

FARMER'S ADVOCATE

PERSEVERE
SUCCEED

AND HOME MAGAZINE

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THE FARMER'S ADVOCATE —AND— HOME MAGAZINE.

WILLIAM WELD, Editor and Proprietor.

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Published in the Dominion.

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Our Prize Essays.

The prize of \$10 given by a farmer, a subscriber to this paper, for the best essay on "the benefit derived by farm crops from the application of salt," has been won by Mr. James Shannon, Wolverton, Ont.

The prize of \$5 for the best essay ON THE SEEDING AND MANAGEMENT OF PERMANENT PASTURES, has been awarded, and the essay and the name of the winner will appear next month. A prize of \$5 will be given for "the best collection of drawings and descriptions for making home-made, labor-saving implements for the farm." Drawings, etc., to be in this office by the 10th May. No prize for any patented implements, nor for less than three implements.

A sample copy will always be forwarded to any intending subscriber.

On account of the great pressure on our columns a number of able and interesting original articles and considerable correspondence is unavoidably laid over until next issue.

Agents are wanted in every County in the Dominion, to whom liberal cash commission will be given. Good pushing and intelligent farmers' sons, who have read and know what the ADVOCATE contains, and its value to every agriculturist, can earn an excellent salary by engaging at this honorable and useful business for a few months, as opportunity occurs.

The Month.

The weather during the past month has been anything but desirable for the advantageous prosecution of farm work. The weather has alternated between frosty nights and sharp windy days. But little seeding has been done at the time of writing, and those who have got any grain sown have done so merely to get the work out of the way. The season is of necessity backward, as there has been no growth in the ground. Fall wheat has suffered severely by the alternate freezing nights and sunny days during April, and on badly drained and impoverished soils a great quantity is killed out. However, we have seen some excellent pieces on dry, well cultivated lands, and at this time of the year we never saw the plant looking better.

The clover now shows plainly the injurious effects of the winter's frosts, and taking it all around we do not think there will be half a crop the country over. In many places the people are wisely ploughing up and preparing to put in some other crop.

The numerous sales of live stock have been well attended, and there is a decided upward tendency in good dairy stock, especially those of good grade milking strains. First-class thoroughbred Shorthorn stock has been in keen demand during the month, and good sales have been made of good animals.

Horses still continue to command high prices for foreign shipment, and for the home market. The various shows held last month brought out a fine display of imported entire horses, especially draughts for the coming season.

The movement to the North-West from rural districts has continued unabated all the month. The severe weather and violent snow storms made it rough work for those who immigrated to the lone land during April.

Prize Essay.

THE BENEFIT OF SALT AS A FERTILIZER AND FERTILIZING AGENT.

The use of salt for fertilizing purposes is a comparatively new feature in Canadian agriculture, although it has long been employed in Great Britain for this purpose. Chemists have agreed upon this fact, that salt enters into the composition of all plants. Hence its necessity in situations remote from the ocean, which are not reached by saline vapors. Salt is not so much a fertilizer as an agent in the work of fertilization. It is, however, absorbed in small quantities into the plant; of this we have undoubted evidence in the fact that straw grown upon salted land will have the saline taste quite perceptible in its joints and at the base of the stalk. This I have noticed more particularly in barley straw, such being relished and eagerly taken by cattle in preference to that from unsalted land. Salt acts in several ways on the land; it attracts moisture from the air and gives it to the soil; it retains ammonia for the use of the plant instead of letting it evaporate (?) It also acts as a

solvent, dissolving the ingredients of the soil, thus fitting them for plant food. In the spring of '79 I carefully conducted an experiment upon a field of barley. The soil was a sandy loam which had been plowed the previous autumn and was in uniform condition. Previously to sowing the salt, which was done before cultivating (and we think this the best time to sow it, as all stirring of the soil tends towards its equal distribution), I staked off two strips, ten yards in width, the length of the field. One of these was left without salt, the other received 400 lbs., and upon the remainder of the field we put 200 lbs. per acre. After this all was worked alike and sown with barley on the 21st of April. Through the growing season I was unable to note any difference in this crop, but as it matured the difference was strikingly apparent in favor of the salt.

In summing up its advantages we have from three to four days' difference in ripening, stiffness and brightness of straw, grain very bright and 1½ to 2 pounds a bushel heavier than that from the unsalted plot. I could not, however, notice any difference in favor of 400 lbs. per acre over 200 in any respect—leading me to believe that 200 lbs. per acre is sufficient to meet all requirements of a grain crop. The unsalted strip was soft in the straw, and badly discolored at the time of cutting, while a very marked difference remained in the stubble long after harvest. I have since that time experimented upon wheat, oats, turnips, potatoes and clover; the two former showing results similar to that of the barley above referred to. The use of salt upon the turnip and potato crop with us has been very beneficial, causing a more vigorous growth, which, we think, in the case of turnips is of great advantage in avoiding long exposure to the fly, and in being ready to thin four or five days earlier. They require a larger allowance of salt than grain crops. We would apply not less than 450 or 500 lbs. per acre for these crops. We have always been able to trace the effects of salt upon grass lands; but we would in addition to 200 lbs. of salt apply 100 lbs. of gypsum. We are convinced by our observations and experiments that the effects of salt will be noticeable for three or four years, according to the nature of the soil. Where vegetable matter abounds its effects are greater, but of shorter duration, and vice versa. Hence we think it not necessary upon the same land every year; of this abundant proof may be seen in grain crops following turnips, where salt had been used in the quantities given above. We have noticed its effects repeatedly in this way, and have been unable to discern any special advantage from a fresh application. It is claimed by some writers that the yield of grain is often doubled by the use of salt. This we think very wide of the mark. From our standpoint of experience we would claim from ten to twenty per cent. directly. It is evident, however, that there are some indirect benefits accruing, such as the consolidation of light soils, the checking or prevention of insect depredations, and giving tone to the elements of the soil not otherwise attained. Different soils require different treatment, so also they require different amounts of fertilizing agents; light soils being deficient in the elements of plant food and naturally porous and dry, require larger amounts of salt than clay loams. We would recommend from 50 to 100 lbs. more.

JAMES SHANNON,
Woolverton P. O., Ont.

Superphosphates.

The use of superphosphates by our farmers is not so general as their merits as a manure demand. Indeed, we might lay it down as a rule that not one farmer in ten, to-day, knows their value. The enquiries which are so frequently made upon this point, and the absence of knowledge found in conversation with our farmers, fully prove this. In visiting Toronto, lately, we called upon Mr. Lamb, of the superphosphate works of that place, and he informed us that there were tons of good refuse manure around the premises, which would be highly beneficial to farmers, but he could not prevail upon them to draw it away as a gift, so little store was placed upon it, and so negligent were they of their own interests. This is also borne out by some of the witnesses who gave evidence before the Ontario Agricultural Commission. Mr. D. Lamb, of Toronto, stated that Canada was the only country in the world that exports bones. The bone that would be available as a fertilizer of our soil is sent to the U. S., where it is manufactured for the use of the crops of the American farmer. Mr. Lamb, who is a manufacturer of bone superphosphate, says: "Of all the material we handle that can be turned into superphosphates, we export ninety-five per cent, and only manufacture five per cent, for use in Canada. We export of over 2,000 tons of bone annually from Canada, and only manufacture 100 tons for use here, and, consequently, the use of superphosphate is very limited at the present time."

Why such a lack of interest is taken in the use of this manure, we are at a loss to know, and certainly it does not appear to reflect much credit on the advanced ideas of the present age. We need hardly say that superphosphate of lime, when pure, is one of the best manurial agents we have, and meets the wants of the greater part of our worn out soils, especially such as have been drained of their phosphoric acid, by continual cropping and pasturing. One of the great virtues of these superphosphates is that they become immediately available as plant food to crops, and have not to go through the long process of rotting, as has barn-yard manure; and hence for root-crops on land not enriched by a plentiful supply of dung, they become invaluable. A few experiments on any kind of crops, especially root, is sufficient to convince the most incredulous of their intrinsic value.

Mr. Whitelaw, of Guelph, details an experiment which he made with bone superphosphate on a field of turnip as follows:

Lot without manure of any kind produced at the rate of	360 bush. per acre.
Lot with 600 lbs. bone dust per acre, cost \$7.50	534 " "
Lot with 350 lbs. superphosphate of lime per acre, cost \$7.50	625 " "

Thus we see for an outlay of \$7.50 there was a return of 265 bushels per acre over the unmanured ground, and nearly one hundred bushels over the lot manured with bone dust. At the rate of 350 lbs. to the acre, which is ample, the cost would be \$5.25 per acre; and the return would be \$26.50, with turnips at 10 cents per bushel. We need only add similar results have been obtained on various crops by different experimenters, which we have not space to give.

The importance of phosphate of lime as a manure may be seen from the fact that it is one of the principal elements in the bones of animals, in the hair, and even in the milk. Besides the animal superphosphate, of which thousands of tons more could be manufactured and utilized by our farmers, we have an inexhaustible store of mineral superphosphate, or apatite, in Ontario and Quebec;

but, as in the case of our bones, the principal portion of this valuable manure is carted away to enrich the soils of the U. S. When attending the agricultural convention we visited Kingston, and Brockville some time previous, and found a keen demand for the raw apatite for foreign shipment, so much so that it had risen from \$15 to \$18 per ton. The Brockville Chemical and Superphosphate Co. manufacture the apatite, and also make their own chemicals for the conversion into superphosphate. They have immense retorts for the manufacture of the sulphuric acid. Indeed, they have everything within themselves employed in making superphosphate, except pouquette to mix with the ground rock to prevent inaction. This is imported from the slaughter houses of Chicago, at a cost of \$30 per ton, whilst there is abundant material for its production in any of our large cities here. Manufacturers have been trying for a long time to bring this apatite in general use amongst our farmers, but hitherto it has been uphill work. The demand has been so limited that manufacturers were compelled to set it at a high price in order to make any profit. And we are fully persuaded were there a keen demand for this mineral superphosphate, so that the works could be run constantly, and turn out a large quantity of the manufactured article, it could be sold cheaper than now. The conversion of this native rock—apatite—into a valuable manure, is simple, and consists in grinding the stone to a fine powder, and then treating with sulphuric acid, so as to render the phosphoric acid in it soluble, so that it may be available to plants and become assimilated.

Those who have used the mineral superphosphate, speak in the highest terms of its value as a fertilizer; indeed, a Mr. Neil Campbell, of Halton county, who was examined before the Commissioners of Agriculture, found the results of the application of apatite equal to that of barn-yard manure, but the cost of the former was less than that of the latter, for he says:—"The superphosphate cost \$40 a ton; the 250 pounds (the quantity applied to the acre) would therefore be \$5. Barn-yard manure, before it is put on the land, is generally sold at about 50 cents a load, so that what we used would be worth about \$10 in the heap. The cost of drawing it, and putting it on the land, is very nearly equal to the cost of the superphosphate altogether, and is therefore much more expensive. At that rate the barn-yard manure put on the land was worth \$15, and the superphosphate was worth \$5, and in the first year the results were the same."

Other experiments made by Mr. Campbell showed that he got 20 bushels of wheat additional to the acre, by using 375 pounds of superphosphate. This should satisfy any of our farmers of its value as a fertilizer.

However, it is generally conceded by experiments that superphosphates are not so marked in their effects upon wheat or grain of any kind as upon turnips, potatoes, roots of any kind, and grass. A barrel of superphosphate will increase a hay crop by as much as a ton to the acre, and a spoonful applied to potato hills will increase the yield fully one-third.

But, in conclusion, it may be stated that whilst superphosphates are amongst the most valuable of manures, should not be concluded that their application will always be attended with equally good results, as it is only when the soil is deficient in phosphates that they are beneficial. Our farmers require to regard two essential points for their guidance in the application of all manures. First, what proportion of particular ingredients of plant-life his several crops require; and secondly, what proportion of such particular ingredients are to be found in the various manures at his com-

mand. However, in nine cases out of ten, phosphatic manures will produce good results, as the majority of our cultivated soils are deficient in phosphoric acid. It may be further stated that the permanent effects of superphosphates depend greatly on the nature of the soil upon which it is applied. On strong calcareous soil, the lime is apt to absorb the sulphuric acid contained in the manufactured phosphates, and cause it to revert back, or to be changed to its original state of an insoluble phosphate. Owing to this action the raw bone dust is certainly preferable for land having a limestone foundation.

We would commend our farmers who have poor land, to try superphosphate for a year, upon their root crops especially, and mark the results, and thus not allow such a valuable fertilizer, which is in such abundance amongst us, to be sent away to other countries to enrich their soils.

Explanation.

The exalted position to which the FARMER'S ADVOCATE has attained has been gained by its continued persistency in supporting the farmer's interest, and not being subservient, or using the name of the journal for other purposes. The ADVOCATE has condemned in strong terms any measures that have been taken detrimental to the farmers' interest. It has also supported any steps taken for their advancement.

There have been and perhaps still exist some parties who have endeavored to subvert the real interest of the farmers, and use agricultural names and influences against their real interest, and make them subservient to other ends. We have condemned such, and from acting fearlessly for your interest, we have at times aroused great and strong feelings against this journal by strong party men, and attempts have in various ways been made to check the influence of your ADVOCATE. Still, despite this, and large sums expended to oppose this paper, every year has increased its circulation and power.

One of the greatest opposing powers has been the Board of Agriculture and Arts. Every year this body has been gradually weakening. The ADVOCATE has for years condemned the most injurious management of this institution; and to such an extent have these injurious measures been exposed through us, that the total annihilation of the body is seriously threatened; in fact, we may say the old body is literally dead, as the sweeping alteration of the Act governing it has so changed it that its position is changed to that extent that the Provincial Exhibition, the very purpose for which the body was established to carry out, may now be abandoned by it, according to the last alteration in the Act.

For many years we absented ourselves from the meetings of the Board, but at the last meeting of the old Board we put in our appearance merely as an observer or reporter; and when this Board evinced a stronger desire than we had previously seen to act in conformity with the wishes of the farmers, we greatly appreciated the apparent change, and being inclined, as we always have been, to aid them when such is the case, and now believing that there is influence enough on the Board to carry out measures that may be for the interest of the farmer, we shall be inclined to help them as long as such is the case.

Although we have said much against the old Board of Agriculture and Arts, and we believe that much injury has been done by it, still we have never been of the opinion that it should be entirely overlooked, as much good had in previous years been done by it. Our object has been and still is to improve it. It should be a useful institution,

and we believe it can yet regain the confidence that was placed in it. If we continue to find symptoms of a desired improvement, we will lend our aid to its encouragement. All that it requires is the encouragement of the dissemination of light for the promotion of truth and justice, confining these three cardinal points to the main interest of the prosperity of agriculture. As the present Board have condescended to enquire of us for information, we will with pleasure aid them to the best of our abilities. At the same time we will not refrain from exposing any erroneous steps that may be taken by the Board as fearlessly as heretofore.

The following correspondence has passed from the office of this paper to the Board of Agriculture in Toronto on this subject:

Office of the F. A., London,
22nd March, 1882.

To the President and Members of the P. B. of A.
& A., Toronto:

GENTLEMEN,—I was much pleased to observe at the last meeting of your Board what I conceived to be a stronger desire to act in unison with the wishes of the farming community, than I had noticed at any previous meeting during the past 14 years; and when you put to me the question what would be the proper steps to be taken with reference to the Herd Book, I considered the point so important and your request for advice so proper, that I would not answer without due consideration. I have in the interim studied the subject, and think that I can now suggest a plan. As its elucidation will involve the discussion of many minor details, I ask you to appoint a committee of say two, to meet me, and I will lay the whole subject before them and will endeavor to place them in a position to obtain the verdict of the farmers themselves upon that and any other subjects which come under your control, and by this means bring your Society into more cordial co-operation with the whole farming community.

I remain, gentlemen, your obt. servant,
W. WELD.

FARMER'S ADVOCATE OFFICE,
April 10th, 1882.

GENTLEMEN,—In compliance with your request, I now submit the following propositions in regard to publishing the transactions of or other matter selected by the Board of Agriculture in my journal:—1st. I will publish monthly any useful and important information which may be gathered or selected by your Board, or by the School of Agriculture, such matter to be revised and approved by two members of your Board appointed for that purpose. 2nd. That I will make no charge for the publication of such matter, provided it is free from special notices of an advertising character, and contains nothing injurious to the interests of our farmers or to my journal. 3rd. The space to be occupied by these selections not to exceed three pages in consecutive order, chosen by myself, and the whole to be under a special and distinctive heading.

Yours respectfully,
W. WELD.

To the President and Council of the Board of Agriculture, Toronto, Ont.

In compliance with this the Board of Agriculture have appointed two of their members to act in this capacity.

English Letter—No. 36.

[FROM OUR OWN CORRESPONDENT.]

Liverpool, April 6th.

The season so far has been quite abnormal; a fine, dry March has enabled the farmers to get in the spring corn well, and there is more grass than I ever remember at this time of the year. At length, however, we are having a taste of our old spring enemy, the east wind; and as the plums, cherries, &c., are in full blossom, mischief is sure to be wrought,

The interest in your Great North-West gathers momentum every week. A land corporation, of which the Marquis of Lorne's brother is at the head, is being formed for the purpose of colonizing lands in the North-West, and I understand that Captain Wyatt is engaged as a pioneer to go in the course of a few weeks to the lands which they intend securing. A whole host of land and stock raising companies, with the Canadian North-West as their base of operations, are being promoted; but like all new ideas, there is great danger of the thing being over-done, and intending investors will need to use all their discriminating powers. Some cannot possibly succeed; and I see that Colonel McNeil, so well and favorably known in Canada, has joined the directorate of one of the cattle companies. Perhaps the gallant Colonel may pilot it to success; otherwise I cannot see how it can possibly hope to compete successfully with the private enterprise which now commands the trade, and has the great stimulus of private interest—always more likely to make the best of a market than the most conscientious of agencies, on which, over so vast and thinly stocked an area, the company must mainly rely for its supplies. Stock ranching seems a more promising speculation for the Dominion, and is receiving a proportionately large share of attention. W. Stavely Hill, M. P., who visited Manitoba last year, has joined several capitalists for the purpose of forming a large ranch.

It has not yet been decided, yet I believe that many special farmers' delegates shall be sent to Canada from this country during the coming season; but I understand that W. Dyke, the energetic representative of the Dominion Government at this port, has arranged with several of the tenants of Lord Derby, Lord Sefton and other of our great landed magnates, to visit Manitoba. A party of well-to-do farmers from Lord Sudley's estates in the west of England, are also arranging for a run over with the intention of thoroughly examining into the advantages of your Province before going farther west.

The emigration is realising, and more than realising my expectations; which, founded on the enormous proportions of the inquiries addressed to the various agents here, were, as you know, considerable. I think I am right in saying that the number of persons now leaving for the Dominion far exceeds, and indeed at least doubles, the figures of any former corresponding period of the year. The real difficulty is to get adequate steamer accommodation. Yesterday the Allan Co. had to put on an extra steamer.

Polled Aberdeen cattle are getting more into favor with English breeders, and very heavy prices are being obtained for choice animals, three figures in pounds being frequently reached.

Mr. Geo. Wilkin, one of the recent delegates from Aberdeenshire, has bought 140 polled cattle for the Dominion. They are to leave in the Dominion steamer, "Texas," for Quebec, on the 16th inst. I hope to be able to refer to this lot again.

The London and North-Western Railway Company are making attempts to establish a great cattle market at Crewe, in the heart of Cheshire, but the government are not likely to relax their regulations, which might admit diseased cattle from abroad into the heart of one of our greatest dairy districts.

Some very fine cattle from New Brunswick arrived here the other day, and though rather knocked about by the rough passage, they realised a good profit.

Sheep here are very dead; and the lambing season, notwithstanding the favorable weather we have had, has not been altogether prosperous. The ewes do not appear to have recovered the bad times they

have had; and one friend of mine has lost two-thirds of his stock. Many which appeared well died suddenly, and on examination their livers were found to be quite rotten. I am by no means sure, therefore, that those of your exporters who can send a good supply of well-fed mutton will not have as good a result as their compeers in horse-flesh, beef or corn.

The horse trade is decidedly improving here. Messrs. Hendry & Douglas recently landed a few lot of Canadian carriage horses shipped from Hamilton, and not one remained unsold in 48 hours. The demand for Canadians of the right class is, in fact, exceedingly good; and their reputation is now fairly established here. At the same time your breeders cannot do wrong in getting as many of our first-class stallions as they can possibly afford; all your best class of horses appear to lack is a touch of quality or breeding, which our best blood will supply.

Anything relating to Ireland must almost of necessity trench on politics, but the foolishness and nearsightedness of agitators who try for impossible things, whilst you and your neighbors are quietly taking their place in our food markets, cannot be too much deprecated. If, as Robbie Burns said, "if some of them could only see themselves as others see them," they would soon change their tactics.

Manitoba Letter.

[FROM A CORRESPONDENT.]

WEST LYNNE, MAN., March 18th, 1882.

