be partially introduced as an experiment. It will be applied in the cases of

medals and sweepstakes only. The judges are to be furnished with cards, on which the points of each animal will be recorded. Exhibitors will be given duplicates of the cards as filled in, and will thus have the opportunity, not afforded under the old method, of knowing precisely the grounds upon which the decisions of the judges rest. In the number and gross amount of the prizes for cattle a great increase has been made. Three prizes in all sections are offered, instead of two, as was the case last year, excepting in regard to two breeds. A prize, which cannot fail to gratify breeders, is the Elkington Shield—value \$250—presented by an English firm for the best and largest exhibit of thoroughbred cattle.

New special prizes are offered for sheep. The third prizes for fat sheep are stricken off, but the amounts are added to the first and second prizes. The most important change, however, is the recognition of the Merino as a now important breed by the addition of a new class in which a full set of prizes will be given.

No change has been made in the premiums for pigs.

The list for poultry is greater than ever before, and more liberal than that offered by any exhibition in America. Additional classes have been added, but the greatest number is in pigeons, in which respect the superiority of the prize-list to all others on the continent is most marked.

For dairy products the addition has been made of a special prize of \$50 for the best five firkins of butter.

In field grains a large special prize is offered for red winter wheat, and another for the largest number of prizes in this class.

In the horticultural list it has wisely been decided to limit the number of prizes for professional nurserymen's fruit, and to increase the value, so as to make it worth while for an exhibitor to make a large and full display. In other respects the list is much the same as in previous years. New varieties of apples and grapes and flowers have been added to the list.

Prizes are offered for specimens of workmanship by mechanics, non-mechanics and apprentices. Another very commendable addition to the list is that of prizes for new inventions of any kind, the amount and number of the prizes to be regulated by the merit and number of the inventions exhibited.

At the request of bookbinders and wholesale manufacturers of textile fabrics and furniture, the prizes in these classes have been stricken off as not only unnecessary, but detrimental to the interests of the show. The exhibits, it is expected, will not be affected unfavorably by this change. The amount of the prize money deducted here is added to other classes.

MANITOBA.

The Ninth Exhibition for this Province will be held at Portage la Prairie, from the 1st to 6th Oct. next. The prize list is long and the large sums offered for premiums far exceed what is offered in the same classes in older provinces, and should be sufficient stimulus for a large and varied competition. With such an efficient staff of directors there is no doubt that the forthcoming exhibition will be one of the most successful in the Dominion.

THE WESTERN FAIR

Will be held in London on the 1st, 2nd, 3rd, 4th and 5th days of October; \$15,000 are offered in prizes. One of the principal attractions will be a band tournament which will take place during the afternoons and evenings; \$750 will be given in prizes, and the grounds will be illuminated with electric lights. No doubt this part of the programme will prove very attractive. The directors are trying to make arrangements for the holding of a grand pyrotechnical exhibition and a balloon ascension. The directors are working hard to make the Western Fair a success.

THE GREAT CENTRAL FAIR

will be held in Hamilton, from the 2nd to the 5th October, inclusive, and promises to be highly successful. The prize list is extensive and liberal. The Niagara Peninsula, upon which Hamilton is situated, is justly considered as the finest for horticulture in the Dominion, consequently the display of flowers and fruit doubtless will be as usual be magnificent and form one of the principal features of the exhibition. The trials of speed in the afternoon of the three last days will, the directors claim, furnish all the attractions of a race meeting.

Hamilton, which is justly acknowledged as the great Dominion centre of manufactures, will on this occasion make a finer display in the Industrial Department than has been witnessed on any previous occasion. The manufacturers have assured the Directors that their contributions will add to the high reputation which the city enjoys for the variety and extent of its productions.

The Directors have decided to award medals to manufacturers in some of the departments, where the goods are simply on exhibition and not competing for prize money, when the character of the exhibit entitles them to this distinction, the object being to induce manufacturers to make such a display of their productions as will give the public an insight into the variety and extent of our Dominion industries.

PROVINCIAL EXHIBITION OF NOVA SCOTIA will take place at Truro, N. S., from the 24th to 28th September, 1883. The prize list is a liberal one and should command numerous entries. \$500.00 has been provided by the Provincial Government to pay the expenses of the exhibits from this fair to the Dominion Exhibition at St. John, N.B., on the week following. The articles will be selected by a committee appointed for that purpose.

Dates of Principal Fairs.

The Dominion Exhibition, at St. Johns, N. B., on the 2nd, 3rd, 4th and 5th October.

Provincial Exhibition, Guelph.—Commencing Monday, September 24th, ending Friday, September 28th.

Industrial Exhibition Association, Toronto.—Commencing Wednesday, September 11th, and ending September 22nd.

Provincial Agricultural and Industrial Society, Winnipeg, Manitoba.—October 3rd to 6th.

Provincial of Nova Scotia.—At Truro, from 24th to 28th September.

Western Fair, London.—Commencing Monday, October 1st, ending Friday, October 5th.

Great Central Fair, Hamilton.—Commencing Tuesday, October 2nd, ending Friday, October 5th.

Brantford Southern Fair.—Commencing Tuesday, 9th October, ending Thursday, 11th October.

Algoma Agricultural Society.—At Sault Ste. Marie, on Tuesday, 9th October.

Southern Counties, St. Thomas, Ont.—Commencing 25th September, ending 28th September.

Grand Wheat Prizes.

For testing, we will send, per mail, postage paid, four ounces each of the Martin Amber, the Rogers, the White Mountain, and the Red Russian, to any enterprising person who will send us \$1.00 for a new subscriber for one year for the FARMER'S ADVOCATE AND HOME MAGAZINE. Should any prefer to substitute any of the following varieties, namely, the Scott, Michigan Amber, Clawson, Fultz, Democrat or Hybrid Mediterranean, in place of either of the first named kinds, they can do so; or if preferred, one pound of either of the new varieties instead of the 4-oz. packages of the first-named collection, will be sent; or 2 lbs. of the Scott, Michigan Amber, Clawson, Fultz, or Democrat.

N. B.—We do not sell any of these for cash; we only supply as above stated. We do not guarantee any variety quite pure, but procure the best we can from leading and reliable seedsmen.

During the season for gunning and fishing, the farmer should keep notices posted warning off all trespassers, if he does not like to have grain trampled down, and fences broken.

Lime acts upon and greatly aids the decomposition of organic matter in the soil. It is thought to neutralize the organic acids contained in what are called "sour soils." It also acts upon the inorganic or mineral constituents of the soil, and aids in converting them into forms in which they can be taken up by the plants, especially in liberating potash from its combinations.

The Royal Agricultural Show.

BY OUR OWN CORRESPONDENT.

York, Eng., 21st July, 1883.

The annual show of the Royal Agricultural Society opened here to-day in every department, and, although high prices were demanded for the inaugural day, the show yard has been very largely attended, more than double the number being admitted up to mid-day that paid for entrance at Reading, and at the close a record was made trebling the attendance on the opening day there.

The judging commenced at nine o'clock punctually, by which time a very critical crowd had assembled around the rings in which the operation was carried on. The first to be paraded were the Shorthorn classes, and those who were capable of expressing an opinion pronounced them to be remarkably good. The prize was awarded to Mr. Outhwaite for the best bull calved since 1866, for a very handsome animal with a well-known pedigree, called "Lord Zetland," which has previously taken many prizes. The exhibition of bulls calved in 1880 has been made a feature of the show, and the prizes offered produced an entry of some twelve or fifteen animals of a most promising character.

Mr. Foljambe, M.P., secured the first prize, with a well-known animal called "Bright Helen;" whilst Mr. John Rowley, of Pontefract, deservedly received the highest honor for a bull calved in 1881, which was certainly a very handsome animal. The Prince of Wales was an exhibitor in the class for bulls calved in the year 1882, but was unsuccessful. His Royal Highness, however, made up for the deficiency by securing a fair share of honors in the sheep classes. He had a sharp tussle with Lord Walsingham in the Southdown classes, the latter having for years past cultivated this breed of sheep. Little more need be said in reference to the Shorthorns. In number they were numerous, as they always are at the Royal; and, as the breed is largely cultivated in Yorkshire, an exceptionally good show was expected, and the anticipation has been fully verified. After the Shorthorns had been judged, the same set of judges took in the Herefords, not numerous in number, but certainly very handsome beasts. About fifty entries have been made, and this was regarded as a remarkable fact, seeing that the county had been practically "shut up," in consequence of cattle disease, for months past. The stock, however, came to York in good form, and the only fault found by those who inspected it was that it was too fat, and was better adapted for the Smithfield Christmas show than for the ordinary show of the Royal, whose object is to cultivate and improve breeds of cattle. The Jersey classes were again largely represented, and here and there is a great show of enterprise. The value of the breed has been for years fully recognized, and probably there has never been brought together a better selection of animals than those which are exhibited at York.

A large amount of interest was shown in the Suffolk red-polls, and everyone seemed to be delighted to see them again in full force at the show yard. It is admitted that this herd is one of the best for dairy production purposes, and well calculated for the district where it is reared, and it has been a long-standing grievance with the people in East Anglia, that greater encouragement has not been given to the herd, which they regard as a thing acclimatized. The Scotch polls are not seen to the same advantage here as they are at Smithfield, but they were fairly represented. The Devons form a particularly strong class, as they do at every show of the Royal. They have been forwarded in considerable numbers in the ordinary way as lean stock, and with few exceptions look in wonderfully good condition, and give promise of doing well in the future. Mr. William Perry, of Lewdon, and Mr. Larthing, of Bridgwater, were very successful; and the Earl of Coventry also secured a prize. What has been said of the Devons equally applies to the Sussex. They are fairly well represented, considering the distance they have been transported, but they are not up to the merit which one would have anticipated. The Agates and Stanfords of Horsham and Steyning have, as usual, taken honors.

The dairy cattle classes were well filled, and although no first prize was awarded for the heifer in milk or in calf, a second prize was given to Mr. Harrison, a thorough specimen of a Yorkshire farmer. Nearly every breed of sheep is represented. Very likely the greatest interest is centered in the competition in which the Prince of Wales, from his Sandringham estate, was a prominent exhibitor. The Hampshire downs made a wonderful show, and fully sustain the reputation which they made

in taking off the champion prize at Hamburg a few days ago. The Southdown people seemed to have gained the premier position with regard to small, compact sheep, and the rest, but Hampshire has made rapid strides, and is not far behind the Southdowns. It is also pleasing to notice that the Shropshire graziers are following the light of their brethren in the South, and, judged by the number of sheep sent in excellent condition, they have evidently awakened to the fact that sheep-grazing in some districts may be made a profitable transaction. Lincolnshire, being close to the great county of York, has, of course, sent a goodly muster of sheep, and for weight it cannot be questioned that they hold their own, beating anything else out of the field. In very heavy sheep like the Lincoln symmetry is not made a great point, and it is quite certain that with the conditions laid down the prizes have fallen to the proper owners. In the opinion of eminent judges the Southdown breed of sheep had reached almost perfection.

The working dairy was visited by the general public, and the operations were watched with great interest, and this will, without doubt, form an important feature in the Royal shows of the future.

The International Agricultural Exhibition

was recently held at Hamburg, and although a very fine collection, was scarcely equal to the previous one which took place at Paris, in 1878. The grounds were beautifully situated, and were laid out and the buildings designed after the model of the Royal, of England, and for comfort and neatness could scarcely have been excelled. The number of entries was very large, but for some reason, probably the close proximity of the Royal Show, the number of British exhibitors was comparatively few, especially in horses and cattle; and the animals that were exhibited were very inferior. As might have been expected the show of Dutch cattle was very large; many of the cows were attended by Dutch dairy maids in native costume. In sheep there was a splendid display. The classes were divided between wool and mutton. In the class for flesh the British breeds were largely represented, although not to such an extent as the Merinos. The prizes of honor were four, two for wool, and two for meat; but although the competition was close, the Merinos only took one of the four prizes. The sheep were in pens raised from the ground, which gave the judges a better chance of examining the animals. And the sheep competing for the wool prize had to be sheared on the ground, and in the presence of the judges.

There were six entries of centrifugal creaming machines exhibited. A novelty was the competition in cow house models; the examples numerous and excellent.

In the Science Department were models, in two sizes, of all known races of domestic cattle, horses, and poultry, numerous specimens in connection with veterinary science, abnormally born beasts, skeletons of animals, models of head stalls, harness, and machinery, collections of agricultural works, samples of wool in every conceivable form, from entire fleeces to clipped and dressed samples; collections of the skulls of sheep and pigs, of calves' heads, with various anti-sucking bits attached; a large collection of the hoofs of horses, with varieties of shoes attached, showing the treatment of defective or injured hoof; models of the teeth of animals, showing their age at different stages; examples of herd-books, of farm and dairy account books; large models of silkworms in various stages; of a complete set of dairy implements; and many things, too numerous to mention, which made the Pavillion at the same time an agricultural museum and school. We are sorry to hear that this really interesting exhibition is likely to result in a heavy loss.

Weedy pastures make poor and bitter butter. When a pasture is in a very foul condition it should be ploughed and planted with some hoed crop.

Cows left to pick their living through the hot weather often suffer even when the pasture is reasonably good, rather than go out to graze during midday heats. If they are put in a dark stable through the day, watered and given a soiling feed at noon, the animals will be much more comfortable, and their milk product will be increased. To this extent soiling should be practised by those who adhere to the pasturing system.

Ensilage.

Condensed from an address delivered by Dr. J. T. Edwards, of Chamberlain Institute, Randolph, N. Y., before the W. N. Y. Agricultural Association:—

Doubtless all will concede certain indisputable facts; for example, that the ensilage system is the most interesting subject now presented for the consideration of agriculturists, because it promises most largely to lessen their labors, and increase their profits. It will be acknowledged, also, that summer pastures are better for stock in every respect than winter hay;—that if we could in some way preserve for the winter those qualities in the feed of cattle which round their muscles, overflow the milk pails, and make fragrant and sweet their butter, we should produce a result in which all would rejoice.

Organic chemistry is almost in its infancy, and some go so far as to say that it is not yet born; for when analytical chemistry takes hold of an organism it must first destroy it before it can tell us of its composition. That which is thus destroyed cannot be re-created. No one can tell how it is that plumbago, charcoal and the diamond can all be carbon, one three and three one; or how is it that the white of an egg and the venom of a rattlesnake are composed of the same elements and in the same proportion. The best chemists in the world confess their ignorance of illotropism and isomerism. We need not, therefore, be surprised if science has not yet explained some of the most interesting facts in connection with ensilage. For example, ensilage or preserved food is more digestible, and therefore more nourishing than when first cut. This is a point of great importance. It is as true of the beast as of the man, that what he digests, and not what he eats most, promotes his welfare. Consequently, if we increase the digestibility of an article, we have increased its food value. This is what we do in cooking dough and potatoes. We do not materially change their composition, but no person will hesitate to prefer for his dinner the cooked food. When the green fodder is first placed in the silo, a slight fermentation takes place, which develops heat. Now we do not know precisely what change is thereby affected; perhaps something like this occurs. Fifty-six per cent. of cornstalks are starch and woody fibre, eleven per cent. is sugar. Perhaps the oxygen, not yet excluded from the fodder, unites with the sugar, producing an acid which acts on the starch and fibre, thereby converting them into cellulose or grape sugar, a process somewhat akin to our bread-making.

Whether this be true or not, the fact remains that it is more digestible, and better agrees with stock than the fresh cut corn-stalks. Have not all of us observed something similar to this change? Last year I saw cattle, although in fine green pasturage, eagerly eating Canada thistles which had been cut and thrown into a heap the day before. Many farmers have noticed that stock are more fond of corn-stalks the day after being cut, and prefer various kinds of wilted fodder to the fresh. The chemical difference between the green and the ripe apples is very slight, yet the child dies from eating the one and thrives on the other.

Here is a Bartlett or Duchess pear, hard and just gathered; eat one, and you suffer for hours from indigestion, if you are not made sick. Lay them aside for a time, and although nothing has been added to or taken from them, yet by some change in their molecular or chemical structure they have now become palatable and nutritious. I do not claim that we can scientifically explain fully why this is so, but think that we are prepared now to accept it as a fact.

In April I excavated a large cellar in one of the bays of my barn, using the earth removed to grade up certain places where it was needed. I then built around the cellar a substantial wall of stone and cement, and also cemented the floor. This underground room was 8 feet deep, 14 feet wide, 40 feet long, and this cost me four hundred dollars. Upon this wall, availing myself of the timbers of the barn, I built a structure of plank and matched hemlock boards, 16 feet high, thus making the whole silo 14x20x24. Again using the cross timbers of the bay, I made two board partitions across, thus making the whole room into three silos, each very nearly 13x14 feet in size. The total cost was about \$550. Our spring was wet and cold; consequently, I did not get all my corn planted until the 6th of June. I used two kinds, the "Mammoth Ensilage" and the "Southern White or Horse Tooth."