The weather this month, up to the present time, has been quite changeable, with frequent falls of snow, and the farmers are taking advantage of good sleighing to market the remainder of their produce. The roads continue to be fairly animated with teams, and strangers wonder at the life which is thus in a constant stream from morn till night. Prices for all kinds of farm produce remain firm, with the exception of wheat, and the price of that commodity has had a downward tendency. The ruling price during the month has been 82c. per bushel. Flax will be extensively cultivated this season, as our soil and climate have proved admirably adapted for the growth of that product. Mr. Piper, successor to Mr. Erbach, late representative of the firm of Livingston & Co., intends to distribute over 3,000 bushels at this place for seed to sow the coming season. Parties obtaining seed from Mr. Piper bind themselves to return five pecks in the fall for each bushel of seed obtained from him in the spring, and also agree to sell at the highest market price the product of the seed thus obtained to the above named gentleman. Farmers that obtained seed last year on those conditions from the same firm, have been well satisfied with the result. Mr. Piper is also endeavoring to get farmers to grow it for the fibre, and is going to test it on a small scale for that purpose, in different sections and localities of the Province. He thinks that the only difficulty as regards manufacturing the fibre will be the rotting of it, as the atmosphere is so dry in the fall that the rotting process will have to be deferred until the following spring. The farmers are making calculations and preparing for seeding, and if the season is at all favorable for farming operations, nearly double the quantity of grain will be sown this spring than in any previous season. Yet, the mind cannot fathom, nor the fondest anticipations foreshadow, the future agricultural resources of this young and growing Province, with its limitless wheat-fields and thousands of acres of rich and fertile land, lying awaiting the husbandman, and homes without number beckoning the sturdy immigrants who are only just now beginning to realize the great

possibilities our country has in store for them. Official information given by Mr. Pope, places the immigration that came into this Province last year at 28,595; of which the Province of Ontario and Quebec furnished 21,514; United States, 2,798, and other countries, 4,321. This year the immigration bids fair to be double that number, as the tide of immigration has already commenced to flow, and hundreds are arriving every week. Consequently a good many cannot find lodgings for themselves and families, and have to suffer great inconvenience on that account. It is a mistaken idea for intending settlers to bring their families here so early in the season, unless they have a location picked out and suitable accommodations provided for them. A novel and convenient plan has been adopted by some of the settlers leaving this point for the Turtle Mountain District and other parts of the West. They build small houses, furnish them with stoves and other necessaries, place them on runners and convey them with teams, thus making it comfortable and convenient for their families on the journey to their new homes, and they also make comfortable dwellings for them on their arrival at their destination.

The directors of the Morris Electoral Division Agricultural Society have been alive to the interests of the society, and, at their last meeting, instructed the secretary to order a quantity of Scotch Fife wheat from Ontario, to be distributed among the members of the society for seed. The directors also intend to purchase a quantity of land suitable for a show ground, and erect buildings upon it for the use of the society. The real estate fever is a very contagious disease, and it is spreading rapidly, affecting a good many of the old settlers, and causing them to sell at long prices. Five farms have been sold in this locality since the first of the month, at prices ranging from \$25 to \$40 per acre, and a farmer informed your correspondent that he had been offered \$60 an acre for his farm and refused it. Horses are arriving in large numbers from Ontario, and all the available stable room at this place is full of them. Still the demand is good, and the dealers meet with ready sale for them at good prices. A locomotive steam plow is to be used in Manitoba this coming season. The engine and plow is built and fitted up in Hamilton, Ont., and will be shipped to its destination about the last of this month. And the inventor, Mr. William Stephenson, is so sanguine of its success that he has made arrangements with the proprietors of the Low Farm to cultivate it for a number of years. The farm contains upwards of 6,000 acres, and is situated 25 miles north-west of this place.

[We regret that the above letter was received too late for our April issue. We had the copy prepared for the press when it came to hand.]

Stock Affairs in Scotland.

[BY OUR OWN CORRESPONDENT.]

During the last four weeks breeders of pure stock in the north of Scotland have had a busy time of it, preparing for the spring sales of bulls which have just been concluded. The great centres for these sales are Aberdeen and Perth. As showing the extent of business—for business it may be called—carried on by breeders in the northern counties, it may be mentioned that in the course of the last twelve months, 1,390 pure bred cattle were sold by auction, and realized a sum not much under £40,000; the average per head being nearly £29. Of the cattle sold, 940 were of the Shorthorn breed, and 450 of the Polled Aberdeen or Angus breed. The result of the spring sales, at which the greater proportion of

the stock exposed are young bulls, shows a great improvement on former years, alike in regard to the character and quality of the animals and the prices which were given. The most remarkable thing about the season's trade has been the extraordinary keen demand that has sprung up for the Polled bulls, not only from your side of the Atlantic, but at home, where I know of a number of farmers who formerly used Shorthorn bulls for crossing purposes, and have now departed from their usual custom and gone in for the "black-skins."

One of the causes which has led to this change—a change which must greatly enhance the value of Polled bulls—is that this class of stock, when put to Shorthorn or cross cows, generally leave produce resembling their paternal parents. And, as in this country, the cry is for nothing but black, it is a point of no small importance to produce Polled crosses which, apart from the matter of color, are of great individual merit, and sell readily in the market. Within the last few weeks a large number of Polled bulls, purchased chiefly by private bargains, have been shipped to the United States and Canada, to be used, I understand, principally for crossing purposes, and several other lots are to follow in the course of the next few weeks. In addition to these, several well-bred females have recently been sent out to U. S., Canada and New Zealand to lay the nucleus of Polled herds in these countries, and a few big consignments await exportation. Messrs. Cochrane & Pope, Canada, have been fortunate in securing, through the agency of Mr. Wilken Waterside, of Forbes, Aberdeenshire, some of the finest Polled cows this country can boast of; while Messrs. Gudgeon & Simpson, and Henry & Matthews, Kansas, U. S., have among them, within the last few weeks, bought about 100 head of Polled cattle, with a good proportion of males, some of which were shipped from Liverpool last week. The consequence of this unprecedented demand for Polled Aberdeens has been to raise the prices given for Polled bulls at one great joint sale held at Aberdeen this month, where most of the principal herds in the North of Scotland were represented, by at least 50 per cent. Eighty-one bulls brought an average of £31 5s 7d. The highest price offered was £90, but the animal being reserved at £95, was withdrawn. At the joint sale of Shorthorns, held at Aberdeen on the 16th inst., 204 bulls, chiefly yearlings, made an average per head of £26 3s 11d. The drawings at both sales, inclusive of females, a few of which were offered, amounted to about £8,500. The turn out of Shorthorn bulls showed a great improvement on those I have seen sold here for the last few years, and while the average is not so high as for the Polled bulls, it is better than at the corresponding sale of last year. The mildness of the past winter enabled breeders to turn out their stock in better trim than usual, and altogether, the position and prospects of farmers are much brighter than they have been for some time, while their stocks at home will, generally speaking, be put out to the pastures in good condition.

The Canadian Shorthorn Herd Book.

Herd Books were first established by farmers in keeping correct accounts of the products of their stock for generations. Any farmer can establish his Herd Book. By farmers uniting much greater work can be accomplished than one single farmer has power to perform. In England the Shorthorn breeders have established their Herd Book; in the United States there are five or six Shorthorn Herd Books, and none of these are aided or supported by the Government. The Canadian Shorthorn Herd Book may be considered as a Government institution, as the managers of it are under Government pay, and are under the control of the Government. Animals are admitted into the

English Herd Book that have four crosses. This was argued by members of the Board to be sufficient reason to admit of the same being permitted in Canada. This was claimed to be done for the advantage of a few individuals, although, the original Herd Book only admitted of animals that were registered in the English or American Herd Books, and their descendants. Many breeders of really first-class animals were so dissatisfied with the lowering of the standard, so as to admit of four-crossed animals being registered, that they would not register in the Canadian Herd Book. These gentlemen and others united and determined to establish a Herd Book that should stand higher in reputation than the publication of the Agr'l Ass'n and rejected all the four-cross animals and their descendants. The Association, fearing that the new Association would detract from the interest in their Herd Book, endeavored to regain the confidence of the Shorthorn men by altering the laws governing their Herd Book, and cutting out all four-cross animals and their descendants. This step has not satisfied either party, as the new Association will not become entirely subservient to their views, and those that had purchased animals having four crosses, and had registered their stock, had acted on the supposition that their animals would be eligible to exhibit, and would sell as well as other registered animals. The present alteration causes very great complaint from those whose stock have been struck off the book. It might perhaps have been an act of justice to maintain the Herd Book as it was, particularly as the act took place without any sufficient notice having been given, or any discussions on the subject having taken place.

The meeting during the time of holding the last Provincial Exhibition was got up purposely for, or by the managers of the new Herd Book. The managers of the new Herd Book have a perfect right to manage their own Herd Book as they deem best, as they are entirely independent of Government patronage. The names of all that had purchased stock bred from four-crossed animals should have been obtained, and as some have written to us about this, complaining of the injustice of this step, it might yet be judicious to ascertain from those affected by the change whether the four-cross stock should or should not be entered in the Government Herd Book. For the real beef-producing qualities, fertility and profit, to the majority of the farmers there would be but very little difference, as so many of the four-cross animals that are now cut out of the Herd Book are entirely superior to many that are left in, in every way except in paper pedigree, and will sell and have sold to the real practical farmer at higher prices, and can be as well relied on to produce good stock. In fact, in the show ring they can often surpass the longer pedigreed animals. We look on it that it should be the duty of the Association to use their means for the advancement of the interest of the plain, practical township farmer. There is no fear but the new Association are fully able to look after their own interest. We coincide with the views of our subscribers, and consider that in justice to them, as they have built up their herd in the expectancy that the Association would carry out their plan, it should be done at the present time, and that they should not publish a Herd Book without the four-cross being entered. They might, after giving due notice, abandon the publishing of a Herd Book of any kind, and perhaps it would be just as well for the country if they left the Herd Books entirely in the hands of the farmers. It is our opinion that greater publicity of any proposed changes should be given, and discussions should take place before great changes are inaugurated. This change and many others have been too hurriedly brought about for the permanent benefit of agriculturists.

Transactions of the Board of Agriculture and Arts.

The following business was transacted at the meeting of the Board of Agriculture and Arts, held in Kingston, on April 12th, 1882.

The President, in his opening remarks, explained that he and the Secretary had waited on the Hon. Mr. Wood, Commissioner of Agriculture, in reference to the alteration in the Agricultural Hall, and other matters, and he had suggested that the Government do all the work in connection with the changes already agreed upon, and that they make an estimate of the portion agreed to be paid by the Council, which could then be paid by the Council to the Government; he also laid upon the table a plan of the alteration prepared by W. Tulley, the Government architect.

The arrangement was approved of by the Council.

A discussion then took place on the requirements from the city Kingston. The Mayor announced that he had been authorized by his Council to guarantee that the list of improvements submitted would be furnished. W. Weld, of London, who was in attendance, addressed the meeting on the subject of accommodation for the visitors to the city of Kingston during the exhibition, and made some sensible suggestions.

A letter was also read from W. Weld, of the FARMER'S ADVOCATE, stating he would publish the minutes of the meeting of the Council on certain terms, also another from the same gentleman, stating that this year he would give on behalf of the FARMER'S ADVOCATE, another special prize of \$100 for the best herd of cows; particulars to be furnished hereafter.

A letter was also read from the Commissioner of Agriculture to the President, stating that he had been waited upon by a deputation from the Industrial Exhibition, complaining that the date on which the Provincial had fixed for its exhibition would clash with the date already appointed by them, and in that he made no suggestion, simply informing the Council he had been waited on, and left it with them to act as they thought proper under the circumstances.

The FARMER'S ADVOCATE prize for best herd of cows was accepted.

A deputation from the Eastern Dairymen's Association then entered the chamber, and the President stated that they had passed the following resolutions:—That this Association grant \$250 to be given to the Treasurer of the Provincial Exhibition, to assist in holding a cheese and butter show in the city of Kingston next September, with the understanding that the Provincial give an additional grant of \$500 to assist in said exhibit. Also the sum of \$100 to assist in the manufacturing of cheese and butter at the time of holding the Provincial Exhibition.

Before the meeting adjourned a communication was received from the President of the Industrial Exhibition, of Toronto, stating that they had changed the date of holding their exhibition, now to commence on the 4th and end on the 16th of September.

The Potato Crop.

A few years ago we had but few varieties of potatoes to select from. It has, however, been found necessary to procure new varieties. The old sorts had lost much of their hardy and productive qualities. The potato disease wrought a great change, and some varieties that had been most esteemed disappeared entirely. One of the first of the new sorts that in some measure resisted the potato rot, was the Chili, both purple and garnet. It was originated by Mr. Goodrich from the native Solanum. The introduction of new varieties, and the increased care in culture, added to the more favorable seasons, have greatly checked the disease. It is well, however, to bear in mind that unfermented manure and late planting, may, in a wet, foggy season, cause its re-appearance. Of the varieties of potatoes now generally grown, none has been so productive of benefit as the Early Rose that was introduced here by the Agricultural Emporium. It ranks among our earliest and hardiest varieties. The Late Rose, of more recent introduction, is said to be a heavier cropper but is inferior for table use.

Of the many experiments to test the qualities of a number of potatoes that have been lately introduced, a report published in the Rural New Yorker gives a detailed result which we here abridge, as far as it relates to varieties known in Canada:

Alfred Rose tested eighteen varieties of pota-

toes. He cut from each variety of potato 200 single eyes from potatoes weighing five to six ounces each. They were all planted May 2nd, in a rich, sandy loam soil, using ten loads of farm-yard manure to the acre. The potatoes were planted in rows 100 feet long, side by side, three feet by one foot apart in the row, two eyes in each hill, covering the seed three inches deep.

Nearly every hill showed sprouts ten days from planting. The seeds were all out five days before planting, dusted with plaster and lime. They were cultivated twice and hoed twice, and dusted with plaster and Paris green twice. Most of the varieties ripened with the Early Rose, all except three, within 3 months after planting.

The largest single potato was a Magnum Bonum, weighing 3½ lbs. Of this variety he says it ripened ahead of the Early Rose. He considers it quite a superior potato. It was first introduced by Sutton, the eminent seedsman of London, England.

The Early Rose is said, by some, to have degenerated, and to have nearly run out. We do not coincide with that opinion. A change of seed is all that we have found necessary, in order to ensure a good crop. The Early Vermont is very similar to the Early Rose in all its good qualities.

The Beauty of Hebron is very highly spoken of. It is said to be of a superior quality to the Early Rose, and to be, at least, as early and a heavier cropper. Some are discontinuing the Early Rose and planting the Hebron instead.

The Early Ohio.—It is claimed by some that this is the earliest of the early varieties. It is good for table, but not so productive as some others.

The Burbank is spoken highly of by some, but reports are not so favorable concerning it as of the varieties already mentioned. The St. Patrick greatly resembles the Burbank, but ranks higher in public favor. It is a vigorous grower, has no hollow or core as some others have; is very productive and well flavored.

The Susy was introduced from the Maritime Provinces into Ontario by the Agricultural Emporium. It is a good cropper and a valuable late potato, keeping well till late in the season.

The White Elephant we would not recommend from what we have seen and from the reports we have heard.

The Scotch Champion is said to be quite disease-proof. It is a very heavy cropper, and is well worthy of trial.

Feeding Pasture Land Early in the Spring.

Some farmers have an idea that they make a great saving by turning out to pasture their young cattle and sheep as early in the spring as it is possible for them to get a living. It is true, by so doing they save their hay, but they lose more other ways than they gain in this. Sheep and cattle when turned out to pick up their living on short feed, rapidly lose flesh, and if the sheep have lambs that are young, the lambs not only suffer in consequence of short feed, but they also suffer by the sudden changes of weather. This alone would be sufficient reason for keeping them in the barn a few weeks longer. It may be said that the sheep may be housed nights and in bad weather, and that both the sheep and cattle can be fed enough to keep them in good condition. This is true; but there is another reason why it is not best to feed pastures too early, which is by beginning to feed as soon as the grass starts, it is kept fed close during the entire season, because by close feeding early in the season, the grass roots are so exposed to the sudden changes of early spring, and then to the scorching rays of the summer sun, that they become greatly weakened, if they do not entirely die out, and leave room for some noxious weeds that are always ready to occupy any spot that is not occupied by the grass.

Many pastures are injured by feeding before the grass has got high enough to show green. It is much better to keep both cattle and sheep in the barn until the grass gets well started. By so doing it gives time for the land to get well covered with growing vegetation. Thus protected the land retains the moisture, and is kept in a condition to furnish good feed throughout the season. If pastures are not fed early it gives an opportunity to sow grass seed on the bare spots, and get the young plants well started before the stock is turned in. When we understand how to better care for our pastures, we shall not only keep our stock out until the grass has got a good start, but we shall be as particular to manure them as we

now are to manure our mowing lands, and thus we shall be able to keep more stock to the acre, and keep them in a better condition. How best to manage pasture lands is one of the important subjects which is now occupying the attention of intelligent farmers.—[Mass. Plowman.]

Good Farming Profitable.

Joseph Harris, a good authority on farming, calculates the loss by poor farming and the profit from good farming as follows, taking an acre of corn as an instance of both failure and success. He says: "Farming is a poor business," said the deacon. "Take the corn crop. Thirty bushels per acre is a fair average, worth at 75 cents per bushel, \$22.50. If we reckon that for each bushel of corn, we get 100 lbs. of stalks, this would be a ton and a half per acre, worth at \$5 per ton, \$7.50."

Total receipts per acre for corn crop, \$30.00

EXPENSES.

Preparing the land for the crop..... \$5.00
Planting and seed..... 1.50
Cultivating, three times, twice in a row both ways..... 5.00
Hoeing twice..... 3.00
Cutting up the corn..... 1.50
Husking and drawing in the corn.... 4.00
Drawing in the stalks, etc..... 1.00
Shelling and drawing to market..... 2.00

Total cost of the crop..... \$23.00

Profit per acre..... \$7.00

"And from this," said the deacon, "we have to deduct interest on land and taxes. I tell you, farming is a poor business."

"Yes," I replied, "poor farming is a very poor business. But good farming, if we have good prices, is as good a business as I want, and withal as pleasant. A good farmer raises 75 bushels of corn per acre, instead of 30. He would get—

For the crop, including stalks..... \$75.00

EXPENSES.

Preparing the land for the crop..... \$5.00
Planting and seed..... 1.50
Cultivation..... 5.00
Hoeing..... 3.00
Cutting up the corn..... 1.50
Husking and drawing..... 10.00
Drawing in the stalks..... 3.00
Shelling, etc..... 6.00

Total cost of the crop..... \$35.00

Profit per acre..... \$40.00

Here is a cud worth chewing. Any one who cannot learn a lesson from this would not be persuaded though one rose from the dead.

Notes on Hop Raising.

As it is the second year after planting a hop yard before any revenue can be derived from it, and quite a large outlay is required to begin the business, it should be entered upon deliberately and with the view to following the business a term of years; otherwise the producer will be almost sure to lose both time and money. A farmer should possess sturdy independence of mind, and not get a mania for a kind of business for which he is not fitted; just because his neighbors are all going into it; often to do what others do not do pays best.

Hop raising, unless in a place where but little else can be done, is more of a gambling crop than any other, because the profits may be very large, or they may with the same expense and labor be very small, or less than nothing. Almost every other crop pays something always; hops are not to be depended on in that respect. One serious drawback to the business is what one must endure from hop pickers. The hop crop must be gathered when ripe within about two weeks' time, and where there are many yards there must be large gatherings of pickers, and for some unexplained reason those who pick hops seem to think that good manners and everything else of that sort must be left at home. Of course there is no rule without exceptions, but the decorously behaved are a small minority. Youths of both sexes, well brought up and ordinarily well behaved, become often in a hop yard rude and coarse, and if the poor head of the house ventures on a remonstrance they either quit or threaten to, or become more offensive in their boisterous ways. The annoyances connected with a business are to be taken into account as well as its profits.

Veterinary.

SIR,—I have a horse that is very sick. He was idle from Friday till Wednesday. I went to draw hay from my back farm, about one and a half miles; he was in good spirits when we started, and appeared to feel well. When I got about half way he appeared a little dull, and when I got in the barn he was in a lather of sweat. I sent my son home with him, put him in the stable and blanketed him well, and brought another horse. When he came back he said the horse was worse. Then I went home, and with much to do we got him out in the shed. He lost all power of his hind part. He was this way for about ten days; he tried to get up, and two men lifted his hind part, but he could not stand. He got some better and we got him in the stable again. He gets up now himself, but he can not stand long. When he is up he is constantly stamping with both hind feet, moving from one to the other; he is this way for about ten days. He squats down behind as if he wants to make water, but he don't make water. He has a passage; we saw him several times pass water. He gets no ease, only lying down. Can you or any of the numerous readers of the FARMER'S ADVOCATE tell what is the matter with the horse, and what would cure him?

M. H., Matilda, Ont.

[Yours is a case of "Azotuna," or congestion of the muscles of the back and kidneys, which was brought about by standing in the stable, being highly fed, and not getting sufficient exercise. Treatment—Administer a dose of purgative medicine, as Barb. aloes, 6 drams; Carb. soda 2 drams; ginger 1 dram; followed by gentian 2 drams; Carb. soda, 2 drams; Nux vomica, ½ dram. Night and morning apply a stimulating liniment to loins, as tinct. arnica, tinct. camphor, tinct. opium, equal parts, twice a day. Give soft diet, as bran mash, and give a little exercise every day. If he does not pass his urine freely, it should be drawn off by means of the catheter.]

SIR,—I have a horse five years old that is subject to swelling at the side of the sheath, and sometimes breaks out. It is like an abscess in appearance. Please give cause and remedy. It broke out twice this winter and once last.

H. M., Glen, Ont.

[It is difficult to say just what is the cause of the abscess; may be the result of being castrated improperly, or the presence of a foreign body becoming lodged in the sheath. Treatment—If matter is formed, open the abscess carefully and allow it to escape; after apply a solution of corrosive sublimate, 5 grains to the ounce of alcohol, for a few days, followed by carbolic acid, 1 part to 16 of water twice a day.]

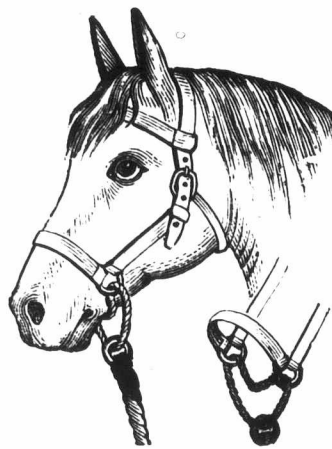
SIR,—I have a herd of cows pasturing on low ground and drinking water not running. Two years ago some of them began to pass blood in urine, which continued till the cows got weak and seemed bled to death, accompanied by looseness in bowels. Some died, others I killed, but two I opened and could find nothing wrong except in liver and small intestines, which had a black appearance. I had two still which seemed to have just taken it. I gave them lime water to drink, which they seemed very fond of, and I have seen nothing since. Now if it should return on them when put on pasture, what is best to give them, and what is the disease? Would the beef be good fattened on first appearance? They seem to have a craving appetite all the time.

H. K., Chiliwhack, British Columbia.

[Your cows suffered from "Haematuria," or bloody urine, which was no doubt caused by the water or certain herbs they had partaken of while pasturing on the low wet lands that you speak of. Treatment—The first step in the treatment of this disease is the removal of the cattle to higher lands. See that they get a sufficient supply of pure water. Administer a purgative, as epsom salts 1½ lbs., ginger 1 dram, carb. soda 2 drams, dissolved in a quart of tepid water. This to be followed by astringents, such as powdered opium ½ dram, powdered catechue, 2 drams, infusion of quassia ½ pint, given night and morning. At the same time support the system by means of good food, hay tea, etc.]

Hints and Helps.

Halter for Pulling Horses.



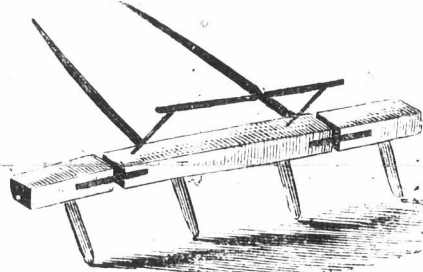
The contrivance herewith illustrated is a very sensible one for breaking horses of the bad habits of pulling at the halter. It consists of an ordinary ring halter, with the two side rings connected by a strong, flexible cord; whenever the horse pulls, the inner part of the cord is drawn forcibly against his jaw, and the effect is a severer punishment than he is willing to endure.

Barrel Fountain.



We give herewith an engraving of a drinking fountain made out of a barrel. It has a small tube extending from the cask to a shallow dish or pan, which should be small, so that the fowls cannot get into it and soil the water.

Corn Marker.



The worst difficulty with the ordinary three or four tooth corn-marker, results from the inflexibility of the long bar to which the teeth or markers are attached. In passing over uneven ground some of the teeth will not touch the earth, and consequently, the planter must guess at the position in which the seed should be planted. The marker illustrated is constructed to surmount this difficulty, two joints being made in the bar, which allow each tooth to make its proper furrow on a very uneven surface. The joints are made by sawing the bar apart at the places indicated in the engraving, thus connecting the sections by bolting on 2 stout iron straps, the bolts passing entirely through the bar of wood. Four straps of light wagon tire iron, each six inches long, and four six inch bolts, will make the two joints. A space of one inch left between the sections of the bar will give sufficient flexibility to it for the purpose required.

Our Farmers' Clubs.

South Oxford Farmers' Club.

At the meeting of this club, held in Ingersoll, there was a good attendance of members. The subject for discussion was roots. Mr. T. Mayberry had been appointed to deliver an address on the subject. We can only give an abridgment of the very beneficial remarks by him and other speakers. Mr. Mayberry said the root crop will rank of higher importance than it does at the present day. Five years ago he experimented with root feed, giving a small pail full every morning to his cattle, on which they fattened and thrived well. It is said that roots contain only 10 per cent. of fattening quality, but he believed a proper analysis would give a better showing. Roots also had a beneficial effect upon the cattle fed with them. As to the best root for feed there were differences of opinion. Arnold maintains that mangolds are the best; Hoffman quotes that turnips cannot be fed without imparting a taint to the milk. If the latter were mixed with grain the taint would not be in the milk. Sugar beets he (the speaker) considered the best root, for the cultivation of which he ploughed deep in the fall. He planted mangolds in rows 12 to 15 inches apart and sugar beets 10 to 12 inches. His choice was the Mammoth Long Red in mangolds, because they stand considerable frost. He considered a lightish loamy soil the best for mangolds, the clay soil being better for turnips. The sugar beets, he continued, were bad to harvest, but they were better keepers than turnips, and yielded best.

The chairman, in reply to a question, said he thought the White Silesia Sugar Beet the best to cultivate.

Mr. Sebbens stated that he had succeeded better in carrots than in any other root; had never seen larger than he had raised. They required deep loam soil, rather sandy. He raised a good crop of carrots on a piece of sod, turned over in the fall, ridged up in the spring, with very little manure put on. He could not always succeed in raising turnips. Carrots cultivated after potatoes, and turnips after carrots, he found did well. Last year he met with good success, securing 700 bushels of carrots and mangolds together from half-an-acre of good ground. He sowed mangolds 2 ft. apart and in rows 30 inches apart; a carrot between each mangold. He first seeded the carrots with a drill, and used the corn-planter for the mangolds. For sowing the latter the corn-planter was the best thing out—better than putting in by hand. It was an advantage to mix the crop; one crop appears to help the other. A turnip crop is the hardest on the land, and no crop succeeds after it except it be barley.

The Chairman—They should take a leaf out of the English book. In the Old Country they raise turnips to clean the land. The land was very foul after a wheat crop, and turnips were found to clean and improve the land. It was of no use sowing turnips on cloddy ground; the ground must be mellow. In the Old Country a great deal of artificial manure was used. He could not succeed in raising turnips.

Mr. Sebbens, in reply to questions, stated that he sowed carrots 10 inches apart. If a dirty piece of ground was chosen it would cost more to raise the root crop than it would be worth. They could clean the ground better after taking off the crop in the fall.

Mr. W. H. Cook—They should thoroughly clean the ground for roots as well as for grain.

Mr. G. H. Cook—Carrots were his favorite root, in raising which he had been most successful. Carrots come on best after potatoes or corn. The land should be rich and clean. He put them 20 inches apart. Had raised 2,000 bushels carrots to the acre, proving very large, their average weight being 4½ lbs. each, while some weighed as high as 6½ lbs. He had raised another crop, on heavier ground, planting 16 inches apart, which proved not so large. It was a very great crop nevertheless. Manure the land well, and make it clean, and a successful crop will be the result.

Mr. W. Nangekivi—In root culture he had quite a limited experience. The carrots he thought were the best to harass the Canada thistles. He knew of no land too firm for mangolds. Preferred the Yellow Intermediate. Turnips require a lightish, sharp soil. They cannot succeed in farming for a number of years without going from the farm for other manure. Put artificial manure on crops and the result will be very remunerative. They should expend \$20 an acre in artificial

manure, which sum would secure them 1,000 lbs. of phosphate and 400 lbs. plaster. Had no faith in salt. Some manage with \$12 to the acre in artificial manure. A turnip crop yielding less than 600 to 700 bushels to the acre was a failure. The actual outside cost was \$45 dollars an acre; the crop real zing \$75, at least, leaves a good margin of \$30 to the acre for the work. He knew of no system of farming that pays better than the carrot crop. In sugar beet culture he had no experience. Had no doubt, however, that it was the coming crop. Turnips have a number of enemies to contend with, which was a considerable drawback to raising this crop. Some very valuable suggestions had been made at this meeting. Mangolds improved one-third by keeping, and produce a better quality of milk and butter. Carrots are the most nutritious root grown. Cattle fatten faster on this food than on any other, thirty per cent. Seventy pounds of carrots were equal to one hundred pounds of turnips.

Mr. R. Williamson contended that the principal thing is to get the land rich. Had heard of 1,400 bushels of turnips being raised to the acre. This was rarely heard of now. He had succeeded in raising a fair crop of mangolds, having secured 5,000 bushels off 8 acres last year. Cultivation of mangolds did not cost much. He planted with two ploughs and home-made drill with force feed. Sowed rows every 3 feet. Preferred to put roots on rich soil. He would now take up the potato question:—They are the things to clean up land with. Did not care how much Indian grass or any other obstacles that came in the way, with a little manure he could raise a good crop of potatoes. Manure does not produce the scabby appearance on the potato as suggested. Give them plenty of room. His manner of planting potatoes was to (1) choose good dry soil; (2) make it clean while cultivating, if not clean before. Potatoes were the best crop to clean land with. The mode of planting did not matter much, only give them plenty of manure. Nothing gained by planting in hills. Plant in parallel rows, 3 ft. apart, set 12 to 14 inches—not nearer than 12 inches. The size of sets is immaterial, but the more substance you have the better. It was possible to break off sprouts and have them grow and raise large potatoes. The potato crop must be a more important crop in the future than it is now. One firm in Ohio had already handled over 240 carloads of potatoes from Ontario. It was not the lack of potatoes in Canada that has made the price they command. It was the foreign demand. Potatoes need cool weather and large hills. By careful and complete cultivation, a case has been known where 2,000 lbs. of potatoes have been secured from 1 lb. of seed. This had occurred in Scotland. Plant 4 inches apart, if on solid land, and 6 inches if light, and on land that is dry. Cut the sets and plant at once. He put the potatoes in pits in the field, covering with little dirt, allowing the outside to freeze, which keeps the potatoes from sprouting. Cannot keep them from sprouting in a warm cellar. Their flavor is better when kept in pits than when kept in cellars. For taking them out of the ground he used a pointer plough—and dumped them out from carts into pits. His pits were 3½ feet wide and depth of plough down, putting over plenty of straw, and then a slight coat of soil. He considered the St. Patrick far superior to the Early Rose. The Mammoth Pearl is also good, being large and late. For battling with the bugs he used 1 lb. Paris green with 100 lbs. plaster. Should not let the bugs get the start of them. One application will sometimes check them, but two or three applications will effectually do it. Apply the mixture at sun-down, scattering it with the hand to the windside. Had used salt and water, which killed his potatoes.

Mr. T. Hesketh gave some of his experiments in potato growing in the Old Country, in which he secured the best crops by using rotted turf. This, he maintained, was the best of manure for potatoes. Potatoes planted with this manure were cleaner and free from scabby appearance. Potatoes were generally scabby where rotten wood had been lying around. Sod was a good top dressing.

Canada has become more emphatically a dairy country than the United States. With a population of 5,000,000 they manufacture annually 60,000,000 pounds of cheese, equal to twelve pounds per capita, while we, with 50,000,000, make 300,000,000, or six pounds per capita. With a population not exceeding one-tenth of ours, their exports of butter are about one-half as great as ours. —[Am. Ex.

The Dairy.

The Munster Dairy School.

NORMANDY BUTTER.

Mr. Barter gave an address on this subject at Munster recently. He said:

Last autumn he visited some of the dairy farms near Bayeaux and Isigny, celebrated as producing the best butter in France, and that which commands the highest price in the Paris market. The farms are generally large, from thirty to over 100 cows being kept. The land is very rich, and the fields are divided by hedges, which give quite an "English" look to the country. Nearly all the cows are tethered, and regularly shifted every day. By this means more stock can be carried on the land. They are kept out on the pasture as much as possible, and are given hay, bran, flour, mangles and carrots. These latter are highly recommended as a butter producing food. The Cotentin breed of cattle is almost universally used. The cows are large and heavy looking, far too thick necked and bull headed, I would say for milk, but I was assured that some of them gave 52 pints of milk per day for a considerable time after calving. On some farms two or three Jerseys are kept to improve the color of the butter. The cows are kept very clean, they are daily curry-combed, and their udders carefully washed and dried. They are milked three times a day (at about 4.30 a. m., 11.30 a. m., and 6 p. m.). The milkers go out to the field on donkeys, with a kind of pannier slung on each side, containing large brass vessels, which are always used in this district, having narrow openings which can be securely fastened by a stopper, so that there is no danger of the milk being spilt on its way home. The farm houses within are a model of cleanliness; the kitchen and dairy utensils, which are nearly all of brass, being polished to the highest degree of perfection.

The dairies consist of three apartments—1, milk dairy; 2, churning room; 3, washing room, with boiler. They are generally flagged, the floor having a good fall to carry off water. It is considered most important that the supply of water for the dairy should be very pure and good. The milk room is kept at a temperature of 50°, and is heated in winter either by stoves or pans of charcoal. The milk is set in brown earthenware pots, about 13 inches deep, which are placed on raised brick benches. It is skimmed three times, the first only standing for twelve hours. The cream of this first skimming is kept separate. In some farms it is churned alone; in others the cream of the second is mixed with it immediately before churning. The third skimming is only used to make inferior butter for home use. The skim-milk is used for vealing calves. In hot weather the cream is often changed from vessel to vessel to remove any deposit of sour milk at the bottom, which is considered to injure the quality of the butter if allowed to mix with the cream. The cream is put in the churn at the temperature it is in the dairy; it is not heated.

The churn universally used is the Normandy barrel, which I consider is the best I have seen, and ought to be more used in this country. I inspected the works of Messrs. Durand & Co., at Isigny, where churns of the best description are made. The openings are of polished metal, fitting close, without india-rubber. The beaters inside are three plain boards running the length of the churn, about two inches from the sides, so that there are no corners where sour milk could accumulate. Some of them are fitted with a small pane of glass, so as to see at once when the butter comes.

I saw the whole process of churning and butter-making at a farmer's near Bayeaux, who had obtained several gold medals for his butter, and the bronze medal at the Paris Exhibition of 1876. The farm consists of about 160 acres of excellent land, the rent being £4 an acre. Seventy cows are kept, all Cotentin breed. The churn was turned by horse power at the rate of sixty revolutions a minute. The churning took 40 minutes, and was stopped the moment the butter came in small grains. Two-thirds of the buttermilk was then removed, and spring water poured in by a pipe, as before described. It was then turned slowly for thirty revolutions, two-thirds of the milk and water being again taken out, and more water poured in. The two first washings were reserved for the pigs. The same operation was then repeated till the water came away quite clean. It took in all eight washings, the number of revolutions being

reduced each time. By not removing all the buttermilk or water, the particles of butter are kept separate, so that they are much more completely washed and the grains preserved. After the last washing the churn was half filled with water and rocked gently backwards and forwards to collect the butter, which was removed in lumps of about 4 lb. It was not worked at all, but each lump was slightly pressed with the hands in a basin of water, then taken out and gently patted with a wooden spoon to remove the water, and placed on a little round table covered with a clean, new cloth, which was branded with the name of the farmer and the medals he had obtained; five or six lumps were placed one over the other, and flattened and shaped with the spoon, the only implement used. The butter was then neatly pinned up and the weight marked on it, so that there is no tare or deduction of any kind; each package weighs about 25 lb., and is placed in a small basket lined with reed, which costs about 4d. A carrier from the railway company calls around to the farmers to take the packages to the station; the entire cost to Paris, including carriage, tolls, factory, &c., is about 2d. a lb. The butter sent in this way direct to Paris is all consigned to factories, and sold by auction at the Halles central; that which I saw made fetched about 2s. 9d. a lb. At another farm I visited the proprietor had got 3s. a lb. the week before, and often gets 4s. 3d. in winter. The Normandy butter we get in England is in reality only second or third quality. All the farmers and dealers I spoke to on the subject said the best butter was never sent to England, as the English would not give the price for it.

I visited the weekly butter market at Isigny. It began at 10 a. m. The women stood in lines, each with her basket before her; the lumps of butter, varying in weight from about 10 lb. to 70 lb., were each made up in a clean cloth. The buyers go around with a small wooden knife, and examine it very carefully, taste and smell it, and often break off large pieces to see the grain. They write on the lump of butter the price they offer. If not accepted, it is blotted out by passing the knife over it; but if agreed to, the quality and private mark of the buyer is put on it, and the women take it to the depot, where it is weighed, paid for, and the quality again checked. Each description is placed separately in very large baskets, lined with linen. At one depot I saw it divided into 1st, 2nd, 3rd and 4th quality; the prices were: 1st 1s. 7d.; 2nd, 1s. 4d.; 3rd, 1s. 3d. The butter for Paris was despatched the same day by the 2 p. m. train in a special wagon arranged with shelves. All the butter is sold perfectly fresh, the supply averaging about 35,000 lb. per week.

I would say, in conclusion, that as good butter can and has been made in the south of Ireland as anywhere in the world, and I hope I have shown clearly that the art of dairying in its practical bearing, and the manufacture of butter of the highest quality, is not, after all, such a very difficult subject. Scrupulous cleanliness and close attention to detail is the great secret of success. —[Dublin Gazette.

Parturient apoplexy or milk fever is a disease that cows in good condition are quite as likely to have as emaciated ones, and the longer the intervening time between confinement and its appearance the stronger can be the hope of recovery. The first indications will be indifference to surrounding objects, bloodshot rolling eyes, their inability to move the hind legs, and afterward the forward ones. The remedy is stimulation, for which spirits are good, and among them brandy is the best. A pint of it, or of gin, can be given to a large cow with good results to stimulate the blood, and keep it moving. Then give from a pound to a pound and a half of epsom salts at a dose, and repeat two, or even three times if necessary, to move the bowels. Laudanum can be given in the first stage to control the pain, and quite large doses can be administered. As many as four ounces have been given with safety, if less quantities did not relieve. Retention of the afterbirth is a common thing among old cows in some farmers' herds, and is caused in many instances by improper treatment at calving time in previous years. If it is to be removed by force it should be done by an experienced hand. Unless a veterinarian can be called or the family physician will attend to it, spurred rye or ergot should be given. A strong dose of tansy has proved efficacious in several cases that have come under my observation; the cow drank it with avidity in one instance. —[G. R. D., Tribune.

Preparing Milk for the Factory.

An esteemed correspondent, J. B. H., of Antwerp, N. Y., sends us the method pursued by one of his patrons in cooling and preparing his milk for the cheese factory:—

"Mr. B. has a tank two feet wide, six feet long and perhaps sixteen inches deep, convenient to his well, in a slatted building, with a good roof, which can be kept under lock and key to keep out animals and all intruders. This building need be only large enough to hold the tank. When milking time arrives the milk cans are placed in this tank, and as fast as the milk is poured into the cans water is pumped into the tank in sufficient quantity so that the surface of the latter is on the same level with the former. A long handled dipper is at hand, and as the milking proceeds the contents of the cans is frequently stirred. If the night is a very warm one, the water in the tank is drawn off and refilled. I consider it indispensable to air the milk as soon as possible in order to get rid of all bad flavors, as it is impossible to make good flavored cheese out of bad flavored milk."

The accompanying cut represents a curd cutter, a machine now coming into general use among our dairymen. The machine represented by the present illustration has been thoroughly and satisfactorily tested in Canada and the United States by prominent dairymen. Mr. J. B. Harris, of Antwerp, N. Y., is the patentee.

Inferior Dairy Stock.

X. A. WILLARD.

One notable source of poor success in dairying is inferior cows. It is said that even in the oldest and best dairy districts of New York, one-third of the dairy stock will not more than pay the cost of its keep. This is not to the credit of good dairymen, and shows they do not give proper attention to their account of profit and loss. Poor milk-yielding cows are "a crying evil," and the annual loss from this cause keeps many dairymen in straightened circumstances; and so long as they persist in retaining this kind of stock there is for them but little hope of bettering their fortunes in the dairy.

Inferior milkers are not wholly confined to the scrubs and common cows of the country, for they are found among all breeds of thoroughbred stock. Professor Roberts, in a recent address at a dairy convention, affirmed that much of the thoroughbred stock of the country is a positive damage to the dairy. Weak in constitution, with the milking habit bred out, they transmit these characteristics to their progeny, and thus become the source of infinite mischief and loss to the dairyman who is trying to improve his herd by introducing pedigree blood. Every poor milker when found out, he said, should have its head cut off and not be turned away indiscriminately to cheat and cause loss to other dairymen. No matter how renowned its pedigree, let it go to the shambles or to the beef producer, but not to the dairyman. Harris Lewis facetiously urged at the same convention, that any dairyman having a poor milker would make money by giving her away, and if he had scruples in this regard, "he might make a present of the beast to his mother-in-law."

Some years ago one of the best dairymen in Herkimer County, New York, desiring to ascertain the profit he was realizing from different cows in his herd instituted a series of tests. He had found from actual experiment that the average cost of keeping his dairy stock through the year was at the rate of \$35 per head, and this sum was embraced under the following items:—

2½ tons of hay at \$8 per ton	\$20 00
Pasturage during the season	7 50
200 pounds ground feed in spring	8 00
Interest on cost of cow at \$45 and depreciation 10 per cent.	4 50
Making, per cow, a total of	\$35 00

Now selecting five of his best cows and five of his poorest cows, and measuring the quantity of milk on certain days of the month during the season, he found that the five best cows yielded 554 gallons of milk each, which realized in butter and cheese sold at market rates, an average for the season of 11½ cents per gallon or a total of \$63.11 per cow. This gave him, after deducting cost of keep, \$28.71 per cow clear profit.

On the other hand, the five poorest cows yielded only 243 gallons of milk each, which at 11½ cents per gallon, amounted to \$27.95 each, or \$7.06 less than the cost of keep. As a result of this test, it is needless to say the poor cows were not kept over the second season. If this result was obtained by one of the best dairymen, what could be expected from the herd of the average dairyman?

I can instance cheese dairymen who are keeping dairies averaging from 25 to 30 cows, who obtain, one year with another, a yield of 600 pounds of cheese per cow and often more, while other dairies in the vicinity do not get a yield of much more than half that amount per cow. It must be evident that herds like the latter are not rapidly bettering the fortunes of their owners. And yet this thing goes on from year to year without the proper effort to get out of the rut.