Where each had the same chance, there was but

little difference in the growth made. I planted 12 acres in four different ways. Two acres were broadcast, two bushels of seed to the acre; one acre in Mammoth Ensilage was planted by hand, one grain in a hill, six inches apart, and the rows three feet apart; five acres were drilled in by an ordinary grain drill, three to six grains to a foot, rows three feet apart; the other four acres were also drilled in by the same drill, same number of grains to the foot, but double the number of rows, by turning the drill around and driving back, so as to make a row six inches inside the outside row, thus making the distance between the inside rows 2 feet 6 inches. All things considered, I like this last plan the best. The stalks have room to grow, but are not too large. The double rows also make a kind of hedge, which acts as a support. I used in this last seeding about one and a half bushels to the acre. I do not like the broadcast method at all; the stalks are small; they fall down and it is very difficult to readily gather them for cutting. I became so disgusted with this that I left one acre uncut, making the product of eleven acres to be put into my silos. Though the season was unfavorable, the growth of corn was beautiful. No fertilizers were used, but the land was part of the rich Conewango bottoms, never cropped but a few times before. The corn stood over twelve feet high, many stalks being fifteen feet high, the blades measuring often seven inches in width, and single stalks weighing from 5 to 7 pounds.

I began cutting the 6th of September. Two men did the cutting with ordinary corn knives, two did the loading, and four teams carted to the barn. I used for cutting, the "Cycle Cutter," and it did its work admirably. I think it would cut sixty tons a day.

I used an elevator to raise the corn into the silo. The chains that I used were not stout enough; this caused me no little annoyance. My power was one of the ordinary engines used to run threshing machines. We cut into seven-eighths inch pieces three hundred loads, which averaged fourteen hundred pounds to the load, making something over two hundred tons of ensilage, or a little less than twenty tons to the acre. We were eight days in completing the work, and the whole cost, including seed, plowing and dragging land, cultivating once, shovel-plowing once, gathering, cutting, and packing away, was \$1.62 per ton. Another year I expect to reduce this expense nearly one-third.

On Nov. 18th, we opened one of the silos and began to feed. About two inches of the corn on top was partially spoiled; the remainder was bright in color, with a fragrant, vinous odor, and the thick stalks with a decided acid flavor, the leaves less so. The cattle did not like it the first day; some of them refused it the second day. They very soon began to eat it with avidity, and since then prefer it to the finest hay. We feed each one forty pounds daily, with one mess of hay, but with no grain whatever. The indications, up to this date, show that I shall be able to carry through the winter, in good condition, 60 head of cattle, from the product of 11 acres of corn and 12 acres of grass. Of these sixty head, 35 are cows, 23 are calves, 2 are four-year-old working stags. They have been at work every day for two months, skidding logs and drawing out wood from a muck swamp. Their food has consisted entirely of ensilage and hay. They are in fine condition—fit for beef. Of the three hundred loads of sweet, nutritious cornstalks drawn into the barn, I will venture to say that there will not have been wasted two per cent.

It may be of some interest for you to know my method of feeding out the ensilage. My cattle stand in two rows facing inward to a drive-way in the centre of the barn; silos back of one of these rows. I suspend a hay-carrier so that it can run from the silos to the centre of the driveway. On the hook of the carrier is hung a barrel by an iron bail, which is pivoted just above the centre of the barrel. Through this hole a rope (with a knot in the end to hold it), is run, then a small pulley is suspended from the hook of the carrier, over which this small rope is passed, and then run back into the silo. This contrivance is for emptying the barrel after it has been filled and run out into the driveway. On the floor of the driveway is a car of sufficient capacity to hold enough for once feeding. This car does not run on a track, but has three iron wheels, the front one easily turning. This whole apparatus for moving the ensilage cost me \$32, and with it two men will feed my sixty head in thirty minutes. By using a basket instead of a barrel, one man could remove and dump the food without leaving the silo.

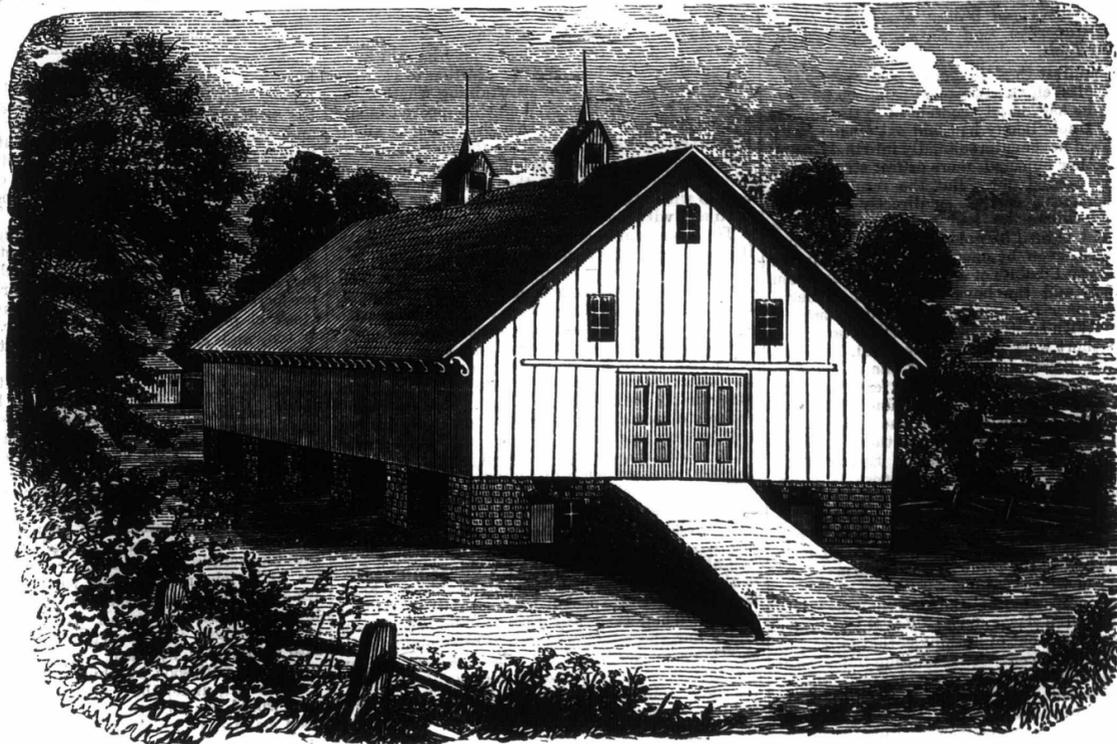
A Model Farm Barn.

The principal advantages attained in the construction of this design are a dry, light and well-ventilated stable for cows, convenience in feeding and caring for the same, ample storage for all the

forage needed during the winter, beside room for all the grain raised on a large dairy farm; also, depositories for manure so arranged that it is protected from the washings of heavy rains without incurring the risk of injuring the health of stock or rotting the timbers which support the stable floor,

as is the case where the manure cellars are directly under the stable. By referring to the engravings, the reader will understand how these advantages are secured.

The basement walls are built on a foundation of stone, hammered into the soil, and are twenty



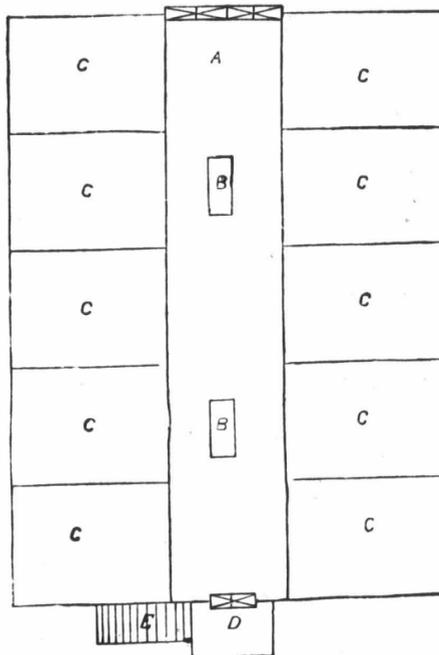
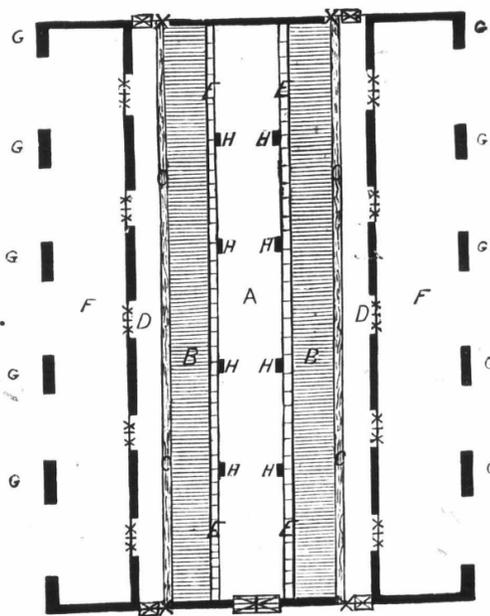
ELEVATION.

inches thick, of quarry stone, laid in lime mortar, and are eight feet high; the sills are bedded in mortar, and are of yellow pine. The cross-sills are supported by two cast-iron columns (set on a thick stone, four feet square) under each bent. The piers under main sills are two by four feet of quarry stone. There are six bents in the frame, the posts of which are braced and pinned at both

top and bottom. The feed-holes or traps are directly beneath the cupolas, which, together with the windows in rear of stables, are hung on hinges, and may be swung up to secure perfect ventilation. That portion of the basement devoted to stabling is thirty by seventy feet. Total area of building, fifty-two by seventy; has capacity for stabling forty-two cows, together with feed, horse-power

machinery for cutting feed, &c.

The root cellar is near the barn, where there is a stream of water convenient for washing roots and watering stock. The siding is of inch pine planed and matched and thoroughly painted. The total cost will vary according to the manner in which it is furnished, say from \$1500 to \$3000.



BASEMENT:—A, alley, 8 x 70 feet; B, stall floor, 4½ x 70 feet; C, ditch or drop, 14 inches wide; D, space or walk; E, stanchions; F, manure cellar; G, piers, 2 x 4 feet; H, columns under cross-sills; W, windows; I, doors.

UPPER FLOOR:—A, floor, 14 feet wide; B, feed holes, 2 x 7 feet; C, hay bays, 14 x 19 feet; D, platform; E, stairs.

Farming for Boys.

BY THE AUTHOR OF TEN ACRES ENOUGH.

CHAPTER XIV.

Harvesting Corn.—Taking care of Blackberries.—Winter Sports and Winter Evenings.—Planting Strawberries and Raspberries.—Getting the best Tools.

It was manifest that this lucky pork speculation had the happiest effect on Farmer Spangler's temper. Heretofore he had merely consented to the various jobs which Uncle Benny had laid out for his party to do, and had never entered kindly into their plans, but had rather objected, more or less strongly, to their being carried out. But the result of their good management, carried on directly under his own notice, where he had a daily view of its progress, and turned to golden account, could not be overlooked, even by one who was so firmly set in the neglectful habits of a lifetime. Thus when Uncle Benny and the boys started off to begin husking, Farmer Spangler volunteered to turn in and help. With so strong a force as they now had, they made short work of a two-acre field.

But Uncle Benny made use of the occasion to point out to Spangler the prominent features of the crop; how that portion of the ground which had received the wash of the barn-yard was of unrivalled excellence. The stalks that grew there had produced more ears, and of better size. Spangler had to admit that it was the best two-acre crop ever raised on the farm. It measured up a little over one hundred bushels of shelled corn,—an amount that satisfied him the boys would be able to pay back all they had borrowed. Besides, it had been cut and stacked in the right time, so as to make the best quality of winter fodder.

This corn crop was, of course, a comparatively small thing on a large farm. But it was really something realized out of nothing,—that is, it was a grain crop produced where nothing but a weed crop had been allowed to grow. It was really so much corn found. If Uncle Benny had not been about, there would have been weeds instead of grain. Its principal value consisted in the lessons of care, economy, clean tillage, and manuring which its cultivation had been the means of teaching the boys, to which may be added the powerful spur it gave to their ambition to do something for themselves. It was one of several subjects to occupy their minds, to think of, and to fill up spare hours agreeably, all having the character of home employments.

Uncle Benny's theory was, as before mentioned, that if a boy's home on the farm were only made attractive, he could never be induced to wander off to the city, or to other equally undesirable locations. He considered the hope of making a little pocket money was one of the greatest home attractions that could be invented, and he was desirous of proving that it could be realized in the country as certainly as in the city. Young people being naturally active, as well as unsettled in their views, may be provided with something to do, something useful, honorable, and profitable.

Spangler continued to assist until the corn was safe in the crib, and the fodder stacked about the barn.

"I don't know what you won't make of these boys, Uncle Benny," he observed, when the job had been completed.

"Why, Mr. Spangler," replied the old man, "these are men in embryo. I want boys to be boys, not old or wise too soon, but giving evidence of being true to themselves and to the wishes of their friends. I like a rough-and-tumble boy, full of fun and spirit. But all such can be trained and taught to become, not only little gentlemen, but to be capable of taking care of themselves. These boys already show the coming manhood in their behavior, and if you do your duty toward them, they may live to be a great comfort to you. If you will let me have my own way with them, at least in some things, I think another year will make a far better show than even this one has done."

"Well, Uncle Benny, I begin to believe it," he replied. "I guess you'd better keep on, and do as you like."

There were several little jobs about the farm which Uncle Benny wanted done before winter set in, as then the boys would be resuming their places at school. One of these was manuring a portion of the great blackberry-patch. He considered the clearing and cultivation of that patch as really a serious undertaking, something a little out of his line, and rather an experiment. He felt, also,

that his character as a teacher of sound doctrine was somewhat at stake, and that on no account must he make a failure. The whole neighborhood was aware of what he had done, and expected to have a good laugh over the bad luck they had promised him; for he well knew that most persons take especial delight in ridiculing whatever looks like a failure.

As to the bushes, he was sure they would produce a large crop, as the blackberry may be said to be an unfailing bearer. But, in addition to securing that, he was desirous of ascertaining whether the wild berry couldn't be very much improved in size by extra manuring. He thought it could; and if that were so, his idea was that the increased price which the improved fruit would command in market would more than refund the cost of manure. It was so with other plants, and ought to be the same with any wild berry.

The boys readily entered into these views, taking it for granted that the old man was right. But Farmer Spangler thought very differently, and concluded it would be a shameful waste of manure. He didn't believe that taking so much pains with wild blackberries would ever come to anything.

But Uncle Benny carried out his project. Two rows received a heavy dressing from the pig-pen; two others were copiously dressed with the green sand-marl of which an abundance was easily and cheaply obtained; and two more rows were dressed with a mixture from the pig-pen combined with superphosphate,—about a barrel of the latter to three or four cart-loads of manure.

That winter the boys spent at school. In addition to all the ordinary topics of conversation which one generation of boys inherits from another, these had a variety of entirely new ones. Uncle Benny had allowed them to buy sundry things which few of their schoolmates had been able to obtain. Each one had a first-rate pocket-knife, containing several blades. Then they had beautiful modern skates, and a fine gun which was owned in common, with shot-pouch, powder-horn, and game-bag. They also had a variety of books, most of them full of handsome pictures; and then Uncle Benny had induced each of his three pupils to subscribe to an agricultural paper.

All these matters, except the gun, they frequently took with them to school, where, during the recess for dinner, they felt proud to exhibit them to their wondering school-fellows, many of whom envied them the possession of so many nice things. They also had long stories to tell about their pigs, their pigeons, their corn, how many dollars Uncle Benny had saved up for them, what they intended doing with the money, and what a great profit they were going to have from their blackberries. When setting forth these things to their schoolmates, as they stood round the stove at dinner-time, especially when telling how much money they had saved, they were often interrupted with the remark, "I wish I lived with Uncle Benny," or "I wish we had Uncle Benny on our farm." These new ingredients toward boyish happiness made that the pleasantest winter they had ever known.

But their new materials for happiness did not cause them to be less attentive to their studies. Though they now and then shot rabbits in the woods, or hawks in the open fields, or spent a half-day in skating on the creek, or catching fish by stunning them with a smart blow upon the clear ice above them, they still kept up with their classes. In the long winter evenings Uncle Benny went over with them the lessons of the day, ascertaining how they progressed, whether they understood what they were learning, and explaining to them the difficult points.

This outside instruction from the old man was a wonderful help, and gave them confidence for their next day's appearance in school. Spangler's daughters shared in the advantages of these evening lectures, while even their father would occasionally put in a word of inquiry touching some uncertain point. This mode of spending their evenings was a great change from what it had been before. Benny took up his residence on the farm. Then it was all dullness and dozing,—now, it was all life and improvement.

Among the articles which Uncle Benny had permitted the boys to purchase was a set of chessmen. He taught them the game; and they, in turn, taught the girls. So fond did they all become of chess, that the board was in very general demand. To relieve this, he made a fox-and-goose board, and added checkers. When the lessons had all been rehearsed, and the difficult points cleared up, then the whole family devoted themselves to reading or to amusements. An abundance of nuts had been gathered by the boys for winter use; and these,

with cider, sometimes terribly hard, were regularly served up. Reading aloud was frequent, both boys and girls being encouraged to improve themselves by practice. Then the long winter evenings were never considered dull.

Uncle Benny had insensibly remodelled the mental habits of the entire family. The girls had procured photographs of themselves, of their parents, and even of Uncle Benny. They had purchased some books, and obtained others from the library. The boys, too, had been allowed to have their pictures taken. All these innocent gratifications came from the trifling fund which their industry on the pigs and blackberries had produced. But, cheap and unpretending though they were, yet they made home bright and cheerful. It was one of Uncle Benny's ways of making farm life and farm labor attractive.

But though the winter was passing with them more pleasantly than ever before, yet it was with renewed satisfaction that the boys beheld the first indications of returning spring. Their pigeons had prospered, their corn crop held out famously, their stock of pigs had been augmented by a new litter of ten, and all had been kept so watchfully that they came through the cold weather in the best possible condition. The boys were thus in high spirits over what the future was to bring forth; their rainbow of hope being gorgeous in its tints, and stretching from horizon to horizon.

Their claim to the two-acre cornfield being undisputed, Uncle Benny had it ploughed up very early in March, as the frost had long since disappeared. Luckily enough for the old man's projects, Spangler was accustomed to keep on the farm so many more horses than he needed, that the former could generally have the use of a team whenever his little jobs required the running of a plough. He first ran it along the corn rows, and loosened the roots; whereupon all hands turned in and gathered them into a cart, and then threw them into a pile in a by-place. They were afterwards composted with sods, by which the decaying process was started, under the operation of which a single year would crumble the whole mass into a heap of good manure, to which marl was afterwards added.

These unsightly corn roots being out of the way, Tony King was able to do the subsequent ploughing very handsomely. Starting with a perfectly straight furrow, he turned over the succeeding ones with beautiful regularity. As most of this section of New Jersey possesses a fine loamy soil, without rocks or stones, a smart and careful boy of his age can do as much work as a man. The field was then harrowed ready for the coming crop.

"What's to go in now, Uncle Benny?" inquired Spangler. "Cabbages, I suppose?"

"Not exactly," replied the old man. "I can't afford to raise cabbages. A bushel of them is worth only half a dollar, sometimes not even that; but a bushel of strawberries, even at wholesale, will be worth six dollars,—twelve times as much. We go in for what will pay best."

"But we never raised strawberries here," rejoined Spangler.

"So much the worse for you. It is high time for some of us to begin," replied the old man.

So Uncle Benny had determined to plant strawberries and raspberries, an acre of each. Money enough had been saved to buy the plants; so they were purchased, and the ground planted. For the strawberries deep furrows were opened, five feet apart, which the boys filled from the great pile of manure they had saved, the value of which they were now able to understand. On this they scattered great quantities of the Rawbone Superphosphate before mentioned, until the surface looked as if there had been a young snow-storm. Then the manure was covered over by turning a furrow from each side; after which the original furrow was reopened. This repeated working completely mixed up the manure and the Rawbone with the soil. The boys thought it more labor than was necessary, and Spangler thought Uncle Benny would never be done getting ready. But he warned them all, that the first condition for success in fruit-growing must be the proper preparation of the ground, and plenty of manure well mixed through the soil.

The plants were then set out by the boys, about twenty inches apart in the rows. Uncle Benny directing. He was too old and rheumatic to do this work himself, but he did the looking on very faithfully until the job had been completed. Afterwards, he had a single grain of the best sugar corn planted between every two strawberry hills, as is the universal custom in this part of New Jersey when a strawberry field is first set out. When the ground has been properly enriched, it is considered a good

practice, as the shade created by the growing corn is useful in protecting the young plants from the hot sun in a dry season, while the corn crop will enable the owner to realize a good sum of money at the same time that his strawberries are being established. A crop of sugar corn, thus managed, will more than pay the expense of getting the strawberries under way.

The other acre was treated exactly in the same way for raspberries, except that the rows were made six feet apart, and the roots set four feet asunder in the rows. The tops were also cut off to within six inches of the ground. Then sugar corn was planted all through the rows, the same as among the strawberries. This arrangement would secure, the very first season, a cash crop from the whole field, at the same time that the ground was being stocked with plants that would pay a much better profit the next season.

As may be supposed, the cost of plants for these two acres made quite a hole in the money saved from the pigs and blackberries. But the boys did not regret this. Their reasonable wants had all been gratified, and under Uncle Benny's exhortations they had lost most of their first itching for immediately spending their money. They had already begun to understand a little of the importance of saving. Besides, when talking over this matter among themselves, Uncle Benny was particular to explain to them that this expenditure for plants, and for the indispensable manure, must not be regarded as an *expense*, but only as an *investment*—that is, something laid out this year to be returned with a great increase in a future one. He showed them that, if they had put out a hundred dollars at interest, they would receive only seven dollars increase at the year's end; but that if they invested it in plants and manure, as they had now done, they would be pretty certain to get the whole amount back in little more than the same period, and still have their plants, as well as the increase, and that this return would no doubt be realized every year thereafter.

Spangler heard this lecture, and observed,—

"Then you think the more money a man spends for manure, the better it is for him? Why, if I were to manure my farm as you do these two acres, the sheriff would sell me out."

"No, Mr. Spangler, he will be more likely to sell you out if you do not," replied Uncle Benny. "You will never get your farm out of debt until you make and buy a great deal more than you do. You are now trying the very worst experiment a farmer can, that is, trying to see how little manure you can get along with. If you would sell half your farm, and invest the money in enriching the other half, you would be far more likely to get along."

But Spangler was not to be moved in his old-time opinions by any exhortations of this kind. It was a greater satisfaction to him to think that he was the owner of a hundred acres of poor land, than to be cut down to only fifty, even if the profit were really more.

As this business of berry culture was a new one on the Spangler farm, and would require the frequent use of hoes, Uncle Benny was thoughtful enough to provide an assortment of new ones of the best quality, with nice, light handles, such as a young boy could labor with and not be tired out under their mere weight. They were fully equal to those Mr. Allen had provided for his boys. He also furnished each with a short, flat file, having a smooth handle and a broad end, which could be safely carried in the pocket, so that there never need be a dull hoe in the field.

When the strawberries and raspberries had recovered from the shock of being transplanted, and were growing finely, the weeds, as if determined not to be outdone, began to do their share of growing also. But the light, keen hoes which the boys flourished about among them made quick and thorough work whenever they poked up their unwelcome heads. The strawberries blossomed finely. Uncle Benny wanted all the bloom clipped off, as he said the plants, not having yet acquired new roots, would have too much to do to recover themselves and bear a crop of fruit also. But Mrs. Spangler and the girls pleaded so strongly with him to let the blossoms remain, so that they could have a little fruit that summer, that he gave way and let them alone. But he was satisfied it would be much better for the plants to be prevented from bearing the first season. As it turned out, there was only a moderate yield of fruit, but yet quite enough to gratify the wishes of the girls. The truth was, that the old man relished his share of the supply about as much as any of the family.

CHAPTER XV.

The old field again.—Poverty a good thing.—Gathering the crop.—A great profit.—Stopping the croakers.—The secret of success.

While these events were transpiring on the two acres, a very different state of things was exhibited on the blackberry field. The plough and cultivator had been several times run over the ground between the rows, making everything clean and mellow, all which had been done by the boys; and now the rows were covered with an astonishing profusion of blossoms. From the long branches, which had been shortened in the fall, a multitude of shoots had grown out, and were now white with bloom. It was a really magnificent display, such as the "old field" in its former days had never presented. One side of it came up to the road fence, so that every one who passed by could look down the rows, and have a full view of how nicely the ground was kept, and of the great promise it gave of a bountiful crop.

Until this season the "old field" had been an eyesore to the neighborhood, giving token of the most slovenly kind of farming. But now it was directly the reverse. Still, of those who saw and admired the change, almost every one had a few words of joking for Uncle Benny and the boys when they saw them cultivating or hoeing in it. The only neighbors who encouraged them to persevere were Mr. Allen and his sons. But such is generally the reward of agricultural effort in any direction different from the old routine. There are plenty to laugh at the pioneer, and few to encourage him.

But every seed-time has its harvest. So this care on the blackberries was about to be rewarded. In July the berries had turned black, and were beginning to ripen. Uncle Benny had carefully watched the gradual swelling of the fruit as it approached its full size, anxious to know whether the cultivated berry would be any larger and better than the wild one. In these examinations he called in the critical eyes of the boys to know if they could discover any improvement over old times. The unanimous conclusion was that there could be no mistake about the matter, and that the berries were certainly larger and better.

Then as to the different manures they had applied. The two rows dressed with marl were excellent, as marl is well known as a valuable fertilizer, though not so quickly showing its effects as some other manures. Those dressed from the pigpen were much better, while the two which had received a mixed dressing of manure and rawbone far exceeded all others. The berries were fuller in size, and Uncle Benny thought they ripened a day or two in advance. These different manures having been applied in the fall, the winter and spring rains had carried their fertilizing juices down to the roots, thus producing an immediate result.

A great many small boxes were procured, each holding a quart, and these were placed in chests or crates which contained some thirty of them. In this condition the fruit was to be sent to market.

It was really a fine sight to behold this blackberry field when it was fully ripe for the pickers. Both boys and girls turned in with hearty good-will at picking; and to these were added a dozen other children about the same age, some even quitting school to secure the high wages that a smart picker can always earn upon a good crop. The price for picking being two cents a quart, it was an easy thing for the smart hands to earn from a dollar to a dollar and a half per day. Such pay, in all the berry neighborhoods, is a most important help to many poor families. During the fruit season the younger members quit all other employments and turn out as pickers, so that there is never any scarcity of help. In fact, Uncle Benny was astonished at the number that applied for employment. They seemed to spring out of the ground, and he was obliged to turn many away.

The old man acted as boss, or foreman; that is, he gave out the empty boxes to the pickers, who filled and returned them to him at his headquarters under the shade of a tree. Here he examined the contents, to see that no green fruit had been gathered, and that each box was full, whereupon he gave the picker a ticket for every box; and these tickets being handed in to him when the day's work was done, each picker's account was quickly calculated. They all received their money, and went home rejoicing.

Though only the common wild blackberry, yet, being put up in clean boxes, they brought a better price than such as came to market in dirty old tin pans and wooden buckets. Probably one lot tasted as good as the other; but the superior style in

which Uncle Benny presented his to purchasers made them sell quickly, as well as bring more than enough advance in price to pay him for his extra care. It is pretty much the same way with all the fruit that goes to market; the careful man gets paid for his care, and a profit besides.

The crops produced nearly four hundred dollars clear of all expenses of picking and taking to market and selling. This result almost confounded Farmer Spangler, who had never dreamed of having such a gold mine in the "old field." He half regretted having given it up to its present management. The news soon spread round the neighborhood, among those who had ridiculed Uncle Benny and the boys about their blackberry patch; for the old man took pains to let all the particulars be known, and the boys boasted of it wherever they went. They completely turned the laugh against the croakers.

But though this large profit had been made, yet a considerable sum had to be refunded to Uncle Benny for expenses incurred by him in clearing up the wilderness of bushes into rows, as well as in providing boxes and chests. But these last were only an investment, not a mere expense. They would all be wanted another year for the same crop, and also for the other berries, and if the boys ever gave up the business, they could sell them for probably three-fourths of the cost. And when these drafts on the sum total of profit had been deducted, there was still about two hundred and fifty dollars left. This Uncle Benny divided into four equal sums, one for Spangler, and one for each of the boys. He then took the latter to a savings-bank, and deposited every one's share in his own name. The boys went along, that they might learn how such things were done, as Tony said he didn't know but they might be wanting to make more deposits before long. They were all quite set up with the idea of having money at interest.

It was not of much consequence, in Uncle Benny's opinion, how small the sum was to each. What he valued most was the fact that he had succeeded in teaching the boys how to farm profitably, to save their profits, and to make a beginning in the science of thriving and economizing. He had allowed them to spend enough to gratify all their moderate wants, such as, when gratified, would make them entirely happy. It was simply the surplus that he wanted them to save, well knowing that, if not put beyond the reach of every-day temptation, it would soon be gone.

There was no denying it that Tony King was prodigiously set up about his share of the general profit; and it was noticed that, in talking to other boys about his good luck, he put on some strange airs of superiority, evidently showing that he began to think himself a little great man among those who had not been so fortunate. Uncle Benny once overheard him at this, and soon put a stop to it.

"I must tell you, Tony," said he, "that great men never boast."

Then on another occasion Tony wanted Uncle Benny to go in and have their brier-patch made three times as large, and they would make three times as much money. But the old man said he didn't know about that; he thought they had as much now, of different things, as they could well manage. They were only beginners, and must move ahead cautiously. He told him that judicious improvement or enlargement must progress step by step, and not by great double leaps as he proposed. They must not undertake too much.

"The fact is, Tony," said the old man, "you are like most others,—you want to undertake too much land. Look at the farm you are living on. Why, our six acres of berries have paid a greater profit than any twenty of Mr. Spangler's. Wait until you grow stronger, that is, until you have acquired some capital of your own; and by that time I hope you will have learned to understand these matters better, and when you do go ahead, to go with moderation."

"Then can't we have a peach-orchard?" rejoined Tony.

"Not yet," replied the old man; "you have your hands full now."

"Then," added Tony with great emphasis, at the same time slapping his hands together, "I'll have a farm of my own!"

"Ah, now you're getting on the right track," rejoined Uncle Benny. "Go on as you are doing at present, and I have no doubt in good time you will have one. What is more, show yourself to be steady, industrious, honest, and obliging, and friends will spring up to give you a lift when you don't look for them."

(To be continued.)

The Household.

Vegetables as Health Preservatives.

BY A FAMILY DOCTOR.

Most of us allow our individual tastes or instincts to guide us, in a great measure, in the selection of the vegetables we partake of at table. Not a bad plan either. The lower animals, even the *Carnivora*, seem to know that certain plants and grasses ought to be partaken of periodically, to keep their blood in a state of purity and their whole system in working order. Such knowledge on their part is innate. But men as rational beings ought, I think, to know a little more than they do about the peculiarities and properties of the various vegetables they use as food. The selection of these is generally left to the cook. The cook knows—traditionally one might say—that certain vegetables go well with certain joints or certain dishes, that it is the time-honored custom to serve this with that.

It is no part of my purpose at present to show how far tradition or precedent may sometimes lead the cook astray, nor have I anything save respect for prejudice or peculiarity of individual taste. On the contrary, I would say that if a person's taste leads him to eschew spinach or parsnips, for instance, he is better without them.

Let me review a few of the vegetables which commonly find their way to our tables, considering more particularly their therapeutical effects on the system.

The first great natural family that I think of is the *Solanaceae*. This family of plants contributes largely to our supply of medicines and luxuries, as well as our food. About the first two named I have nothing now to say, except that it is somewhat strange that such strongly poisonous plants as nightshade and tobacco should be first cousin to the useful egg-plant, the delicious tomato, and that friend to rich as well as poor, the potato, not to mention the capsicum, naturally more used in hot countries than in temperate climes.

The egg-plant should, in my opinion, be used to a greater extent than it is. It is not difficult to cultivate; it is ornamental, and a wholesome and useful vegetable.

The tomato should also be a greater favorite with us. It contains a cooling acid, a volatile oil, some mineral matter and salts, as well as fragrant resinous matter. It is used in soups, ketchups, sauces, and pickles. But inasmuch as the volatile oil—which words I purposely italicise in the sentence—is dissipated by heat, the ripe tomato should, in my opinion, be consumed raw if it is considered palatable—i. e., if it suits the individual taste. N. B.—No attempt should be made by any one to acquire particular tastes, whether for tobacco, strange vegetables, olives, or caviare; to do so is simply to turn one's idiosyncrasy "tapsaltee," to use a most expressive Scotch word. Let, therefore, whoever is fond of any particular vegetable eat freely thereof; it is a food natural to him, a food that suits his system and cannot injure him; what he does not like he ought to avoid; there is no craving in the system for it, no want in his organism which it can supply. I have often observed that people of the nervous or nervo-sanguineous temperament are more partial to Solanaceous vegetables—potatoes, for instance—than those of the lymphatic are. As an article of diet potatoes suit such people, for in addition to their nutrient qualities they contain a certain amount of a property that is singularly soothing to the nerves.

From the natural order *Cruciferae*, we have a whole host of delicious and useful table vegetables. Let me bring a few of these forward for inspection.

As roast beef is an Englishman's favorite dish, I naturally think first of horse-radish and mustard. Both are too well known to need description; the horse-radish is a capital aid to digestion.

Mustard is a good stomachic; the ground seeds are used or the tender leaves in salads. Bearing in mind how much mustard suffers at the hands of the unprincipled dealer, I think it is a pity mustard is not more often grown for table consumption in our kitchen gardens. The seeds of home-cultivated mustard, pounded in a mortar with cream and a little salt added, make a sauce fit for an epicure.

Radishes, when grown on good, not over-rich soil, and when of medium size and perfectly fresh, are among the most wholesome vegetables we possess. They are stomachic and appetising and it should not be forgotten that they possess demulcent and diuretic properties. They are not so

often used boiled as they ought to be. When eaten raw, care should be taken to masticate them properly; "bolted" they are injurious.

Cress, generally called American Cress, is a mild stomachic; it forms a valuable adjunct to a salad. Water-cress is a still more important vegetable, possessing, as I believe it does, tonic properties. It is usually eaten with cheese, but ought to be used with beef and mutton.

The vegetables we usually designate by the name of greens, such as cabbage, kale, brocoli, or cauliflower, sprouting brocoli, Brussels sprouts, &c., are all more or less nourishing, although they contain a large proportion of water. As medicinal articles of diet they are invaluable, possessing blood-purifying properties, for they are antiscorbutic, mildly laxative and diuretic, in some degree tonic, and they have moreover an indirect action on the liver itself. In spring and summer they are especially to be recommended, with this reservation, however—they must not be eaten too freely, or by persons the mucous membranes of whose alimentary canals are too easily irritated. Boiled rice goes excellently well with cabbage or greens of any kind, so does barley.

Spinach, it should be remembered by those fond of it, is laxative in its properties and also highly diuretic. It makes an excellent breakfast vegetable for hot weather, although few people in this country think of cooking vegetables for morning consumption.