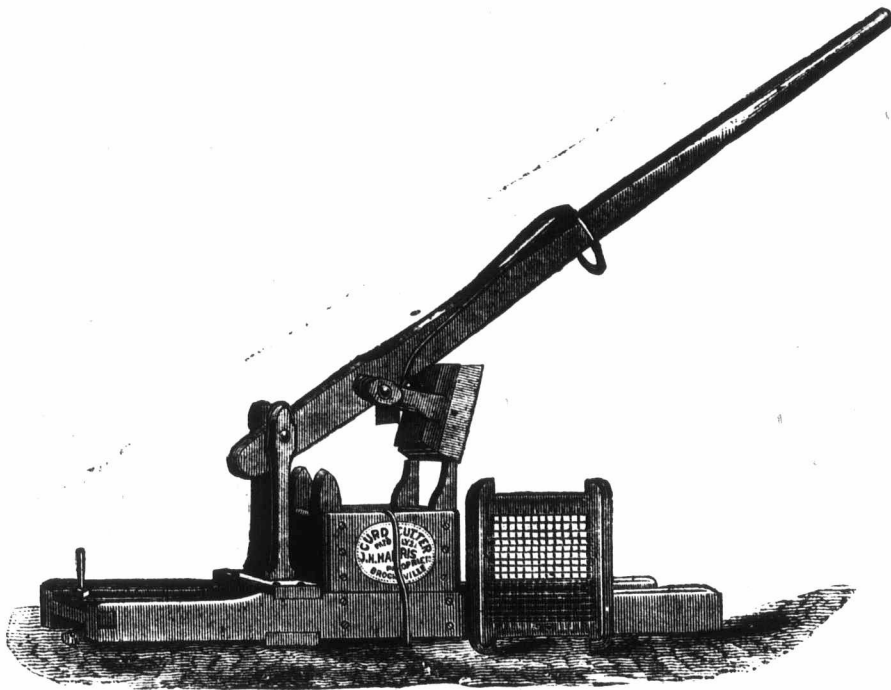
The statistics of the cheese factories in the State of New York, I am sorry to say, show many inferior herds that do not yield on an average much above 3,500 pounds of milk per herd during the year, whereas the average should be at least 5,000

horns. The cross-breeding which I advised was the mixing of the Jersey with the milking strains of Shorthorn, or with that large class of grade Durhams, so-called, which have for many generations been so profitable to the dairy farmer. Since that time my theory has been confirmed by observation. In the great dairy regions of the West I find this practice to be largely followed, and without the expense of procuring pure-bred animals at great cost, the western farmers have established great herds of valuable cows which far surpass the pure Jersey in quantity, the Ayrshire in quality, and both in their fitness for the shambles in case their capacity as milkers is not up to a high standard. The use of Jersey bulls for the purpose to which I have referred is common, and their value in this respect is fully understood. The benefit of this mode can be easily appreciated, if we will but remember that it would be impossible to start a large farming State with Ayrshires on account of their cost, and unprofitable on account of their uncertainty and want of uniformity, and that the Jersey as a pure-bred animal is, if possible, inferior to the Ayrshire for the production of beef—a product of which the western farmer can never lose sight, and which the eastern farmer ought always to bear in mind.

The importance of securing in this way a thrifty, large milking dairy stock is constantly increasing, and the greatest care and ingenuity must be exercised in securing a supply of milk cows, economically and profitably. The failure of the wheat

crop of our newer States has compelled the farmer to turn his attention to the dairy as his best branch of agricultural business; and the pastures are now yielding their owners a greater profit in butter and cheese than the cultivated fields had yielded in wheat and corn. Quick to discover the most profitable branches of his business, the farmer in every section of the United States has never failed to secure from his land the product best adapted to his soil and to the market which he occupies, and he has turned from his crops to his herds with confidence and success. In almost every section of our country, therefore, the question of raising cattle, and the best breeds suited to different purposes, includes the whole system of cattle husbandry, and is a matter of the deepest importance to every farmer.

At the foundation of this vast industry lies not only good breeding but also good feeding. The animal organization devoted to this business is extremely delicate and may be permanently injured by an injudicious use of food as it often is by accident and disease. This the farmer should never forget. The great rule to be observed in the rearing of dairy stock is not to interfere with this delicate organization by the food furnished in early life even. The system of a heifer calf can be so injured by food, as to disorganize her glandular system exactly as the system of a cow can be forced into diseased action by excessive or inflammatory food. A fat calf seldom makes a good cow. A cow that carries a superabundance of fat seldom makes a good milker, and the wholesale statement so often made that what produces fat will produce milk, and vice-versa, is shown to be unfounded by a comparison of the effects of rowen, hay, brewers' grains, fine feed and green food, with corn meal and oil-cake. It is useless, moreover, to force a cow to early maturity. A dairy cow never reaches perfection until she has become fully developed, and this must be done deliberately and with a view to endurance rather than precocity. Her peculiar powers mature slowly and depend very much on the strength of her constitution. In rearing animals for the dairy, care should be taken that the young are not so fed as to develop a tendency to great size either in frame or adipose tissue. I would not advocate a deficiency of food for young dairy stock, but I would argue against an excess of articles of a highly stimulating quality. Cows can best be fed on oatmeal, fine-feed, roots, rowen and chopped feed properly prepared.—[Springfield Republican.



CURD CUTTER.

pounds. The milk of every cow should be tested as to quantity and quality, and inferior cows discarded. It is better to pay a good round price for a superior milker than to take a poor one at any price, since the cost of keep on the latter will most likely insure loss. There are instruments now which will determine quickly and easily the percentage of butter in any sample of milk and with sufficient accuracy for all practical purposes, so that by weighing the milk, from time to time, the real value of a cow as a milk producer may be known, and such tests are imperative if the best results in dairying are to be obtained.

Dairymen should breed their own stock as the surest way to get superior milkers at moderate cost, but in breeding dairy stock care should be taken that calves be raised only from deep milkers, and it is quite as important that the sire should be of a deep milking family as the dam.—[Rural New Yorker.

Dairy Stock.

In some remarks which I prepared a few weeks ago with regard to dairy stock I suggested that the cheapest and most reliable method of securing good milk cows was the mixture of various bloods by cross-breeding. I expressed the opinion that no reliable dairy breed had yet been secured—a breed whose dairy qualities were so firmly fixed that the inheritance was uniform, and in which we could be as sure of producing a good dairy cow as we are of producing a good beef animal by breeding Short-

The Farm.**The Packing Ground on Mr. G. Leslie & Son's Nursery, near Toronto.**

The large packing building you see in the foreground is built of timber grown on the ground, the seed of which was sown by Mr. Leslie only fifteen years ago. Mr. Leslie has set a pattern to be followed by all that are interested in the prosperity of the Dominion by showing us what can be done in so short a time in the way of timber raising. We were so much surprised and pleased with this packing house, some of the timbers of which are large enough to use for barn building, that we instructed our artist to make the accompanying cut. Mr. Leslie cuts a great deal of timber into cordwood every year that he has grown from seed on his grounds. Mr. Leslie is the oldest nurseryman in Canada, but his age does not prevent his

How Thistles are Distributed.

In the New York Tribune we find the following in regard to the dissemination of the much dreaded Canada thistle, which may not be generally known:

"In the discussion of Canada thistles some persons have expressed the belief that the distribution is effected wholly by means of roots, or pieces of roots, carried in the soil from place to place. Undoubtedly this is a fruitful source of distribution, and especially so in the towns and cities, where sod is brought in from the country to lay down grass plots; but one can often find plants in such isolated positions as to make it hard to believe that they did not originate from seed, and as in this section we are so unfortunate as to have an abundance of this weed, I determined to make some examinations of the plant. We must, in the first place, understand that what is usually called a flower is not in reality a single one, but a great number of very small flowers in a cluster or head. These heads I found to be of two sorts, one large and rounded on the top, and the other smaller and stunted, with the top of the head flattened, these different shaped heads being borne on separate

plants of a district produced one kind of flowers, when a few or no fertile seeds would be produced. From the preceding we may conclude: 1. That the Canada thistle has two forms of flowers. 2. That the larger flower heads produce no seed. 3. That the smaller flower heads (often pale pink or white, Wilson) do produce fertile seeds, and that these seeds can be and are distributed by the wind."

A Cheap Movable Fence.

A writer in an exchange says:

We make the panels 8 or 10 feet. The posts are locust, 2 inches square. I drive a stake into the ground in making post holes, and use a wedge when necessary to give the post or fence sideways stiffness.

The wedge driven down by the side of the post and nailed to it near the ground makes the sideways resistance in the ground equal to that of a post which squares as many inches as the wedge and rule. I sharpen the posts to drive.

For pickets I use oak $\frac{1}{2}$ inch thick by 3 inches wide, usually four feet long, sharpened at the top.



SCENE ON THE PACKING GROUND ON MR. GEO. LESLIE & SON'S NURSERY, NEAR TORONTO.

energetic prosecution of his business. We know of no more reliable person to whom orders can be entrusted in the nursery business. Sometimes an injury has been done to Mr. Leslie by travelling agents that have gone through the country pretending to sell his stock, but who in reality were not selling for him, but selling stock of any kind and under any name so that they could only get the farmer's name on paper. We have always recommended our subscribers to make up their own minds as to what they require and send their orders direct to reliable men in any established business. Travelling agents may be of some benefit to farmers sometimes, but there are many who care not what they say or what they promise as long as they can get a farmer's name on paper. That fixes it! Procure your stock from reliable houses direct if you can, or be sure that the agent to whom you are giving your order is not selling under false representations.

plants, each kind growing in patches separated some distance from the other.

"The plants bearing the larger and rounded heads are here far more abundant and robust than the ones bearing the small heads. The large heads, as soon as done flowering, wither and turn brown, as if parched from drouth. The office of these plants seems to be the production of pollen (or the fertilizing dust, if you please), with which to fertilize the flowers on the small heads on the neighboring plants which produce seed (the large heads produce no seed at all) but little or no pollen. As soon as the seed is ripe and ready for dispersion, these heads do not, on an average, contain more than twenty per cent. of fertile seed, the remainder being abortive. A recent contributor to the Tribune expressed the opinion that fertile thistle seeds are not carried by the wind. I took a ripe head of one, and found that the fertile seeds as soon as loosed from the head, sailed off quite as buoyantly as the sterile ones, providing the seed was fully ripe, and had its tail expanded. As the number of sterile seeds is not much greater than of the fertile, one would, of course, find the former much commoner, and further, it might happen that (as regards the Canada thistle) all the

As I am tried by hogs, I use a brace board, slab, etc., at the bottom. I get the principal stiffness and strength from my stringers. I take a piece of chestnut 2x2, and saw it in two lengthwise diagonally.

For making panels we lay down the pickets as wanted, and then place the top and bottom stringers flat side down, edge side up, and nail each picket with one nail alternating first top, next bottom. Then I turn it over and place the stringers for the other side, using a nail for each picket alternating as before, so that each picket gets a nail top and bottom. For a moveable fence I use two posts for each panel, for a permanent fence but one, letting two of the stringers project. I need no outside fence stronger than this. The nail being driven in obliquely and differently cannot easily be pulled out, a picket cannot be torn off, and water will not lodge anywhere.

After this date, the Russian Mulberry plant prizes will be booked for to be mailed in the fall. So don't relax your efforts to procure one or more new subscribers. A sample copy will be mailed with pleasure for an intending subscriber.

Bones as Fertilizers.

REDUCTION OF UNGROUND BONES—PREPARATION OF BONE SUPERPHOSPHATE.

BY PROF. S. W. JOHNSON.

[In the annual report of the Connecticut Agricultural Experiment Station.]

It is not an easy matter to reduce fresh whole bones to a suitable form for use as a fertilizer. Treatment with sulphuric acid does not appear to be practicable. The acid suitably diluted acts energetically on bones at first, and readily disintegrates them to a certain depth. Unless, however, a large excess of acid be used the action soon becomes sluggish, because where the acid is in contact with the bone it forms sulphate of lime, itself being spent as an acid or solvent in the operation, and its place is taken by the bulky sulphate. Fresh acid must then be brought in contact with the bone by abundant stirring, in order to maintain the action. The pulpy sulphate of lime holds mechanically a large quantity of liquid, and thus hinders the desired result. The excess of sulphuric acid rapidly absorbs moisture from the air, and the final result is the solution of the bone, or most of it, at the expense of a wasteful excess of acid, and the product requires mixture with something to take up the water and neutralize the excess of sulphuric acid.

These difficulties would not be so serious if suitable and cheap vessels could be had in which to carry on the process, for after the bones were disintegrated the sloppy mass could be dried and its excess of sulphuric acid utilized by admixture of South Carolina phosphate rock, or other similar material, which would be thereby converted into superphosphate.

On a very small scale cast-iron vessels could be employed. A pit lined with blue flag-stones, or with hard bricks closely laid in common lime mortar (not cement), would be more suitable for large quantities. It would appear, however, that there is doubtful profit in undertaking to reduce whole bones by sulphuric acid on the small scale, especially since the use of this acid has been attained by considerable risk to those inexperienced in handling it.

In Russia, Ilienkov and Engelhardt claimed to have successfully employed caustic potash for the conversion of bones into a pulverulent fertilizer.

Their method of reducing entire bones with caustic potash, or what amounts to the same thing, with wood ashes and lime, is described by Ilienkov as follows:

"To 4,000 pounds of bone take 4,000 pounds of unleached wood ashes, 600 pounds of fresh burned lime and 4,500 pounds of water. First slack the lime to a powder, mix it with ashes, and placing a layer of bones in a suitable receptacle—a pit in the ground lined with boards, stone, slabs or brick—cover them with the mixture; lay down more bones, and cover, and repeat this until half the bones, or 2,000 pounds, are interstratified with the ashes and lime; then pour on 3,600 pounds of water, distributing it well, and let it stand. From time to time add water to keep the mass moist. So soon as the bones have softened so that they can be crushed between the fingers to a soft, soap-like mass, take the other 2,000 pounds of bones and stratify them in another pit with the contents of the first. When the whole is soft shovel out to dry, and finally mix with dry muck or loam (4,000 pounds,) or enough to make it handle well."

I should suppose that this method might be advantageously modified somewhat as follows: Arrange a circular layer of bones closely laid on a bed, a foot thick, of good loam, under shelter, wet them from a watering pot and sprinkle over them wood ashes enough to fill all the chinks. Then give a coating of gypsum; put upon that a few inches of muck or loam, adding all along as much water as will well moisten the earth and ashes, but not more than the mass can easily absorb; then place another layer of bones with ashes, gypsum, loam or muck, and water as before, until the heap is built up several feet; finally cover with loam and keep moist by adding water from time to time, but not enough to run away from the bed. When the bones are sufficiently softened, mix well together with the loam used as bed and cover, and with more if need be. This plan would require more time, but perhaps would be as efficacious and more convenient than the process last described.

Instead of wood ashes a mixture of lime and some form of "potash salts" might be employed, but trials on a large scale would be needful to learn the proper proportions and mode of working.

A third method of disintegrating bones is to induce decomposition of the animal matter (osseine), by composting or interstratifying them with fermenting horse dung, and keeping the mass moist by covering with loam and adding occasionally urine or dung-heap liquor. As to the details of this method or the practicability of it, I can give no information.

PREPARATION OF BONE SUPERPHOSPHATE.

In answer to repeated inquiries from various sources, the method of "dissolving" ground bone, i. e., of preparing a bone superphosphate by help of sulphuric acid—useful where soluble phosphoric acid and nitrogen are desired—is here given.

Most of the ground bone that comes into market contains a considerable, often a large, proportion of coarse fragments which remain in the soil for years before they become of avail to plants. The finest parts of ground bone are, on the other hand, adapted to feed crops at once. If ground be treated directly with sulphuric acid, the fine parts are promptly decomposed, but the coarse portions are but little acted on, unless a large amount of acid and much time are consumed. Dr. Alexander Muller has proposed the following very rational method of treating ground bone, which is the best adapted for domestic use of any of the processes involving the use of the oil of vitriol.

Take 100 pounds of ground bone such as contains twenty or fifty per cent., more or less, of material coarser than half inch, twenty-five pounds of oil of vitriol of 66°, the strongest commercial acid, and six quarts of water. Separate the bone by sifting into two, or if the proportion of coarse bone is large, into three parts, using sieves of one-sixteenth inch and one-eighth inch mesh. Mix the coarser part of the bone in a cast-iron or a lead-lined vessel with the oil of vitriol. When the bone is thoroughly wet with the strong acid, add the water, stirring and mixing well. The addition of the water to the acid develops a large amount of heat which favors the action. Let stand, with occasional stirring, for twenty-four hours, or until the coarsest fragments of bone are quite soft; then, if three grades of bone are used, work in the next coarser portion of bone, and let stand another day or two until the acid has softened all the coarse bone, or has spent its action; and finally dry off the mass by mixing well with the finest bone. In carrying out this process, the quantity of oil of vitriol can be varied somewhat—increased a few pounds if the bone has a large proportion of coarse fragments, or diminished if it is fine.

Stoeckhardt gives a somewhat different procedure, viz: "From a mixture of wood or coal ashes and earth thrown upon a barn or shed floor form a circular wall so as to enclose a pit capable of containing one hundredweight of ground bone; the surrounding wall of ashes may be rendered so firm as not to yield by being trodden down or beaten firm with a board. Sift off the finer part of the bone and set it aside. Throw the coarser part into the cavity and sprinkle it during continued stirring with three quarts of water until the whole is uniformly moistened; add gradually eleven pounds of oil of vitriol of 66°, the agitation with the shovel being continued. A brisk effervescence of the mass will ensue (from decomposition of the carbonate of lime in the bones), which will not, however, rise above the margin of the pit if the acid is poured in separate small quantities. After twenty-four hours, sprinkle again with three quarts of water, add the same quantity of sulphuric acid as before, with the same brisk shovelling of the mass, and leave the substances to act for another twenty-four hours upon each other. Then intermix the fine bone previously sifted off, and finally shovel the ashes and earth of the pit into the decomposed bone until they are all uniformly mixed together.—[In Cultivator.]

Care of Grass Land.

Farm as we may—practice rotation of crops—yet there is a continual dying out of our grasses, says the Maryland Farmer, and re-seeding the land does not permanently re-establish them—and the inquiry continually comes, why the grass does not hold its footings. The old theories attribute it to different conditions of the season, grubs, freezing out, dying out, and the like, and modern science says it comes from lost fertility, that constant grazing has depleted the soil, and that the plant food has migrated in the form of beef, butter, mutton, etc. To a certain extent their specifications enter into the complete answer, but that there are other causes, no one can doubt.

If a close examination of our grass lands is made,

on the level lands, where the water line remains high, or close to the surface, the grass is usually found of vigorous growth and unbroken turf, for the mixture that this soil more uniformly contains keeps the growing roots alive and spreading, and continually throwing off new shoots, which the more rolling land is unable to do so continuously, owing to interrupted moisture.

The time of cutting grass has much to do with its permanency. Grass, like timber, has its proper time for cutting, and the lessening of injury to the roots. Grasses that have spreading roots, like red top and its kindred varieties, are best early cut, as nature at once sets about repairing the loss with new shoots, but timothy needs to be fully developed, from the fact that its bulbous roots are also putting out new bulbs for the next crop, and to sever the stalk, cuts off a large dependency for the support of this new growth, and unless conditions are exceedingly favorable, the bulb with its new offspring dies.

The value of our grass lands to produce is also largely influenced by a lacking of fertility at the time of seeding down, which is usually done with some kind of grain, and by withholding this element, the wheat taking the more rapid and vigorous growth, deprives the grass root of its share, and the grass root thus held back is either frozen or burnt out as the case may be, a matter which could have been avoided if abundant fertility had first been applied. To do this might be pointed out a score of ways, but in the main, shallow drainage, a friable, loose condition of the soil to facilitate the spreading of the grass roots, sufficient fertility mixed into the soil, limited pasturage of meadows and judicious cutting of hay, as regards time, will, as a rule, result in a good field of grass.

It is quite likely that self-seeded lots, if kept enriched, come nearest to meeting the requirements, but the fact is that nature does not always produce upon the demand or of the right sorts, so that human agency is needed. Manure and moisture are the two great essentials in grass growing, and there is no reason why, if land is kept enriched, it may not be relied upon for a crop. With meadows that produce the tame grasses, like timothy and red top, enriching of some kind needs to be repeated each year. One of the most serious damages done to meadows is feeding off the aftermath early in the fall, and leaving the roots unprotected until nature kindly sends a covering of snow. Either of these kinds will stand much hard usage by the elements, but show bad treatment from the farmer very soon. If the aftermath is allowed to remain and serve as a mulch for the soil, a good benefit will be received from the crop of hay following, more than balancing the gain from a few days feeding, and this and early cutting should be resorted to, so that the roots may be enabled to cover themselves with a coating of cool green before the parching days of July, and if the season should be favorable, the aftermath could be cut with far less damage than will follow feeding it off the land.

Improvement in Agriculture—Drainage in Ontario.

The farmers of Lambton county have for some time been under-draining their farms. Several farmers are putting in 30,000 feet to 40,000 feet of tile drains, the tiles being made at Courtwright, Mooretown and Brigdon. Formerly they used drain tiles of small diameter, but now 4 inch tiles for the side drains, and 6 inch for the main drains. Having made the main drain, they follow the swales for the side drains, which of course tap the former. Sometimes, but not always, a profile is found by levelling—otherwise they follow the slope of the ground. One man went down nine feet to get a fall. One farmer, not an isolated case, spent one thousand dollars on draining. Mr. T. S. Nesbitt has put in \$1,500 worth of tile drains. Mr. Reilly, in the township of Moore, has eight hundred acres, of which two hundred are drained. His land is along a concession. About 27 years ago, the farmers taxed themselves to make a ditch which was originally only ten inches wide, but now has been made into a creek thirty feet deep and seventy-five feet wide, though quite dry in the drought. At the bottom a blue pipe clay is encountered, which resists scouring. In two years the soil over a drain is percolated by minute fissures which form innumerable water channels leading to the drain, and when this state of things has arrived the produce is doubled and drought defied. In ten years the drainage of the cleared part of Lambton will be complete.

Poultry.

Chicken Hatching.

BY R. A. BROWN, CHERRY GROVE, ONT.

Perhaps no one is more vexed at any one thing than to have purchased eggs of some celebrated variety on hand, and anxious to set them, and have them "incubated." For no amount of coaxing or driving will either persuade or convince poor "Biddie" into the element of perpetuation when she is not so inclined.

Eggs that have been shipped by railway, should be set at once, if it is possible to do so. If there are no hens wanting to sit, it is better to buy or borrow a sitter from some neighbor, but care must be taken not to put valuable eggs under her immediately upon getting her, for there are not many hens that will take kindly to their new nests at once. It is better to place her on a nest as near like the one she left as possible, and at night is the time to make the transfer, so when the light breaks on her in the morning with its gradual appearance she finds herself upon a few porcelain eggs, with feed and water at hand, without removing from the nest for one or two days. Then, at night also, if she seems to approve of the change, the real eggs should be transferred and left unmolested, until she has determined to sit at her own request.

There are quite a few chicks hatched out in the months of February, March and April, that will make chicks matured enough to exhibit in the fall shows, but for ordinary purposes May, June and even July are better. In our northern latitudes the weather is too cold and changeable to make early sit eggs a success. I have tried all months, and have been most successful in the months of May and June; hatched out then in warm weather with good feed, they will thrive very rapidly, more so than if hatched out earlier in the cold weather; if a chick gets chilled and stunted, no amount of feed and care will make it thrive as it should do. For Bantams, early August and September are better than spring months; they do not get so large as if hatched earlier, as cold, fall weather catches them before full grown, and they make hardier birds in the end. Turkeys always thrive better if hatched out in dry, warm weather. May is the best time for ducks and geese; that is in the northern latitudes; if south, earlier will do. Four or five months is sufficient time to mature most chicks and young poultry, if given good wholesome food, but if half fed, of course they will require longer time to develop to good, sound birds.

The export of eggs for the Dominion for 1881, amounted to \$9,090,135 doz., valued at \$1,984,135. For the Province of Ontario, 5,729,847 doz.; Quebec, 1,453,561 doz.; Nova Scotia, 299,177 doz.; New Brunswick, 913,539 doz.; Manitoba, 7,001 doz.; Prince Edward Island, 694,308 doz. The fine open winter of 1882 has been very favorable to poultry, as there has been every chance to get a few feeds of grass, and an outside run every week all winter, consequently the hens are paying their owners with plenty of eggs at the time of year when prices are good for export shipment, and farmers are more encouraged to invest in this stock this year than formerly.

Kill off the old rooster and buy a new one of good quality. The young chickens will be improved next spring.

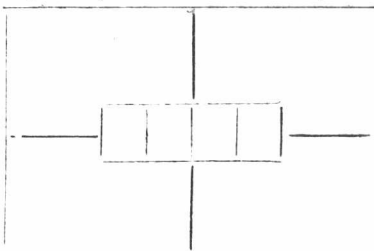
One of the best things to feed young turkeys with, is meal which has not been sifted. This meal should be well mixed with some black pepper, ground, and the whole baked in ashes. This should be fed to them twice a day, until they are of a sufficient size to shift for themselves.

Milk for Poultry.

Those who keep one or more cows, whether they are on the farm or merely on a small country place, will find it far more profitable to feed their surplus milk to the fowls and chicks than to give it to the pigs, as it is generally done, for poultry meat (as well as eggs) is more valuable than pork. In no other way can the same amount be obtained from the sour and skim milk. The poultry are very fond of it, indeed, and it is not at all injurious, though some unjustly claim that it produces diarrhoea, and prevents, in a marked degree, many of the ailments and disorders to which poultry are subject, under certain favourable circumstances and conditions. Some advocates of the milk diet for poultry even go so far as to claim that it secures an entire immunity from disease, but this we are not yet prepared to admit as assured. That it keeps the fowls healthy and thriving, to a remarkable degree, an experience of several years in feeding it to our birds, convinces us beyond a possibility of doubt, and breeders generally will do well to try it, if they have the opportunity and have never yet done so. It would not pay, however, to buy milk for the purpose, unless it might be for a very few choice fowls, but where there is a single cow kept, or a dairy, there is always enough refuse milk to supply the poultry with all they need. It is best fed when thick or curdled, though the birds will not refuse it in any form. When they are supplied with plenty of milk, they do not either need or require water, as the milk takes the place of it very nicely. It is invaluable for the breeding and the laying fowls, while the fattening fowls not merely relish it, but thrive on it wonderfully, in connection with strong grain food in the most desirable form.

For young, growing chicks it is one of the most healthy things that can be given in connection with their regular food, and it seems to supply just the material they must have to make a rapid, vigorous and healthy growth. Those who have not tried it, should give it a trial this spring, and we think that they will continue it as long as the milk supply holds out. The fowls take to it as naturally as a cat does to fish.—[Ex.]

POULTRY HOUSES.—T. M. J.: The requisites for a poultry house are good ventilation, warmth, dryness, no harbor for vermin of any kind, an earth floor, dry litter (as sand or ashes) to receive the droppings, a weekly cleansing, at least, of the house, and a sufficient run. Coarse sand or gravel is required. The walls are best plastered, and it would pay to have them hard finished or painted to avoid cracks in which lice and fleas might harbor and breed. The fittings should be of the simplest kind, without anything about them to harbor lice. A plain two by four scantling, well oiled or greased, is the best perch, and it should rest on short pieces not over 18 inches high, so that it may be moved to clean under it. High perches are injurious in many ways. Trees in the yards are highly desirable, as they afford useful shelter and the fowls keep the fruit free from insects. A south aspect is desirable, but it is well to have places for the fowls to run in the north side in the bad weather. A plan for keeping several kinds distinct is here given. The square yard might be divided into as many runs as are required and the house may be divided to suit:



The perches will be put at one end; the rests are plain boxes on the floor, and the doors and windows face the south.

A very good kind of hen feed for winter is made by pounding boiled vegetables with middlings and adding a little red or black pepper.

There is more bone forming material in bran and middlings mixed and saturated with buttermilk, than any other kind of hen feed, and it should be given generously where size is required. A little hard grain should be added to prevent soft feed from sticking in the fowl's throat. Poultry should receive a daily meal of boiled vegetables in winter.

The Chicks are Coming Forth.

Chicks are piping now in most all the poultry yards of the country, and the prospects are that a large crop of younglings will be raised during the spring and early summer months. The little ones are quite tender yet, their downy covering is but poor protection against the chilly winds and cold rains that usually assail them in early spring. For some weeks to come they will need constant and watchful care lest they drop off suddenly from cramps or exposure.

Young chicks are often fatally injured by being exposed to heavy dews. An outbuilding with a southern exposure, that is dry and comfortable, would be a good place to keep young broods until the weather would permit them to forage around. It is best not to allow them in early spring to range in the wet grass, or to go from the shelter of their coops on rainy days, until they get strong and quite feathered out.

While the young birds continue to grow they should be bountifully supplied. The rapid growth of the body and feathering is a great drain on the system. Milk in any form, mixed with baked oatmeal or barley meal, is an excellent article of food to build up a strong and muscular frame. Cornmeal pudding and milk, chopped onions, a little animal food occasionally, wheat, cracked corn and scraps from the table, are nourishing for young or old fowls.

Comfortable and roomy coops, perfectly rain proof, should be provided. The hen should be confined until the chicks get strong and well feathered out, else she is apt to take long strolls as to tire out and lose quite a number of her brood. The early hatched chicks, if they can be given a good start, will usually prove satisfactory, especially the larger varieties.

How to Raise Turkeys.

Old turkeys can take care of themselves. Our object in this article is to tell how to care and raise young turkeys successfully, and be at the same time a source of recreation and profit to their keeper.

When the turkey chicks appear upon the stage of life, they should not be suddenly removed or allowed to leave the nest, as the warmth of the mother is still necessary for some time after hatching. The young poultts need nothing the first twenty-four hours after hatching, then give them hard boiled egg in small quantities crumbled fine. Later feed curdled milk and bits of bread soaked in milk, and still later ground corn and barley or oats mixed with milk.

Turkey chicks should be confined to a warm place after being hatched until they get strong. Their dam must not be let out at liberty until the dew is off the grass, moisture and cold being exceedingly injurious to them, occasioning cramps and every kind of infirmity. They can not even endure quarters subject to that degree of cold and dampness in which the common barnyard chicks will thrive and grow. They require dry, warm weather and strong hearty food. When young they make rapid headway toward development, and should be forced along as fast as possible, that the body may keep pace with the quick growing features.

Turkey poultts when well fed and cared for grow rapidly. At the age of three weeks their backs are nearly covered and they have obtained their first quill feathers in the wing and tail and can endure more foul weather. As they increase in growth and strength they should be allowed more and more liberty each day until given free range to go and come at will.

In winter and early spring, to keep up egg production, the fowls must have something to work on. The best way to supply them, if there is not enough of waste meat scraps from the breeder's table to meet the required demand, is to get scraps from the butcher or slaughter-house. The waste meat offal, and the bloody pieces which are unsalable, can be bought for a cent or two a pound. The best way to utilize these scraps, and to render them more digestible and nutritious, is to cut them into fine pieces, put them into a boiler with plenty of water and boil them until the bones separate from the flesh. Then stir corn meal into the lipid until it makes a thick mush, season with salt and pepper, and cook till done. Feed this when cold to the poultry, and they will eat it with evident relish; besides, you have a most excellent food which will keep during cold weather.

Stock.

How to Shear Sheep.

I see an inquiry about how to shear sheep, and as I am an experienced sheep shearer, I will give my way. Take a piece of oil cloth about six feet square and tack the sides down on the floor loose enough to permit a sufficient amount of cut hay, or straw, or even straw to be stuffed under it, to make a cushion, then tack the fourth side down. This makes a nice, clean, soft place to shear on, provide yourself with a good, bright, highly-polished pair of offset shears—that is, a shear that the blades set down from the hand-hold.

Set the sheep up with its belly toward you, then commence at the foretop and shear down around the head, and neck, and strip one shoulder, then turn and shear down the other shoulder, and side and belly, and one hind leg all along to the back bone, then turn over and shear down the other side, keeping the sheep in a sitting position the most of the time. In turning the sheep let the head hang over one knee, and then the other, in easy position for sheep and shearer; when you want the hind leg straightened out, do not take hold of the leg with your hand, but put your thumb on the stifle joint, as it is called in horses, and press back; the leg will straighten out smooth and the sheep will hold still, but you take hold of the leg and undertake to pull it out straight, the sheep will kick and struggle. Keep the sheep in such a position that the skin will be tight all the time where you are shearing. Do not pull the wool down, as that pulls the skin up and you will cut it; but pull the skin up tight and bend the sheep so the surface you are shearing over will be as smooth as possible. Never tie a sheep, and do not use any violence towards them. When you catch a sheep take hold around the body, do not catch hold of the wool on the back and drag them to the place of shearing.

Of course this way will be new to many, and you will think at first that it will be almost impossible to shear this way; but stick to the directions given here, and in a short time you will become an expert if you can ever learn. Some men can never learn to be fast shearers. I can shear a pound of wool a minute off a good sheep.—[J. H., in Rural World.

Sow Eating Pigs.

A writer in the Rural recently recommended that a sow which ate her pigs should be slaughtered as soon as possible, as she was not "fit" for a breeder. This does not follow. This disposition is not natural, but is the result of disease. It is an unmistakable evidence of it, and is generally caused by constipation, which is produced by being compelled to live upon too dry or too rich food, and being deprived of exercise. I have known a number of cases where sows, when confined in a pen and fed exclusively upon grain, have destroyed their pigs with as much ferocity as tigers; but in the summer time, when running out to grass, these have proved to be the gentlest of mothers. Sows at the time of parturition are always more or less feverish and excitable. For several weeks before this period they should be fed light and succulent food, to cool the blood and keep the stomach and bowels in the most healthy order. The excitement and ferociousness of a sow when at the birth of the young generally does not last longer than a day or two, and if the pigs are taken away from her and returned only to suck, the sow being muzzled beforehand, they may be saved. The sow should be fed nothing but bran mashes which have been scalded and given to her warm. A large opium pill might be forced down her throat, which would allay the excitement and keep her quiet for a time; and this should be renewed if the paroxysms should return. An ounce or two of castor oil, according to the size of the animal, should also be given as soon as the unnatural condition is manifest. Sore teats or nipples are often the cause of ugliness in a sow. These should be thoroughly oiled or smeared with grease before the time for the pigs to come, being first washed clean. A little attention in this direction will sometimes save a great deal of trouble, besides loss.

If sheep are allowed to graze wheat during the winter and early spring they will destroy great numbers of the eggs and larvae of chinch bugs, army worms, and of the Hessian fly. These insects lay their eggs in the spring and fall and they are hatched by the first warm spell. There are many instances where wheat has been saved from destruction by the grazing of sheep.

Management of Foals.

Commencing with the time that the foal is born, it is generally found that for the first month or six weeks both it and its dam are well cared for, having a good loose box to themselves at night; whilst during the day they have the run of a yard or small paddock, either attached or in close proximity, as soon as both are sufficiently strong to bear it. The diet of the dam must be of the best. In the majority of instances the season is yet early spring, and consequently what grass there is is short, scanty and possessing but a slight amount of nutriment. Two feeds of corn a day must at least be allowed, consisting of a liberal amount of oats and bran, with hay chaff, and a few carrots or a mangel sliced up in each.

In many localities, in the case of cart mares, it is the custom, when about from three weeks to a month after foaling, to put the mare to some light work. Some breeders even do so before, others not quite so soon, it being a matter that depends more upon the condition of the dam and offspring than anything else. Roadster mares are, as a rule, allowed to go on a longer period before being re-used. At first, during the time the mare is away, the foal ought to be shut up in a loose box.

If there are other foals, and it can be so arranged, nothing is more suitable or answers better than to shut two or three in a box; they will quiet down much better, and be companions to each other. At this time a great point is, when the mare comes home from work, if she is in any way approaching to a heated condition, not to let the foal suck until she has become sufficiently cool. Some breeders both practice and preach that the mare should be partially milked directly she comes home from work. My own experience tells me that it is better to slightly milk the mare once or twice during the time she is working, so that she does not become overstocked; and she will, consequently, on her return, be in much more fit condition for her foal to suck than otherwise.

As the season progresses and grass becomes more abundant, the mare and foal may be turned out all day, when she is not required for working purposes, and, as the weather gets suitable, at night also.

Most breeders are accustomed to wean their foals at the age of 5 or 6 months. The foal, when weaned, should be put into a loose box, being kept housed entirely for a few days. In those establishments where there are several foals bred annually it is the best plan to shut two or three up in a box together. The diet most suitable for them at this particular time being cut green food, a very small quantity, with hay, chaff, and bran twice a day; a mash or two is often advantageously given. After about a week they may be allowed the run of the enclosed yard, and at the expiration of ten days or a fortnight all may be turned into a grass field, which, if not adjoining the yard, should be provided with a fair sized shed or hovel for them to run in and out as they please. During the autumn and early winter they will do very well here; but in addition to the grass they can pick up they must be liberally fed—crushed oats and bran, a few pulped roots as winter advances and a little hay being the most suitable provender.

In mid-winter, when the weather is very severe, it is always best to shut the colts up entirely at night, allowing them the run of the yard only on snowy or rough days, at the same time taking care that they have plenty of good food to eat. Should the winter be an open one, there is no objection to their having the free run of the pasture in the middle of the day. As spring advances, they may again be allowed open course in the pastures, and as green food makes its appearance, so may the dry food be lessened in quantity, but not too soon. Spring grass contains but little nourishment. About this time, too, it is as well to separate the colts from the fillies. They will be found to thrive better if they are shifted from one pasture to another for a short time, before being ultimately turned away for the summer, previous to which, however, those colts that are sufficiently advanced and intended for geldings should at this period be operated upon.

Foals are at all times exceedingly prone to accidents. Their youth, manner of life, and in some instances, I am sorry to say, the rough way in which they are treated on farms, subjects them in no small degree to the liability. That there are many unavoidable accidents is without doubt, but frequently we find the young animals victims of a disaster which it is possible might have been well prevented. Hence it is necessary that every care and kindness should be exercised in their daily management; in fact, the earlier in life their at-

tendants thoroughly ingratiate themselves with them the better. I am not an advocate for, nor do I think it necessary to tie up or halter foals until they have been weaned, except in the case of those used for show purposes. If a foal has been gently treated all its life and become thoroughly used to being properly handled and touched on different parts of the body, it will be found that, after it has been shut up in a box for a few days and forgotten its dam, it will allow the slip or halter to be placed on its head with more ease, and will soon stand tied up to the manger. This, however, will not be the case when the youngster is all anxiety to get to its dam. Another important point is, as early as possible to accustom them to have their feet and legs handled, for should perchance the animal meet with an accident on these parts of the body, or its feet required to be pared, unless it has been properly handled there will be a very dangerous struggle for the first time; and many instances I could mention where serious and even fatal injuries have unavoidably been inflicted in the efforts to induce the colt to yield to its master. It is, too, the great tendency to render the foal intractable that constitutes such an objection to its running alongside its dam whilst at work in the fields. These points are worthy of the consideration of breeders.

Experience teaches that kindness and gentleness cost nothing; and if adopted in the care and management of foals, as of other animals, the breeder will not fail to be fully compensated for the exercise of such virtues.—[Agricultural Gazette.

In-and-in Breeding.

The English papers are beginning to advise their breeders of thoroughbreds to go outside for an infusion of new blood, and point out that the successes of the American horses now in England entitle them to be considered fully the equal of any in the world, and that no deterioration in form or quality need be feared from such action. It is hinted, at the same time, that the English have bred too closely, and that the consequence is a lack of stoutness in their stock. While there is no doubt a falling off to some extent in the stoutness of the English race horse as compared with those of thirty or forty years ago, it is more owing, we believe, to the system of early training, the sacrifice of stoutness to speed to meet the requirements of the four and five furlong and mile races, and the hot-house system of forcing they have followed so as to be able to bring their animals to the starting post long before they would have matured or acquired the form and endurance necessary to a race horse in a natural way.

In and-in breeding is frequently held responsible for anything that the breeder cannot understand. But there is not a single domestic animal of superior excellence that is not indebted to this very system for its most valuable characteristics. The race-horse, the various improved breeds of cattle, sheep, swine, dogs and poultry, have all been improved by in-and-in breeding, and those who have acquired fame as breeders have invariably done so by adhering to this principle.

There are undoubtedly many cases where in-and-in breeding may become positively hurtful, but the judicious breeder can easily avoid them. If a breeder has an animal of peculiar excellence, how can he retain and fix this excellence upon the animals he is breeding except by following this principle? Where an animal is faulty, in-and-in breeding will just as surely fix those faults into a type as it will fix the good qualities. A judicious breeder would avoid such a mistake as this, and it is the judgment that enables him to select out proper animals to breed from that is at the bottom of his success. In-and-in breeding is absolutely necessary, and is not hurtful if the animal's chosen are free from blemishes and have only good qualities to impart to their offspring. It is positively hurtful where the animals bred from are ill-formed or lack constitution. Bad qualities can be bred into an animal just as readily as good, and in-and-in breeding will fix the one just as surely and permanently as the other.—[Mich. Farmer.

A REMEDY FOR SORE TEATS.—It is said that if linseed oil is applied to sore teats for a few times, both before and after milkings, it will effectually cure any case of the kind. Many cows are kickers until their teats are so treated, when they become as quiet as lambs, and seem delighted in being milked. Teats may appear smooth, but still are tender, and only need a little oil to make the cow perfectly willing to be milked.

The Term "Thoroughbred" as Applied to Live Stock.

During the recent Agricultural Convention at Washington a very interesting discussion occurred as to the use of the word "thoroughbred" as applied to live stock. Following a paper by Gen. Jackson, of Tennessee, upon "The Blood Horse," Commissioner Loring took occasion to say that, in his opinion, the term thoroughbred, as applied to anything but the horse, was a misnomer. A certain breed of horses that traced their lineage back to the Arabian horse, and whose present degree of perfection had been acquired through years of careful and judicious breeding, had for ages been designated as thoroughbreds, and so general had become this term, as applied to this particular race, that the word had at last become the only name by which they were known on both sides of the Atlantic. It was conceded that an animal could be pure bred and not necessarily a thoroughbred, and Dr. Loring advised that the term be eliminated from all premium lists, and that an effort be made to give the American race horse the full benefit of the name to which he alone is entitled. To denominate a blooded cow as thoroughbred was not proper, and the premium lists of state, county and exclusively stock shows, should simply refer to all kinds of live stock as pure bred, leaving the term thoroughbred to the noble race of the horse, to which it legitimately belongs.

At first blush the force of the proposition does not seem to possess great merit, but second thought suggests the propriety of the claim. If there be any virtue in the name, certainly the race horses, which have for generations been known as thoroughbreds, should have all the honor and renown of the appellation. English writers very generally accord the title to none but the particular race of horses to which, by common consent, it rightfully belongs, and the managers of American fairs should discontinue the use of the term, except as applied to the race whose pedigree shows the blood of the Arabian or Barb horses.

The proposition to reform the premium lists in this respect is quite generally approved, and except in localities where custom has become so deep seated as to supersede good sense, the change can be made. Thoroughbred bulls, and the exchange will undoubtedly be for the best.