The turnip, another of the *Cruciferae*, is far more valuable as an article of diet or adjunct to other food than most people think. It is also more nutrient than is generally supposed, and is valuable as a demulcent. Swedish turnips are usually ignored by the cook; this is a pity; they are better in every way than any other kind. Turnips ought to be well chosen, not too big nor too small; they ought to be gathered fresh, well boiled and well mashed. The green tops of the young turnips are also very healthful and in some degree tonic.

Parsnips and carrots belong to the *Umbelliferae* family, and probably possess in some slight degree the medicinal properties of that family. In addition therefore to being highly nutritious, owing to the large quantity of starch they contain, they are, we may presume, alterative and resolvent. They make, at all events, an excellent change in our vegetable scale of diet.

This is probably the proper place to mention that constant change, in the articles of a vegetable nature which we consume, is as much to be recommended as in those procured from the animal kingdom.

Parsley is another of the umbelliferous vegetables used at table, chiefly for garnishing or stuffing. It is an excellent blood-purifying herb, and deserves to be used far more than it is. It ought to be put in soups and in sauces, eaten raw and eaten cooked. It is well known that parsley chewed sweetens the breath.

Beans of all kinds are nutritious, but people whose digestive organs are not strong should take care how they indulge in them. French beans require to be very tender indeed, and very well cooked, to be safe.

Celery is another vegetable which, though wholesome enough when cooked and mixed in soups, &c., should be partaken of with caution in the raw state, especially by delicate people or those who lead a sedentary life.

Rhubarb is most wholesome; it helps to purify and cool the blood, and to a great extent aids digestion, while at the same time it is healthfully laxative.

Garden lettuce. These vegetables are well known to possess anodyne and narcotic properties. Hence they are best for supper. They should, however, be eaten sparingly, and the younger and fresher they are the better. The older leaves should be rejected as apt to irritate instead of cooling the system.

Asparagus belongs to the *Liliaceae*, which gives us the medicinal squill. It is a delicious and very wholesome vegetable, and contains cooling diuretic properties; indeed it seems to soothe the mucous membranes of both lungs and kidneys, while it acts sedatively at the same time.

Onions, shallots, chives and leeks are all members of the family *Liliaceae*, and are not only highly nutritious when properly cooked, but are possessed in a greater or less degree of cooling and diuretic properties. They are also valuable stomachics and demulcents, but are apt to disagree and should therefore be partaken of but sparingly. They have an effect for good on common colds and slight congestions of the air-passages.

From the natural family *Cucurbitaceae* we get

many valuable vegetables, some of which, as the cucumber, are eaten raw. This latter is, if eaten with pepper and vinegar, a stomachic stimulant, and it also purifies the blood by acting on the secreting organs. It should never be partaken of too freely, even by those whose digestive organs are strong, and by dyspeptics not at all.

There are many other vegetables which I might mention, but space warns me to stay my hand. Let me just say once more, that no one should attempt to acquire a taste for any particular vegetable, but be guided by that which nature has given him; and that vegetables are sure to do good, when partaken of judiciously and not ever-freely. —*Cassel's Magazine*.

Family Circle.

A SOCIETY BARD.

I.

"Well, yes, I am glad to be back in town," said Miss Fillingham as she settled herself comfortably in a deep basket-chair on the veranda and glanced coquetishly at a gentleman who took a seat opposite to her.

"So you've been to Rome?" he asked.

"Oh, yes; we've done nothing but go round churches and museums, and I've hardly seen a soul we know since we left. I never was so tired of anything in my life," she returned with charming frankness. "You see I like people, and papa likes places. Talk about people being monotonous; I'm sure they are as different as can be, and those churches and Madonnas are the same in every town. I always tell papa when he wants me to admire one of those tiresome St. Sebastians with a skewer through him—I mean an arrow, you know—that I saw it in the last museum we went to."

Whereat Miss Fillingham sighed, and Mr. Lovett, the gentleman appealed to, leaned forward on an elaborately carved stick, and smiled what cursory critics might have called a rather self-conscious smile.

On nearer inspection it was clear that he had fine capabilities for being amused, while proclaimed himself in flexible under-eyelids and a remarkably mobile mouth. He had a number of horizontal lines across his forehead and several wrinkles at times in the upper lip. To the more general view he was tall and well-proportioned, exceptionally well dressed, and conspicuous for an elaborate air of attention which he seldom failed to give to attractive women.

The immediate object of his solicitude this morning was dressed with elaborate simplicity in a white dress and broad-brimmed hat, which contrasted strangely with her little pert town-bred air. As she lounged back on her luxurious cushions and glanced with her sleepy Southern-looking eyes at her neighbor, she played with a bunch of ox-eyed daisies in her belt, and tapped her diminutive and coquetishly shod feet on the stone veranda.

They were sitting in the front of a long two storied house, lying in a part of Kensington where there are still acres of gardens to make us forget, in Summer-time, that we are in the largest and most fog-laden city in the world.

Elsewhere there may be the din of traffic, the hurrying of busy feet, the squalor of crowded alleys, the struggle, the hunger and despair which go to make up the lives of toiling millions; here, within snug red-brick walls, a languid quiet prevailed. The splash of a small fountain where the gold fish played, the shrill cry of a parrot, and in the distance, from another lawn, the rhythmic sound of a scythe mowing grass, were the only sounds that met the ear. The bright May sun glanced on the open windows of the long low-lying house, lit up the hawthorn trees ablaze with blossoms, and specked the smooth sweep of lawn with cool blue shadows. Not a murmur from the great city reached this garden, where the birds built and the chestnuts bloomed as if they were leagues from any town.

"There's to be a female friend, a charming friend, to look after us," said the young lady, as they looked out lazily over the sunflecked lawn.

"You are to be looked after—suppose I undertake the office?" returned Mr. Lovett slowly.

"I do believe papa thinks you are going to run away with me," she said, pouting, while he again smiled at her with the same smile.

Mr. Lovett, who had, as a rule, no sort of toleration for silly people, had the weakness to be flattered by this particular form of silliness. He was essentially an opportunist, and it had become a habit of his to luxuriate in any such chance phrases as might be conciliating to his vanity. He was, besides, a gentleman with a subtle appreciation for the harmonies in a situation, and the present one offered him a young lady of the drifting white clouds, the faint splash of the fountain, and the idle May-day. Mr. Lovett was at no time one of those captious mortals who refuse any of the goods that are gratuitously provided them.

"Well, at any rate, Ethel Surtees is coming to stay here," said Susie; "aren't you glad? It's no use saying you're not, because I know you are."

"Of course any friend of yours I am always delighted with," he replied in stereotyped phrase, while his mind, with one of those quick transitions usual to mobile natures, gave a sort of bound back into the previous Summer.

Ethel Surtees. The name suggested a time of roses, of soft Summer nights, and Summer stars, and eyes that looked at him with a grave gray light. Those were connected with emotions too, if not of another kind, at least of another degree.

It was with almost an unreal feeling that he jumped up the next minute, at Susie's bidding, to find her parasol.

Miss Fillingham was an only child. Her father, a busy man, an architect at the top of his profession, spoiled her in a careless, off-hand way, and Mrs. Fillingham, a capricious and tearful invalid, was severe and over-indulgent, with the usual captiousness of ladies who live in over-heated rooms and are seldom out of the doctor's hands. Her daughter paid little attention to either mood. The only person indeed of whom she stood in any sort of awe was her cousin—a girl three years her senior. Susie Fillingham had been educated with Ethel Surtees, so that they had a further warrant for intimacy than their cousinship afforded, and so great was the influence which the elder girl exercised over the younger that Mr. and

Mrs. Fillingham had more than once offered Ethel a permanent home within the comfortable red-brick walls of Kensington.

Ethel Surtees, however, was a girl not cast entirely in conventional lines, and may have had her own notions as to the grace of leaving her father, to whom she was sincerely attached, for the sake of luxurious surroundings. Her mother, Mr. Fillingham's sister, had, a quarter of a century before, made a romantic match by running away with the curate of a neighboring parish, a piece of disinterestedness for which certain members of her family had never forgiven her.

Mr. Fillingham would, however, have nothing to do with the feud, and by the time Ethel was ten years old, offered to educate her with his own little daughter.

Thus it was that the Fillingham household became part and parcel of Ethel's girlhood. Her father in the meantime obtained a small living in the country, so that by the time Ethel had come to years of discretion she was able to go back home and assist in educating the numerous small fry that clamored about the vicarage. From this unthankful task she found relief in an occasional visit to Kensington.

The Summer before she had spent six weeks of the season with Susie Fillingham, and at a certain artistic house in Bloomsbury had been presented to Mr. Lovett, the "new poet," as the enthusiastic hostess whispered to Ethel. The "new poet," of whom Ethel had never heard, was agreeably attentive, and on another occasion succeeded so well in amusing her cousin Susie that he was asked to come and pay them a visit at Mona Lodge.

Mr. Lovett was not long in availing himself of this permission, and before many weeks had passed had become tolerably intimate with every member of the family. He talked art, smoked cigars with Mr. Fillingham, approached his wife on the rare occasions on which she appeared with an air of sympathy and deep interest, and while making himself agreeable to Susie, found time to bestow no inconsiderable amount of attention on Miss Surtees.

There was a something in this young lady that flattered him, and a grace in her that appealed to a sentiment that perhaps he had too much neglected.

Lovett was a man who had enjoyed for the last few years sufficient income to permit of meandering propensities, and just enough lyrical talent to figure in monthly magazines, and assume the convenient irresponsibility of a bard. He was of a nervous temper, subject to whims and caprices, which he humored to their highest bent. Perhaps, like men of greater power than himself, he thought it a sign of originality to be unlike other people.

II.

At the end of the week Ethel Surtees arrived, and although they had already been forewarned that she was far from well, her relations were surprised at her appearance. She had grown thinner since the previous Summer, looked tired, and was much more fatigued than the short railway journey warranted.

Mrs. Fillingham, who had especially invited her niece on this occasion, was languidly horrified from her sofa, and made immediate and profuse offers of her scent-bottle, the family physician, and her last pet remedy for spasms.

She was a lady who indulged in a profound pity for herself, and in consequence—like a pale reflection—extended a mild kind of pity to the rest of suffering womankind at large.

It is impossible to say what mysterious concoctions Mrs. Fillingham would have induced her niece to swallow, had not her own symptoms at the juncture taken a new turn.

"It's the Spring, of course, my dear," she said, "which makes you so ill—it always acts on delicate people in that manner. I myself as a girl always suffered in the first warm weather."

She had a fancy for living in rooms with a regulated temperature, and by the aid of the thermometer, which always hung by her bedside, discovered that her rooms were three and a half degrees too warm. The consequence of this was that the poor lady immediately imagined she had a feverish attack, and began to be ill in consequence of the fine weather.

In the meantime Ethel was free to please herself in her movements, and a day or two after, finding her cousin closeted with her dress-maker, started alone for a walk. She enjoyed open-air exercise, and it was with a peculiar feeling of elation that she turned her steps this morning in the direction of Kensington Gardens.

Hardly more than a hundred yards from the house she encountered Mr. Lovett. He crossed the street on seeing her, and, throwing his cigar away, came forward and took her hand with a kind of tender appropriating caress. It was the work of an instant, but he had found silence, used with discrimination, more subtle and less compromising than words.

With women his hand-shake was tender, appealing, even supplicating when required. The curious mobility of the whole man was such that he actually was for the moment what he seemed, so that there was a genuine air of sincerity about him which made him seem what he was not.

"I am going for a walk," said Miss Surtees simply, after a moment's pause.

"I was just going up to call—I mean I was going for a walk too," he answered promptly, while he was secretly approving of a combination of sunlight and ruddy hair. "Now, there's only one good walk, over in Kensington Gardens, you know, past the fountain."

"So that there is a possibility of our meeting?" she rejoined with some amusement, as she turned to walk down the street.

"You are not frightened of me, surely?" he asked in rather a nettled tone.

"Not in the least," she answered serenely. "I believe you to be the most harmless of mortals."

But in spite of this assurance she gave her attention to the handle of her parasol.

"Exactly, I'm warranted innocence itself, so I may be taken with impunity."

"Why, I can't forbid your walking down the street," said this difficult young lady, moving off; "the pavement is not mine."

"I suppose," said Lovett, smiling, "if I persisted you could have me up for a public nuisance?"

"Why, no," she returned, "I should set you down as a private one."

But in the meantime they were well on the way.

Ethel's favorite seat under a clump of trees lay in a comparatively deserted part of the gardens.

The grass was green with all the freshness of Spring-time, while an agreeable warmth in the air suggested the coming Summer.

"I'm glad I thought of coming out," said Ethel, apropos of nothing, while admiring the faint blue of the sky.

"Ah," exclaimed Lovett, giving the remark a satisfactory turn, "do you remember that morning when I discovered you here, one day last Summer?"

"Yes, I hurt my foot; do you remember? I thought I was going to faint, or do something silly," she said.

"I wish you had—I mean something silly, not fainting."

Then ruefully: "You didn't seem to mind me then?"

"I don't mind you now," answered Ethel with attempted indifference, turning away.

"You never speak to me now—you were so good at first," said Lovett; "but you have a—what shall I call it?—a serenity in yourself that asks so little of others."

"It is the profession of maidens to be discreet," said the girl looking down.

"A man must be wretched to himself, I suppose, and pass his life in discussing the weather," groaned her exquisitely attired companion.

"Are you wretched?"

"When you make me so."

"How do I make you so?"

"By a tone—a turn of the head."

"Ah! but they are involuntary, I suppose," said Ethel, "and that cannot be altered."

"It might if you were to try," he returned. "Will you tell me something I want to know?"

She nodded.

"You told me once that men—society men—were superficial; do you fancy that none of them think or feel?"

"I may have said that men were superficial, but that perhaps was not what I meant altogether to say. I think that perhaps was not what I meant altogether to say. I think that perhaps was not what I meant altogether to say."

"We say we have learned the nothingness of all things, and we must grasp what is within reach before it passes by; but, you see, happiness is the one thing that will not come for the asking, and we sacrifice our happiness to grasp at a momentary pleasure."

"Pleasure after all is only given for a moment, and moments are given for pleasure," said Lovett with a touch of sensuous sadness.

"Do you think we were put into the world to be miserable?" he went on more argumentatively. "A man in a bilious attack must have invented the idea. We are always being told to be contented, and then the next minute we are enjoined to look and strive only after another world. What do the best of them know? We do not know what to-morrow will do for us; how can we be sure of eternity? What we do know is that the sun sets in a beautiful woman's eyes. This she ages have unfolded to us; but eternity may never give it to us again!"

He had risen to his feet, and was standing in front of her. A light shiver passed over the girl.

"I must not—dare not think so of life."

"We are a little vain dust, your prophets say; let us lie still then; the sun will not shine on us assuredly, and the Summer will come with roses and sweet scents. Life is ours whether we will or no, and this is life. Time may have nothing more to give us; are we to sacrifice ourselves for time?"

He saw that she trembled, that the color had gone from her lips.

"To live," he murmured, sinking to her side, "is to droop at another's feet—to note one's passion on another's lips, to read one's heart-throbs in another's eyes. Here we know ourselves at last—doubt is ended—peace is ours on into the everlasting night."

Mr. Lovett's ideas, it will be observed, were what people call "advanced."

Ethel was very much perplexed; but young women like to be mystified.

(To be continued.)

The Farmer's Wife.

"Oh! give me the life of a farmer's wife,
In the fields and woods so bright,
Among the singing birds and the lowing herds,
And the clover blossoms white.
The note of the morning's heavenward lark,
Is the music sweet to me;
As the dew flowers in the early hours,
The gems I love to see.

"Oh! give me the breeze from the waving trees,
The murmur of summer leaves;
And the swallow's song as he skims along,
Or twitters beneath the eaves!
The plowman's shout, as he's turning out
His team, at set of sun.
Or his merry 'good night,' by the fire-fly's light
When his daily work is done.

"And give me the root and the luscious fruit,
My own hands rear for food;
And the bread so light, and the honey white,
And the milk so pure and good!
For sweet the bread of labor is,
When the heart is strong and true,
And blessing will come to the hearth and home
If our best we bravely do."

A rather seedy-looking customer entered a restaurant one hot day, and asked to see the proprietor, who was summoned to appear. "What do you ask for a nicely cooked beefsteak, well done, with onions?" "Twenty-five cents." "And the gravy?" "Oh, we don't charge anything for the gravy!" "You don't? That's liberal! How much do you charge for bread?" "We throw in the bread?" "Is it good bread?" "It is." "So you throw in bread and gravy?" "Certainly." "Then bring me some bread and gravy. It's not healthy to eat meat in summer."

Minnie May's Department.

MY DEAR NIECES,—Perhaps a few hints about travelling may be acceptable to some of you who are contemplating a trip during these pleasant summer months. First of all, let me entreat you to take as little luggage as possible. If merely travelling from place to place, one requires but little, so that with a portmanteau and hand-bag you feel more comfortable and independent than when burdened with the care of trunks. About the contents of the portmanteau, always have a fair supply of underlinen, as it may be difficult to have your washing done regularly. Then, unless you are going to visit friends, or to make a long stay in any place, two dresses are quite sufficient. One a good, thin serge, or some equally strong and light material; on no account let it be a warm or heavy one, as it will not do to wear on all occasions. It should be as plain as possible, but stylish. Brown, dark blue or grey are the best colors, as they do not show the dust so quickly as very light colors. The other dress should be rather more elaborate, one that would be suitable for dinner at the hotels, or the promenade at a fashionable watering place. This same dress can be transformed into an evening or concert dress by the aid of some good lace and natural flowers, which are easily obtained anywhere at this time of the year, and nice evening gloves.