The Art of Breeding.

This is a subject that exhausted the learning of savans, set forth in ponderous tomes and lectures and newspaper articles innumerable, and therefore cannot be treated in anything like an exhaustive manner in a simple article such as we propose to lay before our readers; but at the same time, there are prominent or salient points in the art of breeding that should ever be kept strictly in view of those who propose to improve our domestic animals by breeding.

In the first place, the breeder should have in his mind's eye the exact form or quality that he hopes ultimately to accomplish in his efforts. That is, he should know exactly what he wants, and not be striving after simply a general principle. For instance, no man will ever accomplish anything as a breeder who simply hopes to create a general improvement in the race of animals he is breeding. On the contrary, he should have a definite point in view as to the color, texture, length or other quality of the hair; the speed, endurance, size or form of the body, or the quality or early maturity of beef, or as in our field, the quantity or quality of milk produced in a given time. Let him take one and not all of them, as the standard he proposes to breed to; and with proper care, a fair amount of good luck, and that determined perseverance that conquers all things, he may reasonably hope to succeed. Above all things, however, let him not underrate the difficulties that lie before him. The animal kingdom is exceedingly plastic—susceptible of great and radical changes. This is the point upon which the beginner usually builds his hopes; but he rarely appreciates the fact that, while this is the principle in his favor, it is also the lion in his path. It is easy to create a change in the animal form or quality that he begins with, but this susceptibility to change hangs to it all the way through, and having by good luck, accident or perseverance accomplished the end in view, this old principle comes in to break up all the results already accomplished. In short, it is easier to arrive at the end in view, than it is to stay there when once accomplished.

If your object be to breed a deep, heavy milker,

for instance, this can be done with comparative ease, but what you really want is a race of deep, heavy milkers; and, to your astonishment, the one you have bred cannot reproduce herself. Her calves will in most instances disappoint your desires. To overcome this and reach a desired end, the only way is not a royal way, but a very humble and diligent way; and that is to keep trying until you find that certain cows and a certain bull "knick," as it is called. That is, the offspring by that mating make the best milkers, and by a steady line of in or close breeding the good already accomplished can be continued; and even here you have a sharp-edged and dangerous tool to handle. In-breeding in proper hands is the sheet-anchor of the breeder's art; but in careless or inexperienced hands it is sure to bring the breeder into trouble. By this means the most abrupt and radical changes can be wrought in the animal form or general characteristics, and just in proportion to this power is its danger.

In-breeding should never be practised with animals that are in any measure out of form; but even this is not the absolute test, for it is in their offspring that we look for improvement or deterioration. If they breed strong and healthy when in-bred, then the experiment can be continued until bad results begin to crop out, when fresh or outside blood should be introduced. This last remedy should be applied with great care, as a false step here will ruin all the good effects of all the labor that has gone before. The out-cross, as it is called, should usually be taken from a near kinsman, so as to make the change as little radical as possible, with a constant view to keeping in the line of the original breeding. It is never well to get frightened too soon, as it is never well to hang to a theory too long. In other words, good sense and level head are of almost indispensable value to the breeder, as he must shift his position and change his tactics with every varying result, and yet hang to his original purpose through thick and thin with a never varying purpose that in time accomplishes all things. This is perhaps not a very rosy picture we have drawn of the hopes and prospects of the breeder's art, but it is nevertheless true; and it will be well for those who start in it to measure well the difficulties to be overcome before they embark not only their hopes, but, as often happens, their whole fortunes in such enterprises. Go slow and steady well the principles involved, is a good rule in this as in all similar undertakings.—[Plowman.

Hints to Horsemen.

It seems, says the *Scientific American*, to be a characteristic failing for most coachmen to lay the lash on a horse that exhibits fear at an object in the street or beside the road. Mr. Bergh, the President of the Society for the prevention of cruelty to animals, says in the organ of that society, what every reasoning being ought to know, and that is never to whip a horse for becoming frightened at any object by the roadside, for if he sees a stump, a log or a heap of tanbark in the road, and, while he is eyeing it carefully and about to pass it, you strike him with the whip, it is the log or stump or the tanbark that is hurting him in his way of reasoning, and the next time he will be more frightened. Give him time to smell all of these objects, and use the bridle to assist you in bringing him carefully to these objects of fear.

Stock Breeding a Specialty.

We must have men whose business is breeding farm stock. We have some, and they are, almost without exception, men of the highest order as men and as farmers. Their names are to be found in almost every agricultural periodical, and they are always out to the fairs in force. They have splendid stock and they want people to see it, and to learn about it, to compare it with scrub stock, and to be benefited by the comparison. It seems to me if there are a class of men who are engaged in any agricultural branch who are deserving of greater praise than others, and who labor harder than others, for the public good, it is the thoroughbred cattle breeders, the horse breeders, the sheep breeders, the swine breeders, the poultry breeders of our day. Their increasing sales from year to year and the great increase in the importation of pure blooded animals, show unmistakably that their labors are being appreciated. The fine grades in every State and county, and the general desire for stock improvement, indicate that the future for our stock husbandry will be progressive and profitable.

Profit in Sheep.

Sheep are rapidly increasing in number in America. Were it not for the multitudes of dogs which roam abroad in all places, sheep would be kept everywhere in the small flocks which were usual 40 or 50 years ago. There is no other farm stock so profitable as sheep, for the amount of money and care involved, excepting, perhaps, poultry. And there is none other that is so useful and acceptable for domestic consumption. A fowl, or a pair of them, provides an excellent meal, but only one, for a family. But a sheep would furnish a supply of meat for two or three weeks or a lamb for a week, and would be a desirable and healthful change from the salt beef and would be a desirable and healthful change from the salt beef and the pork, bacon or ham that is too often the staple provision for the farm table. This view of the sheep is not without interest to a great number of farmers and farmers' wives, who desire to provide as liberally as possible for the culinary department of the homestead; and the profit involved in it is by no means insignificant or unworthy of regard.

But there are many farms where a flock of respectable size might be kept for the income to be derived from it. A sheep worth \$5 should pay a yearly profit of \$5. There ought to be 100 per cent. profit on sheep on a farm suitable for their keeping. That is, where mixed farming is practiced, where grain, hay, straw and roots are produced, and where there is a permanent pasture, 100 sheep could very well be kept upon 100 acres, or at least 100 or 150 sheep could be fed upon a farm of that size through the winter. A farm of 100 acres of the kind referred to would have 20 acres of corn and corn fodder, 20 acres of wheat, 20 of oats, 20 of hay, and 20 of pasture, or some acres less of pasture and devoted to root crops. This would supply 60 acres of coarse fodder, which, without sheep, would find its way to the manure heap without serving an intermediate purpose as food. Now, it ought to be a standard fact in agricultural practice that coarse fodder is more valuable for manure after it has passed through an animal and is brought to the condition of dung than in its raw state. And, besides the profit from this, it has also contributed to making some flesh, milk, butter or wool besides. No farmer who works a farm that could be used in this manner should neglect the feeding of a number of sheep. If he cannot keep them the whole year, he should certainly keep them from harvest to the next summer, purchasing them as soon as the stubbles are cleared, so that the sheep could glean the fields and utilize the wasted grain now lost, feeding them through the winter, raising a crop of lambs for market, and fattening the sheep as soon as the lambs are weaned, by feeding some grain food on the pasture, and so clearing up the investment with its 100 per cent. or more of profit within a year. In England, sheep so managed are called the "rent-payers," that is, they are sold for cash and the profit on them provides the cash to pay the rent, always in that country a large sum, and an onerous charge upon the farmer, and yet one that must be paid first of all. Here the flock should be the money crop, which formerly wheat was, but will never again be, because one cannot now grow a crop of wheat without paying out to produce it about as much as it brings when sold. The soil will no longer produce wheat as it did years ago; and now we have to replace it with some other product; a flock of sheep, if we will only give the requisite care and attention to it, will now take its place as a leading money crop.

A great difficulty in beginning this business is to choose the kind. One looks here and there, at this breed and at that, and cannot make up his mind which to choose. And he is right to be cautious, because the right sheep in the right place only will be profitable. But if he is in this quandary he may very safely choose a lot of good, thrifty native ewes and a ram of any of the four breeds mentioned below, which he can procure most readily. The Hampshire stands first, the Oxford next, the Shropshire next, and the Southdown last—that is, for profit. All these are compactly built, solid, heavy sheep, with good flesh, small bones, salable wool, and the lambs are plump, hardy, fat, and of good size. And a good ram can be purchased at a reasonable price—that is, if the professional importer is not sought after. These persons put their figures too high for a farmer's purpose. There are always those farmers who have bought a ram at a high figure and will yet sell a lamb for little more than the worth of the carcase. And yet, if one has the means, he can very well

afford to pay as much as \$40 or \$50 for a good pure-bred ram; the ewe lambs will pay the cost in one year, and the male lambs which go to market will pay for him a second time. Farmers generally have learned the value of good stock, and know how it pays to feed such animals. Pure breeding has proved its value to them, and they are willing to pay extra for the blood. And they are right, and especially in regard to sheep, because no animal is more quickly impressed and improved by crossing with good blood than a sheep.

Cows in Summer.

Cows that are in milk should be watched and given extra food as soon as signs of a falling off are seen. It is very difficult to increase the flow after a shrinkage occurs. So soon as the pasture begins to get short, supplement the feed of the field by a ration of green fodder in the yard or stall. Many cows suffer from the excessive heat, being exposed the whole day through to the hot sun in a treeless and shadeless pasture. A pasture should afford a comfortable place, as well as furnish food for the animals, that the greatest profit may be obtained. —[American Agriculturist.

Action in Horses.

We propose to consider the walk, the trot, and the gallop. A horse to move well, must first stand well on his feet, which should be parallel to each other, and rather approaching one another than with any considerable interval at the ground. The next feature to observe is that the legs and joints are in just proportion to each other, that the cannons are parallel, and that the knees are strong and true in detail, both in regard to size shape and position. Ascending higher, we note the elbow—whether inclined "in or out"—and also whether it is clear off the floor of the chest. The chest in hacks and harness horses should incline in depth rather than breadth, as in the cart-horse, the increased capacity gained in depth being a set-off to the loss in breadth. See that the scapula or shoulder blade is long and well laid back, and that the humerus or lower bone of the shoulder is neither too long nor too short, but of moderate length, for a long humerus makes a horse lean or stand under, while a short humerus circumscribes his action. Avoid in the sire all anomalies of position (1) "in-kneed, and wide at foot;" (2) "one-tied at his knee and ankles;" (3) the "duck-footed horse," long in his pasterns, twisted outwards, in his cannons, or the "cat-foot," one short in the pastern, with the toes turned out unduly; (4) hen or pin-toed, cannons showing lateral deviation, and inclinations of the cannons outwards; or (5) the "bow-legged horse," being broad-chested, open at his knees, and along the surface of the cannons, with too great an interval at the fetlock joint and the ground. Combinations of the above defective positions occur; but at the moment it is sufficient for our purpose, that to breed to profit a horse must go well—it is action that sells, it is action that dealers go for—that a horse that moves truly and well, must be proportionate in make; and possesses the complement of length in his upper bones, and quality in his muscles, brought to a state of perfection by conditioning. A horse that goes well in his fore-action but leaves you badly, will not command a good price nor reward outlay and risk in breeding. In fact, as the old couplet has it—

"He was such a one to bend his knee
And tuck his haunches in."

—is the animal wanted.—[Agricultural Gazette.

Some people dare not attempt to handle their sows. This is their own fault. They get into the pen, when they must, armed with a club or a shovel. Such pens are seldom cleaned, and the pigs which are forced to lie in them must needs be filthy. This is not the way to bring up pigs. A pig is a very easy animal to educate. Like people, whom they more closely resemble than any other animals in some respects, their education must begin when they are very young. If they are brought up in the way they should go, the training should begin when they are sucklings, by picking them up and stroking them gently. If the owner's enthusiasm and interest in them should be so great as to cause him to carry them to the house to show the children and to let them play with them, all the better. The pigs should be handled and taught not to be afraid. When this is done the mothers will be docile and much more easily managed.—[Rural New Yorker.

Garden and Orchard.

The Farmer's Garden.

Our farmers will find it to their advantage to take particular care in the planting of the following vegetables for their gardens during the month. And we may say, as a class, our farmers do not pay sufficient attention to vegetable gardens that their merits deserve. The following hints will be found beneficial:—

For Beans, select light, warm soil, and plant (when danger of frost is passed) in drills two feet apart, dropping the beans two inches apart in the drill, and cover one inch deep. Hoe often and keep the ground mellow. Avoid working among the vines when they are wet, as it will tend to make them rust.

CABBAGE.—One of the best garden vegetables that are grown. Farmers can raise their own plants easily out of doors. Second early and late crops should be sown early in May, and transplanted into well manured ground. Early varieties should be planted in rows two feet apart and fifteen inches in the rows, late varieties two and a half feet each way. The ground must be well worked to produce good heads. The crop should receive as many as three hoeings and three cultivatings. The early Winningstadt, the Large Flat Dutch for winter, The Large Late Drum-head and the Premium Flat Dutch.

CAULIFLOWER.—The Cauliflower is considered one of the most delicious vegetables, and requires very rich and moist ground to bring it to perfection. For early crops sow early in hot-beds; for late crops sow in the open ground, as Henderson's Early Snowball and Veitch's Autumn Giant.

CUCUMBER.—For early use sow as early as possible in hot-beds, one hill with three plants in each sash. For the open ground sow in May, in hills four or five feet apart each way, on very rich land. Put eight or ten seeds in each hill, and cover them half an inch deep with fine soil, and press the earth a little over the seeds with the back of a hoe; keep the ground loose and clear of weeds, and in dry weather water occasionally. After they have attained a vigorous growth and the danger of insects is over, they should be thinned out, leaving four thrifty plants in a hill. The Improved Long Green and the Small Green are the best.

MELONS.—Select warm and light soil—a poor light soil is better than a cold rich one. For general crops sow about the middle of May, cover one inch deep, and when well established thin out, leaving four thrifty plants in a hill. They may be forced the same as cucumbers. Plant in hills four or five feet apart, and pinch off the tops of more vigorous vines from time to time. Early Green Nutmeg, the Large Yellow Canteloupe and the Black Spanish. Also Citrons.

PUMPKIN.—Sow middle of May, in hills eight or nine feet apart, or among Indian Corn in every fourth row. Cover the seed one and-a-half inches deep. To keep off bugs syringe with soap-suds.

SPINACH.—For summer use sow in light rich soil early in spring, in drills one foot apart, covering the seed one inch deep and thinning plants to six inches apart. Soak the seed in tepid water for five or six hours before sowing. Round Summer.

SQUASH.—The Summer or Bush varieties may be five feet apart; the Fall or Winter kinds eight or ten feet apart. Treatment same as cucumbers and melons. They thrive best in a rich, warm soil. We consider the Golden Bush, Summer Bush, the Hubbard and the Vegetable Marrow the four best varieties.

TOMATO.—As soon as danger of frost is passed, plant out three or four feet apart each way; it will hasten the swelling and ripening of the fruit at least a week or ten days, to cut off the vine a little beyond the clusters, and as often as it starts with growth to pinch off all the young shoots. We consider the Large Smooth Red, the Trophy and the Canada Victor are the best varieties.

POT AND HERB SEEDS.—No garden is complete without a few sweet aromatic and medicinal herbs. Sow the seeds of any of them early in May, in shallow drills 9 or 12 inches apart. The soil must be very fine. After the seeds are sown beat the soil gently with the back of a spade. Sweet Marjoram, Sage and Thyme are the best for culinary purposes.

Off Years in Orchardin.

Apple trees will bear every year if the soil in which they stand is made rich enough. This statement is based upon the fact that I have apple trees which do bear every year. This orchard is used as a hog pasture, where a good deal of feed is given to the hogs besides that which the orchard affords. Other trees which receive an annual manuring also bear fruit every year. It is evident that apple and other fruit trees cannot yield an annual crop unless they are liberally supplied with fertilizing material. There must be enough supplied to produce the fruit and also to promote vigorous growth. When this is done annual crops may be obtained, and when it is not done the tree requires a rest sufficient to renew itself and to make the growth needed for another fruiting. There is no doubt that thinning the fruit when there is an excessive crop will prevent the exhaustion which unfits the trees for bearing the succeeding year. A large pear tree has never failed to produce an annual crop of excellent fruit since the ground underneath it has been used for the coops and as a feeding spot for chickens. There is nothing more conducive to healthy growth in apple trees than potash in the form of wood ashes. An application of wood ashes would tend to do away with off-years in bearing. It is not reasonable to expect a fruit tree to yield an annual harvest unless it is fed in proportion. This is a natural law. An overworked tree must also be proportionately a failure unless its exhaustion can be prevented. Thinning the fruit and bountiful manuring are the natural, and in my judgment the proper remedies. Manuring must not be carried to excess. An apple tree will die in a barnyard. Common sense must be exercised. There is, however, the most danger from starvation.

A Garden for the Children.

Let the children have a garden of their own, and encourage them to take such measures as will be sure to give satisfying results. Children love flowers, says *The London Globe*, "as ducks love water"; and they take the finest pleasure in giving of their own to friends, and especially to the sick or the grieving. The same paper prints a touching account of the unfortunate little Dauphin of France, son of Louis XVI. and Marie Antoinette, getting up early of summer mornings in order to cut the sweetest and best flowers from his own parterre to present to his mother; and taking delight in concealing himself in the bed-curtains to see the gratified smile with which the Queen opened her eyes upon them. He would labor with all his tiny strength to keep up the supply, and if the officials begged him to let the gardener do the work, he would entreat to be allowed to go on, because his mamma liked the flowers so well that he raised and carried them to her "all himself." Prince Albert used to encourage the little princesses to cultivate not only flowers but fruit and vegetables in plots allotted to each, and a convenient little kitchen was fitted up near in which they cooked and prepared the produce of their ground. Those daughters are now known of all the world for their virtues and amenities. They are a pleasing contrast to scions of the same family of a former time, and shining examples of what good education (not of books alone) can accomplish in one generation. The kindergarten should be more than a garden in which the children are merely the plants to be cultivated. If they are also made cultivators in a real garden, of the beautiful and useful among plants, they will derive from it more of good and capacity for doing good than all the desks and books in the world can alone supply.

It pays well to pass coal ashes through a fine sieve—a flour sieve for instance. This sifted ashes, when perfectly dry, as it should be kept, is one of the best substances with which to mix London purple, Paris green or Hellebore for the destruction of potato beetles, fruit slugs, currant or gooseberry worms and the like. Being lighter than plaster or flour, it does not fall so quickly, but settles upon every part of the plant—the stem, the under part of the leaf, as well as the upper part. It may be said also that it adheres to leaves for a long time and is not so easily washed off by rains.

HOUSE PLANTS.—Four ounces of sulphate of ammonia, two ounces of nitrate of potash, one ounce of white sugar, one ounce of hot rain water, cork tight, with kid tied over the cork. Use one tablespoonful to one gallon of water once a week at first, then twice a week at regular intervals. Do not wet the foliage, only the earth. A few drops every ten days will hasten blooming when in bud. Do not use on cuttings or pour plants,



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

SPECIAL NOTICE.—We receive numerous communications to which no names are attached, and asking for very lengthy and full information without enclosing stamps for reply. We require that the name of the subscriber should be signed, not necessarily for publication, but as a guarantee of good faith. Letters sent without conforming to the above, find their way into the waste paper basket.

SIR,—I send you a safe, sure and cheap remedy for the currant and gooseberry worms. One pound of best Paris green, mixed with 150 pounds of land plaster six or eight weeks before wanted for use. As soon as the worms show themselves in the spring, dust the plaster and green on the bushes in the morning when the dew is on. This will kill the worms every one if well done, and not hurt the fruit. One application is enough for one year. I have used it for twenty years myself, and eat the fruit, and found the green to do the fruit no harm in its young state. The green and plaster should be used when the fruit is in blossom, or very soon after. Don't use the green when the fruit is large.

How to Make a Duster.—Take a round piece of tin or sheet iron about eight inches in diameter. Punch it all full of holes with a large round awl. Sew a strong piece of cotton around the edge; this will make a little bag with a sieve in the bottom. Put the plaster and green in this little bag, and in less than five minutes you can give the currant and gooseberry worms in your garden one feed that will do them for life.

A smart boy with this duster can kill all the potato bugs on two acres of potatoes in one day. But if the bugs are bad, they will have to get two doses at different times, as they show themselves.

J. B., Ellaton P. O.

SIR,—Please tell me, through your valuable paper, if prickly comfrey will pay? Now the question is, is this plant all it is recommended to be, and will it not spread and soon become a nuisance to farmers.

F. W. S., Rosedale, N. B.

[It has proved satisfactory to some who have tried it. See W. H. O. H. in this department.]

SIR,—My sons like farming well and their crops in roots and oats were very good last year, but peas and barley were poor. They have 40 acres cleared for this spring, which I think very good for three years, for boys brought up in Montreal city, who knew nothing about farming. They have 5 acres of pasture and 10 acres in hay to start this year on. Last year they cut 4 tons of hay for the first, which was the only hay cut by the new settlers in this part of Amherst. They have 7 head of cattle, 3 pigs and 1 horse; they are going to get some sheep this spring and some young stock after hay time, for they intend to sow down 15 acres more this spring, and put what they have in pasture. Their brother, who is in Montreal, has a lot within half a mile of them, and has 22 acres cleared, which will be all seeded down in hay this spring. The intention is to go into cattle raising.

J. W., Montreal.

[The above shows what city "lads" can do.]

SIR,—As I am thinking of buying a 100-acre farm in the western part of Ontario this summer, in a good healthy section, what part would you recommend—near London, Woodstock or Clinton? What could a farm be bought for? Would you answer through the ADVOCATE your Bowmanville subscriber.