The bonnets are next to be considered. The travelling hat should be small and soft, so that it will neither blow off easily nor crush if you chance to fall asleep in it in the train. Let me warn you not to use feathers as a trimming for this hat, as they so easily come out of curl when exposed to the dampness, which you are sure to encounter more or less when travelling. The other hat should also be rather small, for the simple reason that large hats are the most awkward things possible to pack, and take up a great deal of valuable room. It should contrast well with the promenade dress.

Strong boots or shoes, in which you can venture out in bad weather, are a necessity.

Now about wraps. A light mantle will be required for cool days or evenings. An ulster or rubber circular is also necessary for wet weather, and one requires a shawl when travelling at night.

The hand-bag is convenient for holding small articles of toilet to use while travelling, such as a linen bag containing brush and comb, a clothes brush, which is constantly required, a box of soap, a small bottle of Eau de Cologne, a small towel and an oil-cloth, sponge bag containing a sponge, which should be thoroughly moistened before starting on a long journey. These articles are covered by the night-dress case, then there will be room for a book, a case for needles, cotton, tape, buttons, etc. You should also have a strap to fasten any wraps or parcels to the bag, so as to have only one thing to carry. Do not forget to take a small umbrella, which will answer either for rain or sun.

Of course if any of you are going to remain long in one place you cannot get along with so scanty an outfit, but must be governed by your own common sense.

MINNIE MAY.

Recipes.

GENERAL HINTS ABOUT JELLIES AND PRESERVES.

Marmalades require constant stirring.

Boil without covering, and very gently.

Jellies and jams must not be covered and put away until cold.

In making jams, boil the fruit fifteen minutes before adding the sugar.

All jelly should be made over a moderate fire, and be carefully watched and skimmed.

In making preserves there must be no economy of time and care, and the fruit must be fresh.

It is well also to heat the sugar before it is added, as in so doing the boiling process will not be interrupted.

In all cases it is best to boil the juice fifteen minutes before adding the sugar, thus insuring the necessary evaporation and avoiding the liability to burn it.

A flannel bag is best for straining jelly. If possible avoid putting jelly in any stage in a metal vessel. For every pint of strained juice allow a pound of sugar—granulated is the best.

CRAB APPLE JELLY.—Procure the Siberian Crab, pick out those that are perfectly firm; wash in water and pour over them just enough water to cover; let them cook until soft; then strain into a jelly bag; add one pound of sugar to one pint of juice; let boil twenty minutes.

TO CAN PEACHES.—Pare and halve the peaches; and to every pound of fruit allow a quarter of a pound of sugar; make a syrup of the sugar and some water; then cook the peaches until they can be easily pierced with a darning needle or straw; place in jars and cover with the syrup, and seal immediately.

PICKLED CHERRIES.—Take nice, large, ripe cherries; remove the stones; take a large glass jar and fill two-thirds full of cherries; then fill up with best vinegar; keep it well covered; no boiling or spice is necessary, as the cherry flavor will be retained and the cherries will not shrivel.

SPICED PEARS OR PEACHES.—Ten pounds of fruit; five pounds of sugar; one-half pint of vinegar; mace, cinnamon and cloves tied in a bag; boil the pears until clear; then scald thoroughly in the syrup; boil it down, and pour over the pears.

GRAPE CATSUP.—Five pounds of grapes boiled in a little water and put through a colander; three pounds of sugar; one pint of vinegar; one tablespoonful of ground cloves; one of cinnamon; one of pepper; one-half tablespoonful of salt; boil until a little thick; bottle and seal.

TOMATO CATSUP.—One gallon of tomatoes; one pint of vinegar; two tablespoonfuls of salt; two of black pepper; two of mustard; one of cloves; one dozen onions, sliced fine; boil all together till quite thick; strain through a colander; bottle and cork tight, and keep in a cool place.

ELDERBERRY WINE.—Boil three gallons of elder berries in two and one-half gallons of water for 20 minutes, then strain through a fine sieve, not bruising the berries; then measure the liquid into a boiler, and to every quart add one pound of moist sugar and the peel of four lemons; place on fire and heat scalding hot; add the whites of four eggs well beaten, stirring into the liquid. When the liquor is cool place it in a keg; place a piece of toasted bread, spread with compressed yeast as you would butter in the keg; bung the keg air-tight; $\frac{1}{4}$ of a pound of bruised ginger placed in the keg gives the wine a fine flavor; let it remain in the keg from six to eight weeks, when it will be ready to bottle.—R. H. S.

To Prevent the Skin from Discoloring after a Blow or Fall.

Take a little dry starch or arrowroot, and merely moisten it with cold water, and lay it on the injured part. This must be done immediately, so as to prevent the action of the air upon the skin. However, it may be applied some hours afterwards with effect. I learned this when resident in France. It may already be known here, but I have met with none among my own acquaintances who seem to have heard of it. Raw meat is not always at hand, and some children have an insurmountable repugnance to let it be applied. I always make use of the above when my children meet with an accident, and find that it keeps down swelling, and cleanses and facilitates the healing of scratches, when they happen to fall on the gravel in the garden.

Answers to Inquirers.

MINNIE G.—If a call is made upon you when visiting in a strange city, which you had not time to return, the most polite thing to do, under the circumstances, would be to write a note of explanation to your visitor. If you are in the same city again, it would be most courteous in you to pay a visit without waiting for one of greeting.

COUNTRY MAID.—1. Your brown and white striped silk will make up very nicely by combining it with brown cashmere of a light quality or nun's veiling. 2. Girls of fourteen should wear their dresses slightly below their ankles. It is not considered in good taste for young girls or children to wear their dresses as short as they formerly did.

TRUE BLUE.—1. There is no rule in regard to the style of engagement rings, the selection being governed entirely by individual taste. It would be nice to have the two initials and the date of the engagement engraved inside. 2. Plaques and fancy china plates are most decorative in effect when hung against the wall. Statuettes look pretty on tiny brackets covered with plush or velvet. The brackets could be made of ordinary pine wood. 3. There is no reason why a widow should always dress in mourning or wear crape, unless she so desires. There will be no impropriety in her wearing colors, after being in mourning five years.

The White-Footed Mouse, or Deer Mouse.

There are many persons who believe that all mice found in the fields and meadows are simply "house mice which have run wild." On the contrary, they differ so widely that they can not even be admitted into the genus *mus*, to which the common mouse belongs.

The white-footed mouse is the *Hesperomys leucopus* of modern zoologists. Some have seen fit to include in it a subgenus *vesperimus*. It was first discovered by the eccentric French naturalist Rafinesque as the *Musculus leucopus*. The meaning of the word *Hesperomys* is evening mouse, and of *leucopus*, white foot. This species can be distinguished from the other mice of our fields and woods by the following description: Ears large; tail slender, about as long as the head and body, and thickly clothed with short hairs, no scales being visible like those of the common mouse. Color of the body above, yellowish brown to gray; feet and lower parts of body, white. Tail distinctly bi-color; that is, its upper part is the color of the back, and the lower portion white. Length of the head and body, $2\frac{1}{4}$ to $3\frac{1}{4}$ inches; length of tail generally equaling the length of the head and body.

The white-footed mouse is agile in its movements, and is an expert climber. The first nest of this species I met with was in a hollow stump, and was of a rounded form, and composed of leaves, grasses and moss. They also nest under stone heaps or logs, or in the ground. It generally builds its nest in thick brier bushes, several feet from the ground. These are made also of moss and leaves, but are interwoven with strips of fibrous bark, probably of the wild grape vine, to make them stronger and more secure. The hole or place of entrance to the nest is always at the bottom. These nests at a first glance may readily be mistaken for those of birds. On shaking the bush or nest you will see the little intruder come forth and rapidly descend to the ground, and conceal themselves amid the bushes and grass. Sometimes you will observe several young adhering to the abdomen of the mother. These she assists in keeping their hold by pressing her tail against them as she climbs down the stems of the briars. The female produces young two or three times during the spring and summer, having from three to six young at a birth.

It has a habit of laying up little stores of grain and grass seeds. They are generally composed of wheat. It is also fond of corn, but eating the heart only and leaving the rest untouched. This species is sometimes accused of destroying cabbage plants and other young and tender vegetables, and of gnawing the bark from young fruit trees. It is doubtless that this species is sometimes to blame, but the greater amount of this damage, I think, is caused by the meadow mouse and the so-called "pine mouse."

The white-footed mouse is of crepuscular and nocturnal habits. Many of them fall prey to the different species of owls, notably the screech owl, as the bones and fur of this mouse found in their ejected pellets clearly show. It has a wide geographical range, being found from Nova Scotia to Florida, and west to the Mississippi River, and perhaps far beyond.

Advice to Wives.

Wives often regret that their husbands do not talk to them. This is not the place to discuss the short-comings of a man, but sometimes when I have listened to the fault-finding, the garrulous repetitions, frivolous details, the childish exactions of sympathy and attention with which some women bore their husbands when they are overburdened and anxious with care and work, I have not wondered that some men grow taciturn in their homes. But it is a great loss if a man is silent among his wife and children. The husband and wife live so much of the time in a different world that a free intercourse can be a great help and pleasure to each of them.

You will not be likely to make a man talk by telling him that he ought to talk, or scolding him because he does not do so. Make it a pleasure for him to talk with you. Exercise good sense, good temper and tact in drawing him out on topics of interest to himself. Be patient under his moods.



THE WHITE-FOOTED MOUSE, OR DEER MOUSE.

BRUNETTE.—1. A pretty present for the gentleman would be a set of linen or silk handkerchiefs, having his initial embroidered upon them; or a handkerchief case made of satin with a quilted lining. Mingle fine perfume with the wadding, and either paint or embroider the initials on the top. 2. It is not a breach of etiquette to speak of the beauty of any articles in the room to your hostess; instead, it is frequently done in the best society.

W. O. L.—1. Letters of introduction are usually sent by messenger or post with a card, showing where the introduced is staying. They should be acknowledged by a visit or by a written answer within two days, stating why a visit is not made. 2. In ordinary conversation there is no necessity to add "Sir" or "Madam" when answering a question, unless to a person your senior; but it is always well to remember that one had better be too formal than be considered rude.

M. A. C.—1. When a gentleman escorts a lady home, it is not only polite but it is her duty to thank him for his courtesy. 2. A black dress comes out best in a photograph. 3. Neuralgia generally proceeds from weakness of the nerves. Bathing the face and behind the ears well with cold bay salt and water is very beneficial, and you should take some strengthening medicine.

of silence. Be deserving the companionship of a sensible man. Avoid talking of persons, or insignificant details concerning yourself or your work. Have something interesting or valuable to say. The story of your child's prattle may be full of interest. The number of pies you have made, or the rooms you have swept, may not be worth repeating. Cultivate the graces of character, speech, and tones of voice, and you may find that the man who was glad to escape from the loquacious, complaining, exacting woman, goes reluctantly from her who knows when to talk and when to be silent, "who denieth her mouth with wisdom, and in whose tongue is the law of kindness."—*United Presbytery.*

The Great Wall of China.

An American engineer, being engaged in the construction of a railway in China, who has had unusually favorable opportunities of examining the famous Great Wall, built to obstruct the incursions of the Tartars, gives the following account of this wonderful work: The wall is 1,728 miles long, 18 feet wide, and 15 feet thick at the top. The foundation throughout is of solid granite, the remainder of compact masonry. At intervals of between two hundred and three hundred yards towers rise up twenty-five to forty feet high, and twenty-four feet in diameter. On the top of the wall, on both sides of it, are masonry parapets, to enable the defenders to pass unseen from one tower to another. The wall itself is carried from point to point in a perfectly straight line, across valleys and plains and over hills, without the slightest regard to the configuration of the ground; sometimes plunging into abysses a thousand feet deep. Brooks and rivers are bridged over by the wall, while on both banks of larger streams strong flanking towers are placed.—*Scientific American.*

A Beautiful Tribute to Women.

Place her among the flowers, foster her as a tender plant, and she is a thing of fancy, waywardness and folly—annoyed at a dewdrop, fretted by the touch of a butterfly's wing, ready to faint at the sound of a beetle or rattling of a window at night, overpowered by the perfumes of a rosebud. But let a real calamity come, arouse her affections, enkindle the fires of her heart, and mark her then? How strong is her heart? Place her in the heat of battle, give her a child, a bird or anything to protect, and see her in a relative instance lifting her white arms as a shield, as her own blood crimson her upturned forehead, praying for her own life to help the helpless. Transplant her to the dark places of the earth, call her energies to action, and her breath becomes a healing, her presence is a blessing. She disputes inch by inch the strides of stalking pestilence, when the strong, the brave, the noble, pale and affrighted, shrink away. Misfortunes haunt her not; she wears away a life of silence and endurance; and goes forward with less timidity than for her bridal. In prosperity she is a bud full of odors, waiting for the wings of adversity to scatter them abroad—gold, valuable but untried in the furnace. In short, woman is a miracle, a mystery, the center from which radiates the charm of existence.—[Mulford.]

The Way to Look at It.

In all labor there is poetry, if we can but find it, containing its deepest meaning and its truest realities. One mechanic sees nothing beyond his tools and their daily use; another beholds the civilization or refinement which his work is daily spreading. One merchant measures his business only by the yearly account of profit and loss; another sees it in the extent of commerce, the employment is given to labor, triumph of honest principles. One physician looks at his profession only as a ladder for his own advancement and popularity; another beholds suffering assuaged, diseases overcome, sanitary habits entored, healthful living secured, happiness increased. One woman sees in her house only an area of hard work and physical comfort; another sees exquisite pictures of possible hapiness, honor, development and value which may be cherished with it, and may issue from it to bless society and strengthen the nation.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES,—This month I am going to make a few references to the flood which has lately done so much damage to those dwelling on the low banks of the Thames in the vicinity of this city. We had been having a very wet period, which culminated in a tremendous rainfall on the night in question. More rain fell in four hours in that night than usually falls in a couple of months, three inches being about the amount of water falling in that short space of time. This gathering into the creeks and small branches, rushed wildly into the larger streams, through which, in company with miles of fencing and numerous smaller bridges, it was directed to the main artery, the Thames, which was in an incredibly short time transformed from the usually peaceful stream into an almost irresistible torrent with waters almost sixteen feet above its ordinary level. The flood was worst felt in a village opposite London, known as London West, situated in one of the angles of the two large branches of the Thames joining here. This village is situated on rather low ground for over a square mile of its extent, and is covered by cottages of over two thousand of the mechanics and laborers of London, who had been attracted there by the light taxation, the fertility of the soil, and its proximity to the business part of the city. The result was a thriving village with well laid out streets, sidewalks, many stores, and pretty gardens. Such it was before the flood. The first intimation of the flood to many was the



8.—ILLUSTRATED REBUS.

water rising up to their beds, so sudden was the rise of the water. All, at any rate, were compelled to leave everything down to the mercy of the water, while they took refuge in their second story or where compelled to cut holes in their roofs and on them wait for day and rescue. Even the roofs were scarcely safe, as many houses were overturned or carried off entirely by the force of the current. As soon as possible boats were launched from the city and taken to the rescue of those in the most dangerous positions, but not, however, before nineteen persons had passed to their long sleep. I have not space to give you any of the details or relate any of the brave actions of the rescuers, but must confine myself to the barest outlines. Many of you have read long accounts in the papers; some of you in the distance know nothing of it. For them this is written. The water subsided during the ensuing day almost as fast as it rose, and by the next evening the water was again in its natural course, leaving the previously pretty village in a sad state of ruin; families in some cases broken up, fences gone, gardens spoiled, houses wrecked, furniture either gone or almost unrecognizable in the mass of mud and slime which had been deposited in the houses. Such was London West after the flood.

Of course, after such a misfortune many were left in a very bad state, and had to depend upon the generosity of the community, and it appears to me that the people here have never appeared in a better light than when nearly \$20,000 was collected within a week. Many outside corporations and individuals, as well as the Government, have sent in very valuable assistance, but yet very much could be done if means were at hand.

UNCLE TOM.

PUZZLES.

1.—ENIGMA.

My first is in boy, but not in girl,
My second is in rabbit, but not in squirrel.
My third is in wall, but not in door,
My fourth is in window, but not in floor.
My fifth is in horse, but not in cow,
My sixth is in hoe, but now in plow.
My seventh is in barn, and also in stable,
My eighth is in dish, but not in table.
My whole I have not got it, nor I don't want it; but if I had it I would not take the whole world for it.

CHARLES FLEMING.

1.—DECAPITATION.

Whole, I am a rank; behead, and I am a girl;
behead again, and I am a useful animal; curtail,
and I am an adverb.

HARRY A. WOODWORTH.

3.—REBUS.

D
B A Y
HARRY A. WOODWORTH.

4.—RIDDLE.

A word of one syllable, easy and short,
Reads backwards and forwards the same;
Expresses the sentiment felt by the heart,
And to beauty lays principal claim.

HARRY A. WOODWORTH.

5.—TRANSPOSITION.

Rorsre ekil sartws nupu eth cuesfar ofwl; eh
owh dwlou hreacas rio sresuaret mtus ediv lwebo.

MAGGIE F. ELLIOTT.

6.—CHARADE.

Of all things I am most precious,
To stay my flight is vain;
And any part of me once lost,
Is never found again.

ADA ARMAND.

7.—SQUARE WORD.

1. A verb. 2. The name of one of the first men mentioned in the Bible. 3. The name of a certain meat. 4. The name of a girl.

AGGIE CALDERWOOD.

Answers to July Puzzles.