J. P.

[From \$10 to \$125 per acre. Would recommend you to take a good look around. Within 100 miles of this city you could do as well as in any part of the Province, perhaps in the Dominion.]

BEET ROOT SUGAR.

SIR,—Would you kindly inform me whether there is any secret process in the manufacture of beet sugar, either in the extraction of the saccharine matter, the evaporation of the sap, or the crystallization of the sugar? Can a manufactory be started on a small scale? Does the Canadian Government offer any aid as an inducement for the cultivation of the beet and sugar manufacture? Would it not be profitable for a number of farmers to make their own sugar, where it is worth 10c. per lb.? By answering the above you will greatly oblige.

J. R. H.

[We have yet to learn that beet root sugar can be made profitably in Canada. Up to the present it has not been. It has been tried in Ontario and Quebec. Our cousins in the State of Maine attempted it with capital and skill, but failed to make it remunerative. We should advise you by all means to abandon the idea in your locality, and advise you to try sorghum. We can raise all the saccharine matter we require from this plant in Ontario, if we choose, and we believe you can and will in your locality.]

SIR,—I find the correspondence in the ADVOCATE so very interesting and full of practical hints for farmers, that I write you a few lines that may be of interest to some of your readers. Having been a subscriber to American agricultural papers for years, I must say I consider the FARMER'S ADVOCATE superior to them in every respect. They are too much occupied with matters in which we have little interest.

I have tried several varieties of oats, but found none so profitable for the farmer as the black Tartary. Have sown every variety that I have seen recommended, except the Norway and the Hulless, which latter I consider a humbug. The black Tartary has with me produced 60 to 70 bushels per acre, being ten, and sometimes as much as 25 bushels more than other varieties. My land is a clay loam and may be more suitable to the Tartary. It may perhaps be different on other soils.

The Southern Counties' Agricultural Society, the one I am a member of, have made arrangements that the President be elected from the town and country districts, alternately, so that we all work together harmoniously. We take care that there shall be no clashing of interest. Our exhibition is to be opened on September 19th. We are opposed to the Provincial Exhibition being extended to two weeks, monopolizing the benefits as far as the directors can do, of what others should be allowed to partake; there is too much of this grasping. I am quite satisfied with the stand the ADVOCATE takes in this matter, but I am not in favor of so many small exhibitions as there are at present.

W. A., Yarmouth P. O.

SIR,—I have taken the ADVOCATE, and I am for years happy to state that I have been very much pleased with it, and consider that no farmer's house is complete without it. I had intended on several occasions to write you on subjects which have been discussed in your paper, but through the hurry of other matters was not able to do so. I must thank you for the stand you took in regard to township shows; I consider to do away with them would be a great injustice to the majority of Canadian farmers. There is no doubt, in my mind, and I speak from long experience, that township agricultural societies are doing more good among the mass than all other Riding shows; I might almost say that it would be as well to do away with our common schools, and let all children go to the high schools. I agree with you about the combination that is formed among the breeders of Canada in order to have a monopoly of the sale of thoroughbred Durhams in their own hands by raising the standard of pedigrees, so that it cuts off nine out of every ten of our enterprising Canadian breeders; it is in par with many other schemes in this country these last few years, which is intended to benefit foreigners and speculators, at the expense of one thousand. I wonder very much at our farmers taking the matter so coldly. I wish the ADVOCATE every prosperity, and hope that it will stand out on behalf of the farmers of Canada, in all right matters, as it has done.

J. D.

SIR,—Was the bill mentioned in the ADVOCATE, last number, requiring a board for the protection of cattle to be placed on barbed wire fences, passed by the Ontario Legislature?

FARMER, Leamington, Ont.

[No. It was not?]

SIR,—Keep up the Manitoba Show. Party politics have not yet reached it, but they have nearly destroyed the usefulness of our other institutions. Our election of officers and council, P.A. & I. S., is run on a good plan, each subscriber receiving a ballot paper with a list of those entitled to serve on the council, and each person can vote for 17 members. I fully agree with your article about over-feeding hay. I have tried feeding small quantities and often, and going out to feed at nine at night. I always had warm stables and always commenced feeding early, and yet my cattle came out poor. This year I feed twice a day, about 7 a. m. and 5 to 6 p. m., a good large forkful to each cow, and water at noon, giving salt whenever the weather is mild. Every beast is gaining, with the exception of four strippers that are giving milk, which just about hold their own.

(1)—I am anxious to get a good bull (Short-horn), and am afraid to write for one for fear of getting something poor. What would be the best way to act? The stock that has come here so far has a pedigree, but has nothing else to recommend it, except crooked back and legs—good poor-house stock where shanks and tail are in demand for soup; and such sell for \$125 to \$250. I have 30 common cows, so I suppose I should require a bull about 20 mos. to 2 yrs. Your article on bulls is just what the farmers here have been puzzling over for some time, the cows coming round repeatedly and a large percentage missing each year; their bulls are kept like Turks. (2)—I have a cow that only comes in season once in two years, but she raises such good stock and is such a large milker (giving nearly a pailful the second season each milking), that I don't like to kill her. Can you account for this and give me a cure? (3)—What condition is rubber paint in? Does it come ready for use? I want to paint my wagon, buggy, mower and reaper. Would it be suitable, or is it only for house use?

J. F., Cook's Creek.

[In our advertising columns you will find the names of breeders who can be depended on. Many of them we know could and would supply you with just such an animal as should suit you, and at a fair and reasonable price, if you would state to them just what you want. 2—Either be satisfied to keep the cow as she is, or sell her. 3—Rubber paint is put up ready to use without any mixture. We have used it on outdoor work as well as on house work, and from our own experience consider it cheaper and better than the paint generally put on by painters.]

SIR,—Would you be so kind as to inform me if anything can be given to horses to prevent them from taking the pinkeye. Almost every mare in foal that takes it loses the foal without exception.

M. J. A., Parkenham, Ont.

[We would say that there is no preventative, as the disease is due to atmospheric conditions. The loss of foals is probably caused by the use of very powerful medicines containing potash, nitre or ergot, otherwise there is no reason for the loss of them.]

A HEN YARD.

SIR,—I wish to engage in the poultry business, and have thought out the following plan, and would like to have your opinion: Lay out four plots, of one half acre each, with a separate building for each plot. Take plot No. 1 on which to raise the chicks the first year and keep them on it for two seasons laying, then fatten for market. The fourth year cultivate. The second year take plot No. 2 on which to raise the chicks. The third year begin on plot 3, and so on, always taking the plot that has been cultivated the previous year. This would give clean, fresh ground to start each flock on. Would fifty hens be too many to keep in one flock? What would be the cheapest and best fence to divide the plots, and how high should it be?

P. W.

[Your idea of dividing your fowl paddock into four lots is, we think, a very good one. The change to fresh ground must be a benefit to your flock, and be good for their health. Fifty hens in each, as you propose to keep them, would not be too many. For fences, wire would be the neatest, but boards or laths would be the cheapest; boards the best in every respect if shelter be any object.]

SIR,—Would you please answer through your valuable paper where seeds of the Russian Mulberry may be had and oblige?

G. W.

[Can any of our subscribers supply the information?]

SIR.—We have had a very agreeable winter; there were a few days in February rather cold, but only a few, the remainder has been beautiful; it is now quite mild, the sides of the hills are getting bare of snow. I am told by those who have spent winters in Winnipeg, that the winters are much more severe there than here. Prince Albert is a place of considerable attraction, land being rich, but rather subject to early frosts. Further east is Carrot River, another rich place, fine hay land, and it is generally considered a good place. Then we have Battleford, another great place; soil, rather light, that is a little more sandy, but not troubled with early frosts. The country west of Battleford, up the Battle River, and between Battle River and the Saskatchewan, and on the north side of the Saskatchewan, is generally good. The Jackfish Creek and the Turtle Creek afford any amount of water-power for mills, etc. The lakes from which those creeks receive their supply are full of white fish of most excellent quality; thousands are taken out every winter by nets, by cutting holes through the ice. Wood is rather scarce on the north side of the Saskatchewan, anywhere near Battleford; further back there is plenty, and, I am told, that further up the river there is plenty. There is good land in the Eagle Hills, but rather hilly and broken to make a real good settlement, but it is finely watered, full of lakes, which are covered with ducks in the season, and would make a good country for raising cattle, being finely sheltered, and the sides of the hills having very little snow on them, are soon bare. I was out about four miles to the Stone Reserve, and I saw that there is very little snow, and the hills all bare; the snow seems to be thawing under as well as on the top, and will, to all appearance, soon be gone.

Yours truly,
T. C., Eagle Hills., N. W. T.

SOWING RAPE.

SIR.—Please say in your paper if rape is a good crop to sow on land to be plowed down, and if so, how much to the acre, and when it should be sowed?

H. G. T.,
Wyoming, Ont.

[In answer to our correspondent we may state that rape is a very good green manure to plow under, but it would be more suitable to certain kinds of land than others. On light, sandy soil, we prefer buckwheat. The ground to be generally benefited by the application of green manure should be capable of bringing them forth with such an abundance as to produce a complete shade to the surface, and a large enough mass of vegetable matter to cause rapid and constant fermentation when buried by the plow. Rape would not answer this purpose as well as buckwheat. Ten pounds to the acre should be sown, any time from the middle of June to the last week in August. If to plow under for fall wheat, get in as soon as possible, to allow plenty of time to rot after plowing down.]

C. M. B., Markamville, N. B., has learned, by experience, that manuring the soil is the best method of preventing the growth of the ox-eyed daisy.

CLOVER AFTER OATS.

How do you think clover would do after oats to plow down next summer as a manure, and sow fall wheat on it? I have a fallow to break up this summer; what do you think would be the best to sow as a green crop and plow down as manure? Please answer in your next issue and oblige.

Yours truly, J. A. S., Claude, Ont.

[Clover would do well to plow down as you say. 2. We recommend buckwheat sown about the first part or middle of June, and plowed under when in flower for your summer fallow.]

KANSAS HEARD FROM.

SIR.—I having promised to send you my opinion of Kansas, thought I might give a few advantages and disadvantages in regard to stock raising here. The first advantage and most worthy of mention would be the unlimited range cattle have, which enables a man with a small farm to keep a large stock. Some claim that cattle do not need to be stabled in winter, but I think that if they had stables the cattle would be a great deal better in them. The cattle are kept in yards with scarcely any shelter and fed there, and I think it would be far more agreeable to feed under cover. Water is rather scarce, and not very good, which is a great

drawback, for cattle need good water and plenty of it, as well as man. I cannot see that anything can be gained by coming here to go into stock raising, for, in the long run, I think that cattle can be fed cheaper in the winter in Canada than they can here, and they have to be fed as long. Grass may come a little earlier here, but it gives out a great deal sooner; there being no tame grass used as pastures. The reason I think cattle can be fed as cheap, if not cheaper, is that corn is the only crop which can be relied on, and stock will not do well on corn altogether, it being too strong, and the other grain is so dear that it soon amounts to a considerable sum. I think if a man has any chance to make a comfortable living there he would be very foolish to come here with the intention of bettering himself; even the day laborer is far better off there. They will get about fifteen dollars (\$15) per month here, and have the privilege of working fourteen hours a day and seven days a week. After a little longer experience here I will perhaps write again. I remain,

Yours truly, Wm. M., Kansas, U. S. A.

[We appreciate correspondence from our own subscribers, as they are generally to be better depended on than special pamphlets.]

SIR.—You will all seem to think there is going to be a terrible smash here soon. No doubt there has been a large number of town sites thrown on the market, and sales made at fabulous prices, and a great many Ontario people have been taken in. Some people will buy anything so long as they see a highly colored map, not thinking the lots they are offered may be one or two miles from the original survey of a little one-horse village, and will readily pay \$50 to \$200 per lot, also, for town sites which have been sold in the centre of a swamp. But anybody that buys good property and buys on the ground floor is going to make money, whether it be town or farm property, as the soil is so productive that people with limited means will do better here than in Europe, and even in Ontario. I have been talking to farmers who you could not induce to go back to Ontario by any means. We have just had one of the greatest booms that has ever struck the country. Last week Col. Walker, of London, Ont., and A. W. Ross, of Winnipeg, Man., secured some blocks from the Hudson Bay Company of Edmonton, property, and the people have been looking forward expecting a boom sometime in May. They placed some of them on the market Tuesday, and at night it came out in the evening papers that the Hudson Bay Company were going to offer some of their lots for sale next morning. The purchasers rushed to their offices, and were informed that the plans would not be ready till 2 o'clock in the afternoon. At 2 o'clock there was a great crowd of purchasers ready to bounce in as soon as the doors were opened, but the crowd was so great that they only sold seventeen lots, and announced that they would be sold by public auction next night. This raised the excitement higher than ever, and lots sold on Jasper Avenue for \$600 and \$700, which were bought at first for \$200 and \$250 each—nice figure to pay for lots 600 miles from any railway, and, what is more, the main line can never cross there; it will either have to cross several miles above or below. The Hudson Bay Company sold between 4 and 5 hundred lots at auction, so the market is overcrowded and I expect a great many will forfeit their deposit. They sold from about \$200 to \$600 each, very few as high as the latter. Very few lots changed hands yesterday, but prices are kept up pretty well considering. Farm property is quiet at present. Most of the farmers that are coming in at present are actual settlers, and they can buy cheaper from the Government, C. P. R. or Hudson Bay Company than the speculators, but the speculators will have a chance during the summer to dispose of theirs. There are four or five first-class bridges over the rivers now. They will also have water-works and gas before fall, the pipes being already laid. I also expect to see some of the streets improved this summer, either by block pavement or gravel. Building is progressing with great rapidity at present all over the city. Tents are also numerous on the commons, and the snow is scarcely off.

J. W.,
Winnipeg, April 17, 1882.

SIR.—What will kill lice on plum trees—lice green and purple. Please answer in paper and oblige. H. K., Chliwhack, British Columbia.

[Sprinkle or wash your trees with a strong solution of carbolic acid and water.]

SOWING GRASS SEEDS—THIN OR THICK SEEDING.

Mr. J. Newbigging, of Strathburnie, an old subscriber and for forty years a practical farmer, has visited us at our office. He differs from the FARMER'S ADVOCATE as to the quantity of grass to be sowed to the acre. He says the sowing of so much grass seed as recommended would be a perfect waste. He sows to the acre only three pounds of clover and three of timothy seeds, and says he has from this seeding a heavier yield of grass than his neighbors who sow more than twice the quantity. The common saying that we should make two blades of grass grow in place of one is, he says, quite wrong. Sowing in spring or fall is, he says, immaterial, so as the soil is in good condition. He has sown in both seasons with equal success. His farm, he admits, may be more favorably situated than the greater part of Ontario, being in the southern part of the peninsula. Our opinion may be different from Mr. N.'s, and we give to others the opportunity to reply to him.

SIR.—Could I get the seeds of the Russian mulberry, and where?

[Apply to some of the seedsmen in your nearest city.]

How is rape seed grown? Must it be set out the second year like turnips?

J. K., Chliwhack, B. C.

[Rape seed is generally raised by sowing in the fall and allowing the plant to remain in the ground over winter, and the second season it produces the seed. However, we are of opinion that seed can be produced the first year by sowing early in May, and allowing a second growth the same season.]

ROOTS AND CORN.

SIR.—Will you be good enough to give me an answer to the following questions, for which I enclose a stamp: 1. I am going to plant 50 acres in roots, and wish to know how to cultivate them in the most saving way, that is dispensing with hand labor as much as possible. Do you know any cultivator that does this, or could you advise me as to how to do it. Mr. Cockshutt claims that his cultivator will do this, but I am doubtful. 2. What is the best way to lay off a corn field so that the cultivator can be used both ways? Has one to use a regular corn worker, or is there a better way?

G. E. S., Fredericton, N. B.

[1. There is no implement that will altogether supersede hand labor in the cultivation of roots; any recently improved one horse scuffer will answer your purpose for cleaning between rows. 2. See out of corn-marker in "Hints and Helps" of this issue.]

SIR.—I see you have mentioned about blocking a stable floor with cedar blocks. The blocks want to be six inches long on the floor and nine inches long in the stalls; make the ground level, and put the blocks down, and save the best splitting blocks and split them to the size of the spaces. When they are filled take running sand, and dry, sweep it over the floor until the holes are filled up; the floor wants no other plan.

G. M.

BLACK KNOT IN ORCHARDS.

SIR.—Can you give any information for the prevention of the new kind of black knot now affecting the old standard red cherry, as it seems to threaten their obliteration, which we can ill do without, as it is one of the best fruits of the land.

N. S.

[The black knot in the red cherry, which our correspondent speaks about, is of fungoid growth and similar to the same in the plum, being an allied species to the black knot so common amongst our plums. There is nothing yet known to science that will prevent this fungoid growth. The only remedy is to cut off and burn the excrescence, and apply a strong wash of carbolic acid and soft soap, or carbolic acid and water.]

Can you give me any information about the White Russian Oats? Are they a new variety?

J. S., Wallaceburg.

[We know nothing about them from experience. Perhaps some of our subscribers or some of the seedsmen will inform us. In appearance they resemble the oat that has long been known in Canada as the Australian or Emporium oat, and some call them the New Zealand oat. If that is the variety we knew of no better white oat for general cultivation.]

Farming for Boys.

BY THE AUTHOR OF "TEN ACRES ENOUGH."
CHAPTER IV.

UNCLE BENNY'S NOTIONS—HOW TO MAKE A BEGINNING—BOYS AND GIRLS—DON'T QUIT THE FARM.

By this time the party found themselves so well chilled as to make an indoor lodgement of some kind desirable. The kitchen being prohibited ground, for that day at least, Uncle Benny pioneered the way to the barn, where the boys were glad enough to wrap themselves in horse-blankets, and, burying their legs deep in the hay, they were presently more comfortable than when sitting in everybody's way around Mrs. Spangler's smudgy stove. Uncle Benny, covering himself with a huge buffalo-robe, sat down upon a meal-chest, and, leaning back against the front of the manger, crossed his legs as comfortably as if sitting by the fireplace. Very soon the hired man came in. He had been left for the day unprovided with work, simply because it rained; that being sufficient to take his employer off to the village, to sit up until the weather cleared up, listening to the unprofitable conversation of a country tavern. But his wages went on just as if he had been at work.

It was therefore a strange company of idlers thus assembled in the barn, not one having anything to do. The hired man might have easily found enough to employ him in the barn, or shed, or at the wood-pile, while it rained, and when it ceased for the afternoon he could have busied himself out of doors, had he been disposed to seek for tasks that his employer had neglected to provide. But he was one of that sort of helpers who do nothing not distinctly set before them,—a sort, by the way, no good farmer will ever employ. This man, seeing a gate open which he knew ought to be shut, would never think of closing it unless some one told him to do so. Unless he stumbled over a hoe or any other tool which some one had left in the path, he would be the last to stop and pick it up, and carry it where he knew it belonged. He required, in fact, as much looking after as any of the boys. Uncle Benny used to say of this man, that he was the most unprofitable kind of hand to have on a farm.

The boys were often surprised, as well as amused, at the nice precision with which Uncle Benny lived up to his maxim of a place for everything, and everything in its place. He would often send them up into his chamber to get something out of his tool-chest. Though it was full of tools and other matters, yet he seemed to have a perfect chart of the whole contents imprinted on his memory. He could tell them the exact spot that every tool occupied, which drawer held the screws, which the four-penny or six-penny nails, which the carpet-tacks, and so on to the very bottom. He often said that he could go to it in the dark and lay his hand on anything he wanted. The boys always found things exactly where he said they were. Their experience with this tool-chest was so novel, that it made a great impression on them, and they insensibly fell into the old man's orderly habits about keeping things in their proper places.

If Uncle Benny had felt that he had any authority over the hired man, he would have soon put him to work; for he had a habit of not letting anybody stand idling about him when there was anything to do. The man's example, moreover, was hurtful to the boys. Between him and Mr. Spangler the boys would have been in a fair way to grow up complete slovens; for boys, in a general way, are literal imitators of the good or evil that may be set before them.

Uncle Benny had a hard contest to counteract the effect of these daily patterns of bad management. But his manner was so kind and sociable, he cultivated their boyish affections so assiduously, he entered so fully into all their thoughts, and sympathies, and aspirations, and he was so ready to answer their numerous questions, as well as to lend them his tools whenever they asked him, that in the end they looked up to him as by all odds the best man on the place. The last good turn, of buying for them the very knife they had so long coveted, fixed him immovably in their affections. It was a small matter for him, but a very great one for them.

The very tone of Uncle Benny's voice, his lessons of instruction upon every-day topics, his little kindly gifts, his confidences, his commendations, and sometimes his reproofs, were all important agencies in the education of these neglected boys. He lent them books and papers to read, taught them lessons of morality, and was constantly directing them to look upward, to aspire, not only as men, but as immortal beings.

These four had not been long in their comfortable quarters in the barn, when Tony broke silence by saying: "Uncle Benny, you said that you would tell us how a poor boy should make a beginning. Will you tell us now?"

"Ah, Tony," replied the old man, "there are fifty ways in which to make a beginning. But the first steps in any beginning that will go on prosperously and end happily are these. Fear God, honor your parents, be strictly honest, never violate your word, nor do any act which, if it afterwards become known, will cause you to feel ashamed. You saw that pedlar-boy. He must have made a beginning with but little more than a shilling, perhaps not so much. But he must have had pluck as well as the shilling, for the shilling would have done but little for him without the pluck to set it going. No matter how small, it was a beginning; and if a boy never begins, he will never come to anything useful. He turned his shilling into dollars, his dollars into merchandise, such as you saw in his basket, and then his merchandise into more dollars still. That boy will be sure to prosper. I have no doubt that he has money saved up somewhere. A beginning shows that a boy is in earnest to do something, that he has a head, and is not, like a fiddler, all elbows. If it set him thinking, it will keep him thinking, and this thought will improve his chances by detecting errors and showing him how to avoid them. Half the poor outcasts of this world were made so because they hadn't the pedlar-boy's courage,—the courage to begin. Had they made a start, they might have prospered as well. You are both desirous of doing something to make money."