- 1.—Nightingale.
- 2.—Carpet.
- 3.—Madam.
- 4.—

I D E A
D E A L
E A R L
A L L Y

- 5.—Keep no more cats than will catch mice.
- 6.—Whereunto is money good?
Who has it not wants hardhood;
Who has it has much trouble and care;
Who once has had it has despair.
- 7.—

T
S H E
S P E N T
T H E A T R E
E N T R Y
T R Y
E

Names of those who have sent Correct Answers to July Puzzles.

Maud Dennee, Esther Louisa Ryan, Aggie Calderwood, R. J. Rick, Emma Wilson, Annie Wilson, Mary J. Cooper, Henry Stone, Richard Kingston, P. Boulton, Fannie Burton, G. Van Blaricorn, Annie Russell, Henry A. Woodworth, John Wm. Forbes, Addie V. Morse, Ellen D. Tupper, George W. Finnemore, Mary B. Currie, Sarah Butt, Robert Wilson, Frank Booth, Aggie Calderwood, Charles Fleming, Maggie F. Elliott, Ada Armand, W. Simpson, Calvin Craig.

To a widower: "Is it true that you are going to marry again?" "It's very true." "And whom do you marry?" "My dead wife's sister." "Is she handsome?" "No." "Rich?" "Not at all." "Then why have you chosen her?" "To tell you the truth, my dear friend, in order not to change mother-in-law."—[Paris Journal.]

Unselfish Children.

"A Letter to Young Mothers," in Scribner's Monthly, taking for a text the remark that "always to receive and never to give is as bad for children as for grown people," offers the following suggestions: To be sure, there is not much they can do for you, but what they can do is worth very little in itself, but just because it develops a generous thoughtfulness for other people's pleasure. Children are naturally generous, and delight to make and give presents, until they see their gifts considered as rubbish. Probably they are, but a great deal of love can be put into very common things. You keep their birthdays. Encourage them to remember the birthdays of the older members of the family, even if their celebrations are troublesome and their presents useless. In the family festivals let them have something to do for somebody else. Do not let the doing be always on your side.

I saw a birthday celebration once, and I shall never forget it. The mother's birthday had come too soon for the child's calculation, and there was no preparation made. The oldest, a sensitive, loving child, of seven years, was overwhelmed with grief, and sobbed, "Mamma is always giving us something, and giving up things for us, and now we have forgotten her. Oh! dear, dear!"

Close by stood a little basketful of stones, picked up in their afternoon ramble—just such stones as you can find in any New England pasture lot, or by any stone wall. But the white, imperfect quartz crystals and the shining little bits of mica seemed very beautiful to the child. Suddenly she noticed the basket. There was a hurried consultation with the younger sister, a great parade of secrecy and business, a rattling of stones in the kitchen wash-basin, and much dancing about and shouts of "Now, mamma, we've got something for your birthday. Don't look in that basket! Now, don't guess—oh! you never can guess what it is!"

The next morning at breakfast there was something on mamma's plate, heaping up the napkin so carefully spread over it.

When the napkin was lifted there was nothing but the heap of shining stones, but the children were as happy as if they had been gold and diamonds. Said the youngest: "Mamma, I picked up the very prettiest the very whitest and shiniest;" and the oldest added, "We washed them just as carefully last night."

The father said afterward:

"They came to me in the evening in great glee, for now they had something for mamma, and they showed me the stones, all wet and dripping in the basket—about as pitiful a thing for a present as could be imagined."

A trifle, you say, but the love and delight that went with that worthless little pile of stones could not be counted by dollars. No wonder the mother's eyes grew dim, as she looked from the stones heaped upon her plate to the glowing faces of her children, and that she carefully put the stones away. Trifles like these are the very dearest of treasures to a mother's heart, if some day the bright eyes that shone with delight are forever shut from her sight, and the busy little hands are folded still and cold.

You never know how long you and your children will have each other. At best they will not be little children always. Make the life which you live together as happy and as full of yourself as possible, if you can do but little. It is worth a great deal to have them grow up with the habit of being happy. If this habit comes—not because

every wish is gratified, but because they are always busy at some cheerful or helpful work, never fear that they will grow up querulous and selfish. Children so trained are apt to fall into fashionable listlessness, or to give themselves up to idle grief, if disappointment and sorrow come into their mature lives.

The Cruise of the Sunbeam.

Archie bends over the streamlet,
Launching his little boat;
As smart a craft is the Sunbeam
As any ship afloat.

Tapering masts, blue ribbon
For a pennon, streaming bright—
Jib and snowy mainsail
Gleam in the soft sunlight.

Past the blossoming meadows
Gaily the Sunbeam glides;
Past the reeds and lilies,
Over the waves she rides.



THE CRUISE OF THE SUNBEAM.

Fast on the bank runs Archie,
Fast as his feet can trip;
His heart in his eyes—all eager
For the fate of his little ship.

Ah! she strikes on the rocks, oh, terror!
She is wrecked, she is lost! No, no!
She rights, and with sails spray-sprinkled,
Merrily on, yeo-ho!

With fluttering sail and pennon,
Steadily onward still;
Till the Sunbeam finds safe harbor
In the port below the mill.

Archie will be a captain,
And sail to distant seas—
God keep you safe, dear Archie,
And send the prosperous breeze.

To blow your vessel gaily
Across the tossing foam,
And safe from every voyage
Bring ship and skipper home.

—[Little Folks.

Do Something.

A certain man who lost his property, instead of sitting down in despair or seeking to drown his troubles in strong drink, went out on the street and agreed to do the first work he could find. It was shoveling coal into a cellar. He performed his humble task promptly and faithfully, took his pay and walked on. In a short time he was on his feet again financially, as he deserved to be, and as the people saw he was worthy of being. The following advice by the Christian at Work is to the point:

"It was a monk just before Luther's day who said, 'I assure you, my hearers, if I could not preach I should be proud to make shoes; and if I made shoes, if I could help it no one should make a better pair than I.' What a manly thing that was to say, and how much the lesson is needed today. Look at that young girl floundering in fur-belows who thinks her highest office in life is that of an ornamental do-nothing. Look at that young man whose father can scarcely provide enough food for his table. You say the boy ought to be some thing, but instead he is gadding about the streets or flirting with young misses, pursuing an aimless, enervating life, possessing nothing but vacuity and resources. Yet these absolute do-nothings never think to change their case, but the weeks slip into months, and the months into years, and find them growing indeed, but growing in one spot, never changing position, drawing a measure of sustenance, but yielding nothing in return. They speedily become as pithy, as juiceless, as worthless as last year's radish. In some cases this is owing to a want of self-reliance; but in very many it is the result of a want of pride. And yet of all things these young fry suppose that if they have nothing else they have pride. But it is the very thing they lack, and how fearfully! A man who possesses the pride born of true nobility and manhood is not ashamed to turn his hand to honest work, but he is ashamed to be a pensioner on the bounties of others. Young men in the vineyard, go to work! If you haven't the pride and the strength of character of the monk who would be proud to make shoes, at least put your hand to something, and go to work. Get down and out of all your castles in the air, and earn your salt. Stop dreaming about grand possibilities, which in your case are only glorious impossibilities, and earn your living by the perspiration of your eyebrows. If you

will only believe it, the world's heroes are not chosen from the world's do-nothings."

"I had no time to stuff the chicken," apologized a landlady. "Never mind, it's tough enough as it is," quickly replied the boarder.

Mistress: "Well, I'm afraid you won't quite suit; but I'll pay your fare. Let me see—did you come by omnibus or by the Metropolitan Railway?" Applicant for position of cook: "Oh no, ma'am; I drove up in a Hansom with my young man, as I'm engaged to be married to. There and back it will be five shillings, ma'am!"—[Punch.

Committee of Solicitation—"Is Mrs. Smith at home?" Mary Ann—"No, ma'am." Second Lady of Committee—"How unfortunate! We wanted to see her on business. Please tell her so when you hand her these cards." Third Lady—"Have you any idea when she will be in?" Mary Ann (who has been drilled for formalities only—"Yes, ma'am; she said when she ran out on the piazza as how she'd come right in again as soon as she heard the door shut."

The Higher Education of Young Women.

The Calendar of the Alma Ladies' College, St. Thomas, Ont., is at hand. This institution, erected and equipped for the higher education of young women, has had a very prosperous year, the attendance reaching 165. The buildings and furnishings are, it is said, the finest for the purpose in the Dominion, nearly \$60,000 having been spent in securing the best design and all the latest improvements in the way of light, heat, ventilation, &c. The Board has evidently spared neither pains nor money in the foundation of an institution that is certainly a credit to our young Dominion. The same may be said of the Faculty, which now numbers 13 regular teachers, with 5 lecturers—all of them being tried and successful teachers. We are pleased to note that in addition to the regular literary work in the Preparatory, Academic and Collegiate Departments, a good deal of attention is given to practical training, as we observe on the Curriculum a complete Commercial Course, as well as courses in Phonography and Telegraphy. We are also pleased to note the intention of the Board to arrange a Course in Domestic Economy, embracing the Theory and Practice of Cooking, and kindred arts, upon which so much of the comfort and happiness of domestic life depends. The Schools in Music and Painting are especially well equipped. Another gratifying feature in connection with the work is the comparative low rate at which the Board and Tuition are charged, the figures running from \$38.00 to \$45.00 per term of ten weeks for Board, Furnished Room, Light, Laundry and Tuition in all Literary subjects. The yearly rate is even more favorable, embracing all of the above, with Music and Drawing, for \$190 paid in advance. When one considers the cost of educating young ladies at home and the many drawbacks thereto in the way of social visits, &c., and the superior advantages of residence in such a building as Alma College, under the constant supervision of educated and Christian teachers, with all the facilities and opportunities afforded, we think he must be convinced that the education of young ladies in a first class Ladies' School is better, and in the end cheaper, than their education at home. Any of our patrons who are interested can secure circulars, &c., by addressing the Rev. B. F. Austin, B. D., Principal, St. Thomas, Ont.

Additional Correspondence.

(Continued from Page 244.)

SIR,—Is the "Jersey Queen" as productive a strawberry as the "James Vick"?

S. B. S., Grimsby, Ont.

[The "Jersey Queen" is not as productive as the "James Vick," but very high flavored; requires high culture; is a leading variety for the amateur, and season rather late. Its flavor more nearly resembles the English strawberry than any American variety.]

SIR,—Will you inform me if there is such a thing as a hay tedder, and a cart for drawing manure, manufactured in Canada?

H. T.

[We are not aware of hay tedders being made in Canada, but they and Kemp's manure spreader carts are badly needed and are most useful to every farmer. If any manufacturer builds these implements, he will benefit our readers and himself by using our columns.]

SETTING OUT STRAWBERRY PLANTS.

SIR,—Should Sharpless seedling strawberry plants be set out next fall or next spring?

W. H., Chatham, Ont.

[All other things being equal, we prefer spring setting. If, however, we desired Sharpless or any other variety, we should set it this season and not wait until spring. We should then be able (if we choose) to make a new bed next spring from the runners. If we desired a full crop in the spring we should purchase the plants now and give them the best of care until cold weather, when we should mulch them.]

Several communications are unavoidably laid over till next issue, for want of space.

Next to the thorough preparation of the land the better manuring is of the utmost importance.

During the severe thunderstorm on the night of the 21st ult., the entire horse "Derby," owned by Mr. Thomas Vance, of East Zorra, and for which he refused \$1,400, was killed by lightning. During the same storm, Mr. Perry, of Blenheim, lost a fine cow, which was killed in the field by lightning.

At this time of year, and later, there will be much complaint about taint in milk, and this defect is largely attributable to the cows drinking impure, stagnant water. Well watered, means having plenty of good, pure, running waters. It is not strange that a can of milk is occasionally spoiled in a seemingly unaccountable way, when it contains a pailful of milk drawn from a cow in an overheated condition. Cows should not be hurried and worried in going to and from the pasture, when "milking time" comes.

Mr. Peter Arkell, of Teeswater, arrived at Point Levis by the steamship Lake Huron from Liverpool on the 28th ult. He brought with him forty-six Oxforddown sheep for his own use, and two Cotswold and two Southdown rams for Mr. F. W. Stone. Mr. James Glennie, of Puslinch, who came out by the same ship, landed 57 Shropshire sheep. But both these gentlemen also brought out some splendid pigs, Mr. Arkell's lot consisting of four and Mr. Glennie's of five Berkshires. Mr. Arkell also brought out with him a Shetland pony.

OUR FALL CAMPAIGN

SELECTIONS FROM OUR GRAND PREMIUMS.

PUSHING AGENTS WANTED IN EVERY COUNTY.

NEW PREMIUMS—GRAND WHEAT PRIZES.

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 where grown by our correspondents. Grand for yield, hardy, beardless, and pronounced A 1 by the millers; or four ounces each of **Martin Amber, Rogers', White Mountain and Red Russian.** Should any prize winner prefer he can substitute the **Democrat, Michigan Amber, Clawson or Fultz** in place of any of the last named varieties; or instead of the four ounce packages we will send two pounds of any of the last named varieties.

(N.B.—We are not in the seed business, nor do we sell any seed; we procure from reliable seedsmen what we want, but cannot guarantee any variety quite pure.)

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 July issue. Nothing so sweet, so charming in its delicacy and beauty as this type of purity.

The Farmer's 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 descriptions of the "Martin Amber" Wheat and "Jersey Queen" Strawberry are given in this 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.

For samples, posters, &c., address

THE FARMER'S ADVOCATE,

LONDON, ONTARIO.

CANADA.

Commercial.

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

The month of July just past and gone will be long remembered by many farmers throughout Western Ontario, from the wholesale mischief done to their crops and property by the terrible rains and floods. It has been a very precarious one for farmers, and no doubt has given cause for anxiety. A more hopeful feeling is now beginning to prevail. The southern part of Ontario has suffered the most, and the injury done on low lands has been considerable. Grass is very heavy and a large percentage of it will be well saved. The hay crop is now said to be worth more than the wheat crop; ordinarily its value is estimated at fifty millions of dollars; to this figure may be added twenty millions for excess over an average crop. This will, to a large extent, balance the deficiency in the wheat crop. From Manitoba and the Northwest encouraging accounts of the crops are reported, and there is every prospect of an abundant harvest there.

WHEAT.

The wheat market has ruled very quiet, and the tendency has been towards the lower prices till within the past ten days, when there has been a little better feeling. Still there is nothing to warrant any material advance.

According to the July report of the American National Millers' Association, the estimated falling off in the wheat crop as compared with 1882 will be only some 11,000,000 bushels. The shortage indicated by the May report was 93,000,000 bushels. English reports say that the wheat acreage there is not more than 15 per cent. below the average. As yet there is a great deal of uncertainty about the English wheat crop, but if the present promise of the English crop is kept, bread may be cheap in this country next winter.

The harvest in Prussia promises well. Fruit, beet root and potatoes are everywhere abundant. The same applies to Hungary, while France is said to have an average crop, and by others above the average. The quantity of wheat now coming from India is becoming an important factor in the English bread question, and the English Government has been making an exhaustive inquiry into the milling and bread making qualities of Indian wheat as compared with the various wheats imported into the United Kingdom. This will have a certain effect on the product of that country. The weather in England for the next few weeks will have a telling effect on the markets of that country. There will be nothing like the quantity of wheat in Western Ontario this year there was last, still there is no cause for alarm, and with the very fair crop reports from all quarters of the globe, we don't see anything to warrant very dear bread the coming fall and winter. The fact is, there is a gradual tendency to lower values, and farmers would do well to keep this in view. Every one knows (but especially those who have to buy) that the prices of all kinds of farm produce have been unusually high the past two years.

BARLEY

in some localities is very poor, while in others it is very good. It is too early to form any opinion as to the crop or prices.

PEAS

are very poor indeed in some localities, while in others the crop is not so bad. Wherever the heavy rains have prevailed the crop is more or less severely injured.

OATS

are looking well, and bid fair to be one of the best crops this season.

CORN.

The season has been too wet and too cold for corn. Many fields have never been hoed or cultivated.

HOGS.

Looking at them from an American standpoint, the prospect is for much lower prices than has prevailed the past two years. From the most authentic reports from the west, there is every prospect of a good corn crop, and plenty of hogs to feed the same to. Those who market early and don't feed too much grain, we think will do the best.

CHEESE

has been rather quiet the past two weeks, and the feeling is decidedly easier. In fact this was to be expected from the prices that have been paid in

the London and Ingersoll sections. Cheese is much cheaper in Montreal; the price there being one-half cent less than in the west.

The shipments from Montreal last week were 65,500 boxes, and from New York 90,000, making a total of 155,500 boxes. The week previous the shipments were, 62,000. Thus inside of ten days England will have over 300,000 boxes of cheese landed on her shores. No plaything, but enough to keep them from feeling very anxious about the future for a few weeks at least.

BUTTER

keeps very quiet and dull, with little or no export demand. Western can be bought for 14 to 15 cents, but even at this price there is no margin for export.

FARMERS' MARKET.

LONDON, ONT., Aug. 2 1883.

Per 100 lbs	
Red wheat.. \$1 60 to \$0 00	Eggs, small lots 18 to 20
Deihl..... 1 65 to 1 70	Potatoes, bag 1 00 to 1 50
Treadwell.. 1 65 to 1 70	Apples..... 1 00 to 1 50
Clawson.... 1 50 to 1 60	Roll butter.... 18 to 20
Corn..... 1 25 to 1 30	Tub " "..... 13 to 14
Oats..... 1 30 to 1 35	Crook " "..... 14 to 16
Barley..... 1 00 to 1 15	Cheese, lb..... 10 to 11
Peas..... 1 20 to 1 25	Onions, bush. 60 to 0 80
Poultry (Dressed)—	Tallow, clear.. 7 to 8
Chickens, pair 0 50 to 0 70	" rough..... 5 to 6
Ducks, pair.. 0 60 to 0 90	Lard, per lb.... 14 to 15
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 11 00 to 12 00
Milk cows... 40 00 to 60 00	Beans per bush 1 25 to 1 50

TORONTO, Ont., Aug. 2nd, 1883.

Wheat, fall No. 1 \$1 10 to \$0 00	Onions, bag... 0 00 to 0 00
Wheat, spring. 1 00 to 1 10	Chickens, pair.. 0 50 to 0 55
Barley..... 0 60 to 0 75	Fowls, pair.... 0 60 to 0 60
Oats..... 0 42 to 0 43	Ducks, brace.. 0 80 to 0 80
Peas..... 1 00 to 0 00	Geese..... 0 00 to 0 00
Flour..... 4 70 to 5 00	Turkeys..... 1 00 to 2 00
Rye..... 0 60 to 0 70	Butter, roll... 0 18 to 0 20
Potatoes, bag.. 1 10 to 0 20	Butter, dairy.. 0 17 to 0 18
Apples, bri... 0 00 to 0 00	Eggs, fresh... 0 17 to 0 18
Tomatoes, bu.. 0 00 to 0 00	Wool, per lb... 0 17 to 0 20
Beans, bu..... 1 25 to 1 50	Hay..... 12 00 to 13 50
	Straw..... 8 00 to 9 00

GRAIN AND PROVISIONS.

MONTREAL, Aug. 1st.

Wheat—	Ont Oatmeal.. 5 25 to 5 50
Can spring, \$1 12 to \$1 14	Cornmeal..... 3 50 to 3 70
Red winter 1 16 to 1 18	Butter—
White..... 1 13 to 1 14	East'n Tp's. 15 to 17
Corn..... 59 to 1 60	Morrisburg.. 17 to 18
Oats..... 35 to 36	Brockville.. 17 to 18
Peas..... 97 to 98	Western..... 15 to 16
Flour—	Mess pork... 18 50 to 19 00
Superior ex 5 20 to 5 25	Lard..... 12 to 13
Superfine... 4 20 to 4 25	Hams..... 13 to 14
Strong bak 5 20 to 5 25	Bacon..... 13 to 14
Pollards... 3 40 to 3 50	Cheese..... 9 to 10

LIVE-STOCK MARKETS

BRITISH MARKETS, PER CABLE.

Cattle Higher—Sheep Steady.

Liverpool, July 30th, 1883.

CATTLE.

The cattle market has been fairly active, and with light supplies and a good demand values have ruled firmer at the advance.

	Cents @ lb.
Choice steers.....	16 1/2
Good steers.....	16
Medium steers.....	15
Inferior and bulls.....	11 to 12 1/2

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

SHEEP.

The sheep market is weak and prices are 1c. per lb. lower than one week ago. Offerings rather large.

	Cents @ lb.
Best long woolled.....	@18
Seconds.....	@17
Merinos.....	@16
Inferior and rams.....	@12

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

AMERICAN.

East Buffalo, N. Y., Aug. 2.

Receipts—Cattle, 634; hogs, 3,100; sheep, 3,000. Shipments—Cattle, 684; hogs, 2,700; sheep, 3,480. Cattle—Receipts, all through feeling is firm. Sheep and lambs—Very firm and higher; good 80 to 90 pounds sheep \$5 to \$5.50; good 90 to 100 pounds \$5.50 to \$5.75; 100 to 120 pounds at \$5.75 to \$6; lambs, 5c. to 6c. Hogs demand fair; closed brisk; Yorkers, \$6.15 to \$6.25; good to heavy, \$6.

CHEESE MARKET.

LONDON, ONT., CHEESE MARKET—July 28th.

At the market on Saturday, twenty-seven factories offered 6,400 boxes of cheese—July make. Sales were reported of 300 boxes at 9c. and 400 at 9 1/2c. Cable, 52s 6d.

Ingersoll, July 31st, 1883.

Eighteen factories offered \$4,330 boxes of cheese, mostly last half. July make; no sales reported; 9c. and 10c. was offered for best factories. Market dull, Cable having declined to 52s.; 23 factories present and 9 buyers. Cable at 5 p. m., 52s.

Utica, N. Y., July 30, 1883.

The range of prices to-day is limited, and the ruling stands midway between the highest and lowest. Quotations are as follows: 12 lots, 900 boxes, at 9c.; 73 lots, 7,007 boxes, at 9 1/2c. 2 lots, 180 boxes, at 9 1/2c.; 16 lots, 1,976 boxes, at 10c.; 4 lots, 408 boxes, at p. t. Sales, 10,471; commissions, 2,118; total, 12,589 boxes. Ruling price 9c. Transactions of corresponding day last year were 9,245 boxes at 10 1/2c. The price therefore is 1/2c. below the last two years, while the amount of the marketings is 33 per cent. higher.

Little Falls, July 30.

CHEESE.—We have had quite a brisk trade in cheese here to-day, and the sales have been free.

FARM DAIRIES.—There were 620 boxes of farm cheese sold at 9 1/2c. One lot branded factory, the Burt grove, sold at 10 1/2c. The bulk sold at 9c.

BUTTER.—There was a good demand for butter here to-day, to supply near-by local markets, and many orders remained unfilled. Thirty-five packages of dairy at 19 to 21c., mostly at 20c.

NEW YORK CHEESE MARKET—July 28.

State factory, fancy colored.....	10 1/2 to 10 3/4
State factory, fancy white.....	10 to 10 1/2
State factory, prime.....	9 1/2 to 9 3/4

NEW ADVERTISEMENTS.

PEDIGREE HEREFORDS

in ENGLAND, on

SEPTEMBER 6th, 1883,

—AT—

THE LEEN, PEMBRIDGE, HEREFORDSHIRE,

the whole of

THE LEEN, 'Royal Prize Winners'

(numbering 130 head) the property of MR. PHILIP TURNER, the veteran breeder, including that wonderful bull

"THE GROVE THIRD" 5051,

sire of all the young stock for sale, also of RUDOLPH 6660, recently sold to Mr. George Morgan for 700 guineas.

On SEPTEMBER 20th, 1883,

—AT—

STONE ACTON, CHURCH STRETTON, SHROPSHIRE.

MR. C. WADLOW'S old established herd of PEDIGREE HEREFORDS,

and flock of grand

SHROPSHIRE DOWN SHEEP

Full pedigrees and particulars in catalogues to be had of

ROGERS & HAMAR

PEDIGREE HEREFORD SALESMEN, HEREFORD, ENGLAND.

who will faithfully execute any commission entrusted to them. 212-a

GREAT SALE OF Thorough-bred Stock,

Consisting of 20 Head of Pure Bred Shorthorns, &c., by Auction, at Springvale Farm, East Oxford, 6 miles from Woodstock, and one mile from Currie's Station, on the Grand Trunk Railway (Port Dover Division), on

Friday, 28th September, 1883.

At Twelve o'clock, noon.

14 cows and heifers and 6 bulls, 1 aged Cotswold ram (imported), 8 shaggy Cotswold rams out of imported stock, 120 ewes and lambs, Cotswold, bred from imported stock; 25 Lincoln ewes from imported stock, 3 Berkshire sows, 1 Berkshire boar, 2 Berkshire litters of young pigs; 1 Vicksburg 4-year old filly, broken to harness; 1 Royal George brood mare, in foal to Combination; 1 Rubie brood mare, in foal to Combination; 1 Princeton 2-year old, 1 Princeton yearling, 1 Princeton sucker, 1 Combination yearling and 1 Combination sucker. Note.—This herd took the herd prizes at the North and South Riding Agricultural Shows last year, held in the County of Oxford, also the sheep took flock prize. Catalogues can be had on application to the proprietor, ED. W. CHAMBERS, Woodstock 10. No Reserve. 212-b

SEPTEMBER 28th, 1883.

PUBLIC SALE

—OF— NINETEEN CLASSES

LIVE STOCK.

The Ontario Experimental Farm

During week of Provincial Exhibition at Guelph will sell without reserve, Thorough-bred Bulls, Cows, Heifers and Calves of

Durhams, Devons, Aberdeen Polls, Herefords, Jerseys, Ayrshires.

Also, pure bred Rams and Ewes of

Cotswolds, Shropshire Downs, Leicesters, South Downs, Merinos, Oxford Downs.

With pure bred Boars and Sows of

Berks, Essex, Poland China.

As well as

Pure-bred Scotch Collie Dogs, Graded Fat Cattle, Several High-graded Cows, and Fat Sheep.

in all about 60 Cattle, 200 Sheep, 20 Swine, and 10 Dogs.

Send for Catalogue.

WM. BROWN.

Guelph, Ont., Aug. 1st, 1883.

212

FOR SALE.

Jersey Cow, "Moss Rose," solid fawn color, black tongue and switch; 4 years; gives 16 qts. daily, 25 per cent. cream; very handsome and gentle; in calf to A. I. C. C. registered bull. Price, \$200.

Young Toulouse GESE, \$6 per pair.

Imported Fox Terrier Bitch, "Nettle," and 3 pups of her to "Revenge" \$5 each.

H. G. CHARLESWORTH,

212-a

TORONTO.

GALT COLLEGIATE INSTITUTE GALT, ONTARIO.

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THE NEW ROGERS' WHEAT.

This variety originated in the eastern part of Pennsylvania. It is a bald, white-chaffed wheat, with straw as stiff and much softer than Fultz. All the reports I have received this season thus far are very promising, it having stood the winter much better than many of the older sorts. The yield from a five acre field last year, on black loam with clover sod and 100 pounds of phosphate, was 47 bushels per acre.

A descriptive circular of the above and other leading sorts, with prices, will be published in a few days and mailed free to all applicants.

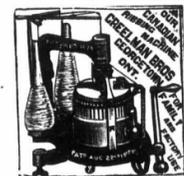
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OUR FAMILY KNITTING MACHINE.



Send for descriptive Catalogue and Testimonials from the blind.

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UNDER SHIRTS, DRAWERS, SCARFS, CHILDRENS WEAR, HOSIERY, CAPS, GLOVES, MITS, &c. All sizes can be made on

OUR FAMILY MACHINE.

Our Book of Instructions will teach you all.

It is so simple 6 undershirts can be made in

one day, giving a profit of 75 cents each. Blind

girls can knit and finish one doz. pairs of socks

per day, and \$2.83 and \$4 per day can be easily

made on our

Great Family Canadian

Ribbing Machine.

Stock Notes.

The attention of our readers is directed to the announcements in this issue of public stock sales by E. W. Chambers, Esq., of Springvale Farm, Woodstock, Ont., and by the Ontario Agricultural College, at Guelph, Ont. Both sales take place on 28th Sept. next.

Messrs. Geary Bros., the well-known stock breeders of London, Ont., received on the 18th ult. seventy head of imported Polled Angus cattle which have just been released from quarantine at Quebec.

A. J. Thompson & Co., of St. Catharines, on 17th ult., shipped nine carloads, consisting of 160 head of prime cattle. The average weight of the bovines was 1,400 lbs., and the total value of the cargo was \$14,000.

Messrs. John Brown & Sons, of Galt, shipped a large number of sheep during the latter part of July, destined for the old country, one consignment numbering 170, of an average weight of 160 pounds.

H. B. Rathburn & Sons, of Bayview Stock Farm, Deseronto, Ont., wish to dispose of a number of their thoroughbred Jerseys (not the culs), but will sell any animal on the farm at reasonable rates. Pay this farm a visit, and the manager, Mr. D. E. Howatt, will give you every information.

Rogers & Hamar, the well-known Hereford salesmen of Hereford, Eng., announce in the usual columns the sales of 130 head pedigree Hereford, a draft from the herd of the veteran breeder, Philip Turner, on 6th September, and on the 20th September, C. Wadlow's herd of Herefords and a flock of Shropshire sheep. These sales are beyond question two of the most important of the fall, and will bring together a great number of leading breeders from Great Britain and America. We hope to hear of animals coming to Canada.

(Continued on page 258.)

"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 unmixed, the object being to decide the most valuable variety from actual yield and general qualities.

Special Notices.

Pearce, Weld & Co. and George McBroom, leading seedsmen of this city, both bring before our readers some new varieties of fall wheat. Send at once for their catalogues.

The Monarch Lightning Potato Digger has been in use for the past five years, and we have been reliably informed that so great is the demand for this important farm implement that the factory is taxed to its utmost capacity. The Monarch Manufacturing Co., Chicago, are the sole manufacturers of this excellent digger. Read their advertisement in another column.

BEATTY'S WONDERFUL CAREER—A NEW ORGAN FACTORY TO BE ERECTED.—The largest shipment of organs and pianofortes for any one month was accomplished by Mayor Beatty during the month of June. Nearly two thousand instruments were made and shipped to all parts of the world. So great is the demand for Beatty's organs and pianofortes that Mr. Beatty is compelled to erect another factory, which, including the old building, will occupy, when completed, nearly eight acres of space, in which over three thousand instruments can be made every twenty-six working days. Read his advertisement.

Ontario Agricultural College.

The only Institution in Ontario at which a Farmer's Son can get an Education without losing his taste for Farm Work.

SUBJECTS TAUGHT:

Agriculture, Live Stock, Arboriculture, Horticulture, Chemistry (inorganic, organic, agricultural and analytic), Geology, Meteorology, Botany, Zoology, Physiology, Entomology, Veterinary Science, English Literature and Composition, Political Economy, Arithmetic, Mensuration, Mechanics, Levelling, Draining, and Book-Keeping.

SPECIAL ATTENTION PAID TO

Agriculture, Chemistry and Veterinary Science. Six Breeds of Cattle, six of Sheep, and three of Pigs, kept for the practical study of Live Stock.

LENGTH OF COURSE, - TWO YEARS.

All Students engaged in manual labor and class room work—half-day study and half-day work, alternately.

Average cost to an Ontario Farmer's Son for board, washing and tuition, \$50 to \$70 a year. Candidates for admission must be sixteen years of age.

Standard for Admission the same as for High Schools. High School Entrance Certificate accepted in lieu of Examination.

Students are admitted on the 1st of October by Certificate or Examination, and should remain at least till the 30th of June.

For Circulars, apply to

JAMES MILLS, President. Guelph, June 18th, 1883.

SEED WHEAT

FOR FALL SOWING.

All the old and standard kinds, together with several new varieties tested by ourselves, and for the first time offered for sale in Canada.

MARTIN'S AMBER.

A new hardy, bald wheat, of remarkable length of head light amber-colored grain. This is a very promising wheat—hardy, early and productive; has stood the past severe winter without injury. Price on application.

HYBRID MEDITERRANEAN.

Also a new variety very highly spoken of by the leading seedsmen in the States. A very thick set head like the Diehl, and bearded like the Mediterranean, combining the qualities of its parents, having the yielding qualities of the former and the hardness of the latter; has stood the winter well with us, and is worthy of a trial. Price on application.

EMOCRAT.

First introduced by has also stood the winter well, and looks well.

A choice stock of the following sorts:—Egyptian, White Mountain, Roger, Scott, Clawson, Fultz, &c.

See full descriptions, with Cuts and Prices, in our Fall Wheat Circular. Free to all who apply. Send for it. Always in stock—Orchard Grass, Kentucky Blue Grass, Meadow Fescue, Oat Grass, &c., and all Grasses for permanent pastures.

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North American Galloway Herd Book,

Published by the Agricultural and Arts Association of Ontario, in conjunction with the North American Galloway Breeders' Association.

VOL. I IS NOW READY

And will be sent by mail for \$2.00. Send money in Registered Letter or Draft to

Henry Wade, Sec. Agricultural and Arts Association, 212-a TORONTO, ONT.

38th PROVINCIAL EXHIBITION

—OF THE— Agricultural & Arts Association OF ONTARIO TO BE HELD AT

GUELPH

—ON THE—

24th to 29th September, '83.

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

Horses, Cattle, Sheep, Swine, Poultry, Agricultural Implements, on or before Saturday, August 25th.

Grain, Field Roots and other Farm Products, Machinery and Manufactures generally, on or before Saturday, September 1st.

Horticultural Products, Ladies' Work, Fine Arts, etc., on or before Saturday, September 8th. Prize Lists and Blank Forms for making the entries upon can be obtained of the Secretaries of all Agricultural and Horticultural Societies and Mechanics' Institutes throughout the Province, or to

HENRY WADE, Secretary, Agricultural and Arts Association, Toronto, D. P. MCKINNON, President, South Finch.

500 CHOICE FARMS

Of 160 acres each, at from \$2.50 to \$15 per acre, with or without settlement, in the York Farmers' Colony. Look out for our magnificent exhibit of wheat at the Fall shows. Address

J. ARMSTRONG, 1 Victoria St., Toronto, Ont.

GURNEY & WARE'S STANDARD SCALES.

Have taken 1st Prize at 22 Provincial Exhibitions; 1st Prize Provincial Exhibition, London, 1881. Prizes taken in England & Provinces of Quebec and Nova Scotia. Hay, Cattle, Coal, Stock, Mill, Grain, Dairy, Rail-

road and Grocer Scales. None genuine without name on. All makes of scales promptly repaired. Send for catalogue to GURNEY & WARE, 201-1 com Hamilton, Ont.

40 CARDS, all lap-corner, Gilt Edge, Glass, Motto and Chromo, Love letter and Case name in Gold and Jet, 10 cents. WEST & CO., Westville, Conn. 212-B

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contains most approved designs for Villas, Farm Houses, Cottages, and Suburban Residences, ranging in cost from \$360 to \$20,000. 1 Vol., large quarto, 175 illustrations. Price \$2.00 cts. BARN AND OUTHOUSES, (Just Published) contains most practical designs for Farm Barns, Stock Barns, Carriage Houses, Stables, Dairies, Hog Houses, Chicken Houses, Artificial Rearing Apparatus, Corn Crib, Granaries, Smoke Houses, Ice Houses, Bee Houses, Summer Houses, Bird Houses, Hot Beds, Green Houses, Graperies, How to lay out Farms and Gardens, designs for Lawn and Hanging Baskets, Garden Vases, Fountains, and valuable illustrated articles on Cheap Homes, Concrete Buildings, How to improve old Barns, etc. 1 Vol., large quarto, 200 illustrations. Price \$2.00 cts. "The wonder is that publications of this kind have not been issued before."—N. Y. Weekly Witness. "Precisely meets a want which thousands have felt."—N. Y. Observer. "The most practical book we have ever seen."—Episcopal Methodist. "A responsible Association."—Christian at Work. These books must be seen to be appreciated—a mere circular or catalogue can give no idea of their value. On receipt of \$1.00 we send both books, post-paid, for examination. Both or either can be returned, if not entirely satisfactory and the money will be immediately refunded. Address: Co-operative Building Plan Association 24 Beekman St., (Box 2702), New York.

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in fine Pot Layers, planted any time from July 15th to September 15th, will give a full crop next season. At the June, 1883, Exhibition of the New York Horticultural Society, we were awarded 8 first prizes for Strawberries shown. Circular of the
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of the Varieties for 1883, including the new and famous "JERSEY QUEEN," together with our certain and simple method of culture, sent to all applicants free of charge.
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Allen's (R. L. & L. F.) New American Farm Book.....	\$2 50
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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, to

STOCK NOTES.

(Continued from page 257.)

Mr. Henry Groff, of Elmira, Ont., has sold to Clay and Forrest, of Chicago, forty-five very nice shorthorn bulls, average age fifteen months.

Two pigs furnished with muck, sand, weeds and sod will manufacture them into the best manure that can be found, worth, when the pigs are six months old, as much as a ton of the best super-phosphate.

Sheep are at this season much troubled with the gad fly, which lays eggs in their nostrils, and these hatching out cause the grub on the head. Tarring the noses is a good preventive. It may be done by giving salt to sheep in a narrow dish that has tar smeared on its sides, or compelling them to lick their salt through a tarred ring barely wide enough to admit the nose.

Messrs. John Miller & Sons, of Brougham, Ont., recently made the following sales: To Hugh Thompson, St. Mary's, the imported heifer, "Clementina;" to A. F. Dafeo, St. Mary's, one pure Berkshire sow; to W. T. Prangley, Dawn Mills, the pure Clydesdale, "British Boy," by Boydston Boy (III), and Imported Nettie II, one yearling bull, two two-year-old heifers, and one Berkshire boar; to Robert Miller, Elmwood, Michigan, the imported Clyde stallion, "Forest King;" and to Dr. C. E. Smead, Logan, N. Y., the Clydesdale colt, Brown Buccleugh. The above mentioned stock were all particularly good, and amounted in all to \$4,245.

Cows that are to be fattened should be dried off early and put on good pasture. The grass makes sweet beef. While on pasture, two or three quarts of corn meal should be given every night. Turnips give an excellent flavor to beef. As soon as the grass begins to fall off, the cow should be brought home and put in a pen by herself, with a good bed of litter under her, and given daily half a bushel of turnips, four quarts of meal, and as much roughness, such as straw, corn fodder, nubbins, etc., as she will eat. Very little water should be given; scarcely any will be required with this feeding. A week before Christmas she should be turned into beef, and the best rib roast; the second cut in the forequarter keep for the Christmas dinner. There will be no trouble in selling what is not wanted, at a good price, by the quarter.

Mr. John Jackson, of Woodside Farm, Abingdon, now in England purchasing Southdown sheep, principally for himself and others, intends to sail from Liverpool about the latter part of July. He had bought, on the 3rd of July, about 70 head. He brings for Mr. Thos. Wilkinson, of Renton Station P. O., some of the best Southdowns in England, bred by Mr. J. J. Colman, M. P. for Norwich City. They are prize winners this year in England. It will be remembered that Mr. Wilkinson visited England last year and bought from the same gentleman sheep that stood first at the Royal Show there, and were awarded the highest prize and silver medal at the Provincial Show last year in Kingston. Mr. J. C. Ross, of Walpole county, Haldimand, brings Shropshires, Oxfords, Hampshires and some Southdowns. Mr. James Main, well known as an importer of Cotswolds and swine, sailed from Liverpool this month with some choice animals.

An English correspondent says: "An American 'chiel has been among us takin' notes,' and he has had the courage to 'prent them.' Gen L. F. Ross has been in England, and recently visited a number of herds of Red Polls in the counties of Norfolk and Suffolk, and he now lets his contemporaries in the States into the secret why he did not buy Red Polls. He confesses that his admiration of these cattle has in no way diminished, but the very high prices by which they were held by the owners is, he says, a great obstacle in the way of large purchases and importations by American stockmen. He considers the present a most unfavourable time for the purchase of live stock in England, as the prices of the animals and the expenses of shipment and quarantine are so high as to make it almost prohibitory to purchase. He hopes, however, on an early day, if his English cousins are not too exorbitant as to prices, to make another trip, and to select a few lots from the best herds in England for shipment across the Atlantic. Mr. Ross is profuse in his thanks for the civility and courtesy he experienced during his run through the eastern counties; and we trust the next time he ventures across 'the pond' he will be able to find stock-owners willing to negotiate on fair terms."

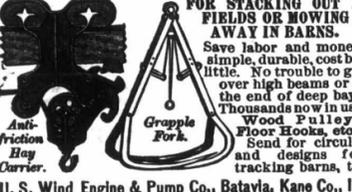
Fast Potato Digging!



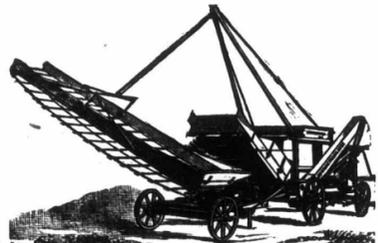
The Monarch Lightning Potato Digger
Saves its cost yearly, FIVE TIMES OVER, to every farmer. Guaranteed to Dig Six Hundred Bushels a Day!
Sent on 30 Days' TEST TRIAL.
Agents Wanted.

Write Postal Card for Free Illustrated Circulars. Mention this paper. Address
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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 bays. Thousands now in use.
Wood Pulleys, Floor Hooks, etc.
Send for circular and designs for tracking barns, to
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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,
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1 GILT Floral Autograph Album, 1 Photo Card Album, 1 Memorandum Book, 1sc. WEST & CO., Westville, Ct. 212-B

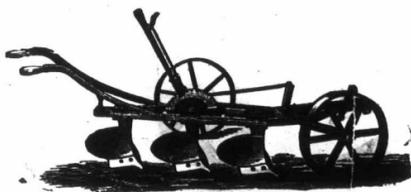
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Manufacturers of Agricultural Implements generally, beg to call special attention to their

Eclipse Gang Plow and Two-Horse Cultivator.

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



GUARANTEED

Superior to any other mill. 17 H.P. to 40 H.P. Adopted by U.S. Government at forts and garrisons and by all leading railroad companies of this and other countries. Also the Celebrated

K & L FRED 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

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Jefferson, Lady Washington, Pocklington, Delaware, Catawba, Concord, Etc. LOWER THAN THE LOWEST. Price list free with list cuts of Jefferson and Pocklington. ALL GRAPES WARRANTED TRUE TO NAME. EVERETT BROWN & CO. Batavia, N. Y.



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are sent anywhere on trial to operate against all other Presses, the customer keeping the one that suits best. No one has ever dared show up any other Press as Dederick's Press is known to be beyond competition, and will save at least expense with twice the rapidity and load more in a car than any other. The only way inferior machines can be sold is to deceive the inexperienced by ridiculously false statements, and thus sell without sight or feeling, and swindle the purchaser. Working any other Press alongside of Dederick's always sells the purchaser a Dederick Press, and all know it too well to show up. Address for circular and location of Western and Southern storeshouses and Agents. P. K. DEDERICK & CO., Albany, N. Y.

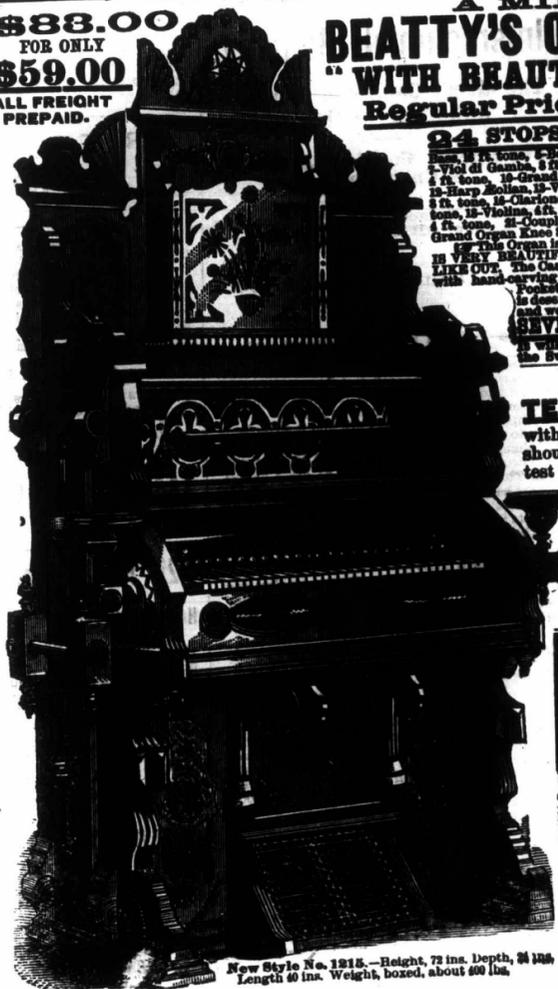
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A MIDSUMMER OFFER. BEATTY'S ORGANS FOR ONLY \$59.00 "WITH BEAUTIFUL CHIMES OF SWISS BELLS."

Regular Price \$88.00, without Bench, Book and Music.

34 STOPS. Cello, 3 ft. tone, 3-Melodia, 3 ft. tone, 2-Clarinet, 3 ft. tone, 4-Manual Sub-Bass, 18 ft. tone, 4-Saxophone, 3 ft. tone, 1-Violin, 3 ft. tone, 1-Dissonance, 3 ft. tone, 15-Sharp Basses, 15-Vox Humana, 15-French Horn, 1 ft. tone, 4 ft. tone, 10-Grand Expression, 11-French Horn, 1 ft. tone, 15-Sharp Basses, 15-Vox Humana, 15-French Horn, 1 ft. tone, 15-Dulciana, 15-Sharp Basses, 15-Vox Humana, 15-French Horn, 1 ft. tone, 15-Ficcollo, 15-Violina, 15 ft. tone, 15-Vox Humana, 15-French Horn, 15-Ficcollo, 15 ft. tone, 15-Coupler Harmonique, 15-Orchestral Forte, 15 ft. tone, 15-Right Organ Knee Stop, Grand Organ Knee Stop.

A SPECIAL TEN-DAY OFFER. If you will remit me \$59 and the annexed Coupon within 10 days from the date hereof, I will box and ship you this Organ, hereof, I will box and ship you this Organ, exactly the same as I sell for \$88. You should order immediately, and in no case later than 10 days. One year's test trial given and a full warrantee for Six Years.



New Style No. 1215. - Height, 72 ins. Depth, 36 ins. Length 40 ins. Weight, boxed, about 400 lbs.

Given under my hand and seal this 10th of August. *Daniel F. Beatty* A.D., 1883.

COUPON On receipt of this Coupon from any reader of the **FARMER'S ADVOCATE** and \$59.00 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 \$24, as part payment on my celebrated 34 Stop Parlor Organ, with Bench, Book, etc., providing the cash in full for balance of \$59 accompanies this coupon; and I will send you a receipted bill in full for \$88, and box and ship you the Organ just as it is advertised, fully warranted for six years. Money refunded with interest from the date of remittance if not as represented after one year's use. (Signed) DANIEL F. BEATTY.

FREIGHT PREPAID. As a further inducement for you (provided you order immediately, within the 10 days), I agree to prepay freight on the above organ to your nearest railroad freight station, any point east of the Mississippi River, or that far on any going west of it. This is a rare opportunity to place an instrument, as it were, at your very door, all freight prepaid, as manufacturer's wholesale prices. Order now! nothing saved by correspondence.

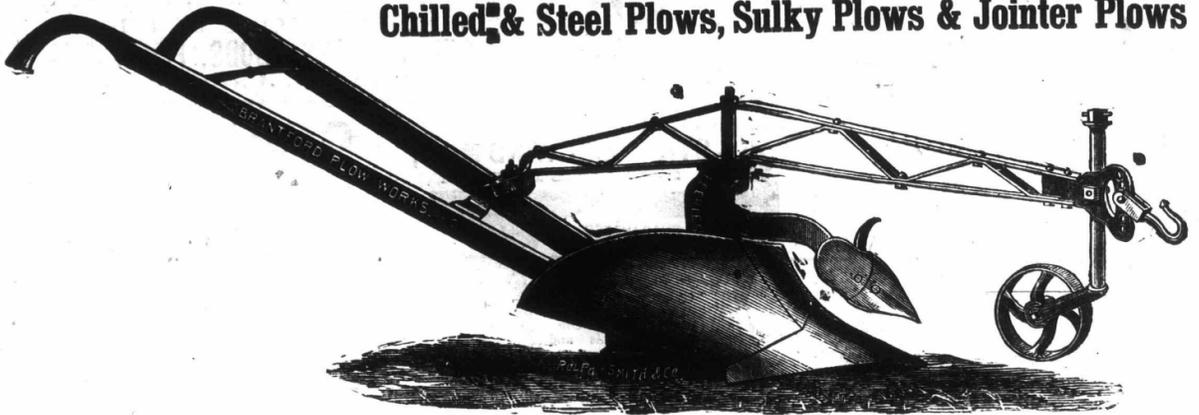
HOW TO ORDER. Enclosed find \$59 for organ, I have read your statement in this advertisement, and I order one on condition that it must prove exactly as represented in this advertisement, or I shall return it at the end of one year's use and demand the return of my money, with interest from the very moment I forward 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 the 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 on the Manufacturer: **DANIEL F. BEATTY, Washington, New Jersey**

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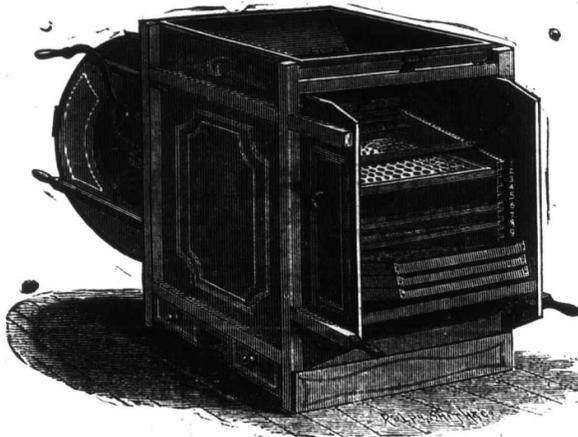


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Our now justly celebrated "PEERLESS" and "CHAMPION" Jointer Plows will be found to be the best plows manufactured for speedily preparing the land for wheat, also for plowing down manure or heavy growth of clover or weeds, and thoroughly pulverizing the land they are second to none. Send for one and prove for yourselves. Every plow warranted. If no agent in your locality address

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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,

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FOR UNDERDRAINING.
Capacity, half-mile to one mile per day
Three feet deep.

WM. RENNIE,
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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.

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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.

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Leave London 3:55 p. m.
Montreal 10:00 p. m. next day.
Quebec 8:10 a. m. next day.

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Leave Halifax 6:15 p. m.
St. John, N. B. 10:30 "

Arrive Quebec 8:40 " next day.
Montreal 6:00 a. m. day after
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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.

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Ticket Agent, No. 3 Masonic Temple, London.
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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., 25th November, 1882. 205-ff

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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

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\$20 Per Day for Well Boring!

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BORES 20 FEET PER HOUR, HAND OR HORSE POWER.

STAR AUGER COMPANY,
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MACHINERY.

New PARAGON SCHOOL DESKS.
M. BEAT V & SONS, WELLAND, ONT.
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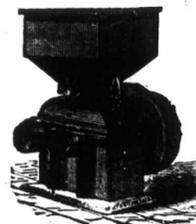
LINSEED CAKE

Linseed Cake Meal

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

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Chicago, Ill., U. S. A.
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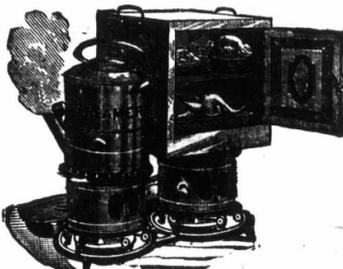
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Award of Gold and Silver Medals.

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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.
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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
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Modelled from the Newest Designs; which, for Elegance, Durability and Workmanship, cannot be surpassed in the Dominion. dc-12