"Yes, indeed!" shouted the boys with one voice.

"Well," replied Uncle Benny, "a farm is a poor place for even a smart boy to make money on, unless the farmer has heart and soul enough to give him a chance. That don't happen as often as it should, for farmers think too much of what only themselves want, and too little of what their boys do. This farm is about as poor a one, I fear, for the boys to make money on it as any one I ever saw, unless Mr. Spangler thinks, as I do, that they ought to have a chance.

"Won't you ask father, some day, to let us try?" inquired Joe.

"But I don't want to stay here," added Tony. "I want to go to the city, to New York or Philadelphia, and make money there."

Uncle Benny was surprised at hearing this avowal from Tony King. It was the first intimation he had ever received that Tony wanted to quit farm life for city life. Though he was aware that the poor fellow had no living friends,—at least none that he knew to be living,—as the last of them, his father's brother, had gone to the West some ten years before, and had not been heard of since, yet he had not suspected Tony of having even thought of quitting the farm.

He could not help mentally agreeing with him, that for an ambitious boy the prospect was not encouraging. He was surrounded by one of these combinations of unfriendly circumstances that almost invariably drive boys from the country to seek their fortunes in the city. No attractions were set before him to make the farm a pleasant home. It seemed as if Mr. Spangler had wholly forgotten that he had himself once been a boy, for he evinced no sympathy with the young minds around him. His own sons had no recreations of his suggesting or providing. Their holidays occurred only when it rained. No one had thoughtfully supplied them with fishing-lines, though there was capital sport within a walk of two miles. What little they could do at fishing was always done in a hurry, sometimes in the rain, sometimes on a Sunday. Those were the only times when they could be spared from work. If they set snares for rabbits or muskrats, they were the rude contrivances which their schoolmates had taught them to make. They had no pets, for they had never been taught a loving disposition,—no pigeons, no chickens, no beehive, not even a dog. The home affections had been so sadly neglected, that even in the hearts of the Spangler boys there was an unsatisfied blank. In Tony's there was a still greater one, for he was an orphan.

There was also quite a noticeable difference between the treatment extended to the boys and that which the girls received. The three boys slept in a great garret room, a rough, unfinished apartment, hung round with cobwebs, and open enough to permit the wasps to enter and build long rows of nests. There was nothing to educate the eye to neatness or order,—no curtains to the windows, no carpet on the floor, no chairs on which to sit while

dressing or undressing, no looking-glass or wash-stand,—nothing, in short, to give a cheerful aspect to the place in summer, or to make it comfortable in winter. Any room seemed good enough for the boys.

On the other hand, the girls in this household occupied one of its best chambers, carpeted and furnished with a dressing-bureau, chairs, and tables, with curtains to the windows, and a variety of other accessories. It is true that there is a natural aptitude in woman for making even bare walls attractive,—for collecting around them conveniences and elegances of their own devising, and with very meagre materials investing their especial chamber with an air of snugness, cleanliness, and comfort beyond the capacity of the other sex. Such tendencies are inherent in women. But the materials for achieving these results must to some extent be placed within their reach. Here the girls were provided with the essentials,—a rag carpet, it is true, and quite decrepit chairs and tables,—but their native taste contributed the rest. But from the boys even these essentials were withheld; and being deficient in the house-keeping instinct, they lived on in their comfortless garret, conscious of its deficiencies, but without the tact necessary to supply them. If others observed this, it did not matter; it was only the boys' room, and was good enough.

Moreover, of a stormy day, when out-of-door work was impossible, the kitchen was always large enough to contain the girls without their being in anybody's way; but there was never room for the boys. They had wet clothes, muddy shoes, and were complained of as sitting down in the most inconvenient places round the fire. But it was because no others were provided for them. They soon learned they were not welcome there,—the room wherein, of all others, a farmer's boy conceives he has the right of entrance and domicile,—was made so unpleasant that they generally kept away from it.

It was this general neglect that was working on Tony's active mind so strongly as to lead him to think of adventuring on a city life. Though he knew nothing of the risks of that, yet he understood the discomforts of this. Boy-like, he was willing to encounter the former, though unknown, in order to escape from the latter, which he knew too well. The exhortations of Uncle Benny had so generally ended in a condemnation of Mr. Spangler's mode of farming, without effecting any marked improvement in the management, that Tony began to despair of an amendment in which he could participate. He had been born in the country, had no aversion to hard work, and would prefer remaining on a farm; but he was getting tired of Mr. Spangler. It was singular, however, that, while thinking of making a change, it had never occurred to him to go away and engage with a really good farmer, where he would be sure to learn the business thoroughly. Instead of entertaining this sensible idea, he had thought only of a plunge into the city. But Tony was young in the experiences of this world, and had much to learn.

The dissatisfaction thus manifested by Tony to the farm life around him was a new difficulty for Uncle Benny to smooth away. Heretofore he had had Spangler's lapses and mismanagement to contend with, but here was trouble in a new quarter. Yet his concern for the welfare of these boys was so great, and he was so well satisfied that they could do pretty well at farm life if there was any way of making them contented, that he resolved to do his utmost toward counteracting these unexpected symptoms of restlessness. He was quite pleased that the youngest boy, Bill Spangler, came into the barn just in time to hear Tony's remark about quitting the farm, as he too would have the benefit of his reply.

(To be Continued.)

THE HAT LEAKED.—At a meeting of some colored brethren it was decided to make a collection. The President concluded to pass the hat himself, and, in order to encourage the others, he put in a ten cent piece. After the collection, during which every hand had been in the hat, the President approached the table, turned the hat upside down, and not even his own contribution dropped out. He opened his eyes with astonishment; he exclaimed: "Fo' goodness, but I'ze eben lost the ten cents I started wid!" Then there was consternation on the faces of the assembly. Who was the lucky man? That was the question. It was evidently a hopeless case, and was summed up by one brother, who rose in his place, and said, solemnly, "Dar pears to be a great meral lesson round heah somewhere."



The Family Circle.

"Home, Sweet Home."

Constance Leslie's Bouquet.

CHAPTER IV., AND LAST.

The day of the ball came at last. The finishing touch had been put to the decorations. Christmas evergreens hung in wreaths from the walls, choice exotics were grouped about the room, and the arrangements for the evening were complete. Lady Margaret complimented her young guests on their good taste, and the squire declared it was like going into fairyland, and he should reward them by placing the flowers in the conservatory at their disposal, to use as they liked during the evening, and suggested that each of the young men should make up a bouquet for the girls staying in the house.

Fred Vane was in the highest possible spirits, having that morning received a letter informing him of the death of an old relative who had left him twenty thousand pounds. His former modest ambition of a small house in one of the suburbs of London was considerably magnified thereby. Now he could ask Constance to be his wife; and he was determined this evening to know his fate. Mrs. Hartley, to whom he had confided his hope of winning the young girl's love had given him every encouragement.

Fred, knowing Constance's passion for flowers, had made her a lovely bouquet, but had not sufficient courage to give it to her himself; so, watching his opportunity, he laid it on the table in her sitting-room, accompanied by a slip of paper on which were written the following words—

"If you love me wear these to-night; if you do not I shall know my case is hopeless, and shall leave for London in the morning."

Thinking no one had seen him, he hastily left the room, not noticing a little figure lying on the sofa. It was Evie, who had fallen asleep over a story-book she had been reading; nor did she awake and see him. But some one else had crept on tip-toe to the door, and a face full of jealous anger had watched his every movement. Hastily retreating as he came out, the watcher listened, scarcely breathing, until all was safe, then quickly entered the room, and hurried out again carrying the bouquet and paper with her. At the door she stumbled and made a noise, causing the little sleeper to awaken and wonder what Lady Olivia—for it was she—wanted in Miss Leslie's room.

"She shall never wear his flowers," thought Olivia, as she hurried upstairs; "and he will be gone to-morrow, and need never know what I have done. I hate her," she added, crushing the flowers in her hands; "and I think I hate him too!"

"Miss Leslie," said Evie, as Constance came into the room a short time afterwards, "I have been asleep, but Lady Olivia awoke me as she was going out of the room—what did she want here?"

"I don't know," answered Constance, carelessly. "Your mamma has been asking for you, dear; she is with your grandmamma in the library, so run along."

The guests had all assembled. The *tableaux* passed off most successfully, everyone declaring they did not know which to admire most, Marie-Antoinette or Amy Robart. After the *tableaux* the performers dispersed to doff their theatrical and don their ball costumes.

Radiantly lovely looked Constance Leslie as she stood before her mirror. Though no words of love had passed between them, Fred Vane's every act and look betrayed his feelings; and yet she wondered why he had not given her a bouquet—the other girls had shown her theirs. "He is waiting," she thought, "until I go down; he will then give it to me himself;" and she entered the ball-room feeling wonderfully bright and happy.

Fred, who was impatiently waiting for her, glanced at her as she passed where he was standing, and started forward to speak to her, but, perceiving she had no bouquet, hastily drew back. "Where are my flowers?" he thought. "She won't wear them. Heartless flirt, would that I had never seen her! How glorious she looks! Lady Olivia was right, after all," he muttered.

Meanwhile Constance, wondering why Fred did not come forward to claim her hand for the first waltz, for which they were previously engaged, took a seat offered her by Lady Olivia, who was all smiles, and was holding a most exquisite bouquet.

"Isn't it lovely?" she said, noticing the direction of Constance's eyes. "I had no idea Mr. Vane had such good taste. Are you ill?" she added, maliciously, seeing Constance turn pale.

"No," replied Constance, striving to speak cheerfully, though she could almost hear the throbbing of her heart—"only the room feels rather warm."

"This, then," she thought, "is the reason I have no flowers. How cruel of him to treat me so! I wish I had taken Captain Foster's. How humiliating! I am the only one without a bouquet."

"Look," continued Lady Olivia, hastily, fearing lest any one should see her, "this paper was with it," and Constance, a sickening feeling at her heart, read, on a crumpled slip of paper the words—

"If you love me, wear these to-night."

There was too much wounded pride in her sorrow to let this girl at her side see what she felt, so, quietly recovering herself, she was outwardly calm at least, and Kate Selby, who had unobserved, heard all that passed between the two girls, wondered at her.

Constance's programme was soon filled, and she was presently, to all appearance, the gayest of the gay. Fred, who was watching her with an aching heart, little knew the agony she was suffering.

"Mr. Vane," said Kittie, going up to him later in the even-

ing, "why are you not dancing? How bright and merry everybody looks! And Constance Leslie, doesn't she look beautiful? I wonder how many hearts she will break to-night. Major Campbell seems immensely smitten. I cannot understand why she is the only one without a bouquet—isn't it odd?"

"Very," returned Fred, absently.

"I admire your taste in the choice of flowers. How proud Lady Olivia seems of them!" she observed.

"What!" exclaimed Fred, with unfeigned astonishment; but Kittie was by this time at the other side of the room, and talking to Mrs. Hartley.

"It is really too bad of Mr. Vane," she was saying; "he ought to have given Constance his flowers, and not that horrid Olivia Dalton."

"What do you mean, Kittie dear?" questioned Mrs. Hartley. "He gave no flowers to Olivia. I detained Constance myself whilst he laid the bouquet he had arranged on her sitting-room table. It was very silly of him—I told him so at the time—not to give it to her himself; and Constance, to my certain knowledge, went into the room not ten minutes after. I am very angry with her, for even I was led to believe she really liked him."

"How very strange!" said Kittie. "I am sure there is a mystery somewhere." She then related what had passed between Olivia and Constance at the commencement of the evening.

Meanwhile Constance had made her exit unnoticed from the brilliantly-lighted ball-room into the conservatory, where, hidden by some plants, she could watch the dancers unobserved, her eyes involuntarily looking for Fred, whose tall figure she could not see. She was feeling very tired and glad to escape from the foolish conversation and complimentary speeches of her various partners.

"Miss Leslie," said a voice, causing her heart to throb painfully, "how cleverly you have hidden yourself! I have been looking everywhere for you. We have not had one dance this evening. They are having a valise now."

"I would rather not, thank you Mr. Vane. I have been dancing a good deal, and am rather tired," returned Constance, quietly.

"Well then, let me sit out this dance with you," said Fred. "At least grant me this, my last request. I leave to-morrow," he added, abruptly.

"So soon—why?" asked Constance, not daring to look up lest he should see in her face the misery she was feeling. "I thought you intended to remain here as long as Mr. Cleve did."

"Such was my intention," he replied, coldly; "but since this morning I have changed my mind. The reason why you surely know."

The lovely dark eyes were raised inquiringly to his. "Yes," he continued, passionately; "and, if I had believed Lady Olivia at first, I might have been spared much misery. A heartless flirt you are, Constance. How little did I think it!"

"Your language is as ungentlemanly as it is uncalled for, Mr. Vane," said Constance, indignantly, her face flushed painfully, and she rose to leave the conservatory.

"Stay a moment," he entreated. "Forgive me Constance—I am madly in love and bitterly disappointed. I did not come here for an explanation; I meant to have left to-morrow without even wishing you good-bye, but you have made my visit here until to-day so happy that I couldn't. Tell me why have you no bouquet to-night?"

"It surely could not matter to you, Mr. Vane," said Constance, haughtily, "if I chose rather to have no flowers than to accept Captain Foster's." "But where are my flowers, Constance?" he asked, hastily.

"Then why have you not worn them?" he demanded, angrily.

"Mr. Vane, how could I wear flowers which were never given to me? Lady Olivia and I could not share your bouquet," she added, bitterly.

"I gave Lady Olivia no flowers; you surely received the ones I left for you in your own sitting-room?"

"No," said Constance, her face brightening. "What do you mean?"

"Fool that I was!" cried Fred. "I made a bouquet for you, choosing the flowers I knew you loved best, which I left in your room and by their side a slip of paper asking you if you loved me to wear them to-night. Now, Constance, what could I think but that my case was hopeless? But tell me," he added, entreatingly—"would you have worn them?"

"Yes," answered Constance, raising a flushed happy face to his, and looking so lovely in her confusion, "I would."

"Heaven bless you, my darling!" said Fred, earnestly, imprinting a kiss on her red lips. How could I have doubted you for a moment? But what can have become of the flowers? And whatever made you think I had given any to Lady Olivia? Such an idea never entered my head."

"I am bound to believe you if you say so," replied Constance, smiling as she rested her dark truthful eyes to his; "but when Lady Olivia called upon me to admire her bouquet, dwelling on your good taste, and not only that, but also showing me a slip of paper on which were the very words you have quoted to me, what else could I believe but that you had chosen her as the recipient of your flowers?"

"Can she have gone into your room, seen and taken them?" questioned Fred. "Surely she would never do so mean an action."

Constance started, remembering for the first time that Evie said Lady Olivia awoke her going out of the room.

"Unhappy girl, I fear she did; but I can afford to forgive her, I feel so happy now. But oh, this has been a wretched evening!"

"I can't so readily forgive her, my darling, when I think how nearly she has separated us;" and he drew her closer to his side, shuddering as he thought how he might have gone away and never seen her more. "That must have been what Miss Selby referred to, when she said something about admiring my flowers and Lady Olivia being so proud of them. If I had had any sense, I might have guessed at foul play, but I was half mad with jealous anger. And, do you know, Constance, Mrs. Hartley thinks you have treated me very badly—shall we go and undeceive her?"

"Yes," replied Constance, "we must to clear ourselves. I wondered what made Mrs. Hartley so cool to me. Otherwise, no one need have known what Lady Olivia has done. But promise me," she added, "that no one else shall know."

"She doesn't deserve such kindness from you," returned Fred; "but as you wish, so let it be."

He stopped and kissed her, whispering as he did so, "Mine for ever."

This great, strong fellow, who boasted of never having been

in love, loved at last, and with all the intense passion only such great natures are capable of.

"I had serious thoughts of sending the bellman round to look for you two," said Kittie, as Fred and Constance emerged from the conservatory. "Do you know you have been absent nearly an hour?"

"Nonsense," returned Fred. "It's a libel—isn't it, Mrs. Hartley?" he asked, as that lady came up to where they were standing.

"I think Kittie's nearly right," answered Mrs. Hartley, laughing. "But you both look very happy. Have you fathomed the mystery of the flowers? We have."

"Yes," replied Constance. "So that is the reason you were so cool to me, Mrs. Hartley—you thought I was behaving very badly to Mr. Vane. I will leave him to explain all to you whilst I go and speak to Lady Margaret; Kittie tells me she has been asking for me."

"Noble girl," said Fred, following her with loving eyes. He then told Mrs. Hartley and Kittie of her wish to keep Lady Olivia's secret.

Mrs. Hartley readily promised, Kittie declared she would like to stand on a chair and proclaim her behaviour to the world, but supposed it was punishment enough for her to see how happy they both looked.

Lady Olivia's face grew livid as she saw Constance and Fred dancing together, and looking radiantly happy. It needed but one glance to prove that an explanation had taken place. Thoroughly mortified, she departed next morning, merely leaving a note for Lady Margaret, saying she had received a telegram from home requesting her presence immediately; and, though many wondered at her abrupt departure, and Lord Alfred confided to Nora that he believed Olivia had gone off in a "huff," for he had heard nothing about the telegram, Constance nobly kept her secret, and none but herself, Mrs. Hartley, Kittie, and Fred knew the real reason.

A double wedding took place in the spring, and from the old Manor House. The Squire declared none but himself should give Constance away, and Lady Margaret insisted upon her remaining her guest until the happy event came off. Fred bought a pretty place near Richmond, which good natured Mrs. Hartley helped him to get in order for his bride.

The other bride was sweet Marion Erl—the bridegroom was Harry Cleve; Bee Grantly, Maud and Kate Selby, Nora Magrath, one of Marion's sisters, and little Evie officiated as bridesmaids on the happy occasion.

Kittie supposed she and Maud would be the next to follow suit, for, as she told Constance, with a loving light in her dark-brown eyes, Guy Lynn bothered her so that she had to say "Yes," and she really believed the poor fellow was fond of her.

L. U. X.

Auld Lang Syne.

DONE UP IN TARTAN.

Dedicated to the Marquis of Lorne, who at the Southern Counties' Fair, 1880, addressing a deputation of "Campbells," wished for the spread of the Gaelic tongue.

Should Gaelic speech be e'er forgot
And never brocht to min',
For she'll be spoke in Paradise
In the days o' auld lang syne.

When Eve, all fresh in Beauty's charms
First met fond Adam's view,
The first word that he'll spoke to her
Was "cumar ashun dhu."

And Adam, in his garden fair,
Whene'er the day did close,
The dish that he'll to supper teuk
Was always Athol brose.

When Adam from his leafy bower
Cam' oot at break o' day,
He'll always for his morning teuk
A quai'ch o' usquebae.

And when wi' Eve he'll had a crack,
He'll teuk his sneeshin' horn,
An' on the tap ye'll weel micht mark
A pony praw Cairngorm.

The sneeshin' mull is fine, my frien',
The sneeshin' mull is grand;
We'll teuk't a hearty sneesh, my frien',
An' pass't frae hand to hand.

When man first fand the want o' claes,
The win' an' cauld to fleg,
He twisted round about his waist
The tartan philabeg.

An' music first on earth was heard
In Gaelic accents deep,
When Jubal in his oxter squeezed
The blether o' a sheep.

The braw bagpipes is grand, my frien',
The braw bagpipes is fine;
We'll teuk't another pibroch yet,
For the days o' auld lang syne.

A governess threatens to keep an unruly boy fifteen minutes after school. "I wish you would make it half an hour," said the appreciative youth, "for your the prettiest teacher in this town."

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES.—I have just read the large budget of letters from all my nephews and nieces for April, which gives me much pleasure and amusement. It is an excellent thing for boys and girls to begin to write letters while they are quite young. The mere writing of the words and sentences is easily learned, but there are several other things about letter writing than this, and are quite as important to be learned early in life. There are three or four letters from young folks now before us, and, in many respects, are like the letters of older people. Perhaps some hints may be gathered from these letters that will be of use to those who are just practising writing. The first letter we take up has no post office. Next, here is a boy who asks about a dozen questions about the prices of things; to answer this we should be obliged to employ a person for perhaps a whole day, to go around and find out about the things, and then it would probably be of no other use than to gratify a boy's curiosity. And here are two without a name; are we to infer they do not possess one? Never write anything you are ashamed to sign. It is the rudest thing anyone can do to send another a letter without a name. Anonymous letters are so much used by cowardly people as a means of saying that to a person which they would not dare say to his face. Begin your letter writing with the determination never to write anything that you will regret to see again, and sign your name openly. I wish to point out a few things to be avoided. 1st—Do not write unless you have something to tell, some answers or puzzles to send, or something to ask. 2nd—We like to have you tell us of what you see that is curious, strange or interesting. 3rd—We like to have you ask questions that cannot be readily answered in your own family or by your neighbors; we are always glad to instruct, but have no time for finding out prices and such things. 4th—Say what you have to say as plainly as possible, and when you have done so—stop! Do not say "I must stop now, for it is getting late," or make any other excuse, but stop simply because you have got through. 5th, and most important, sign your name. I was not pleased with the sample of rebuses sent in; however, W. H. Gould, of Oshawa, will get the prize for this month, but you must all draw them well.

UNCLE TOM.

PUZZLES.

No. 1.—ANAGRAM.

Seliv fo tgrae enm lal drenim su ew anc kame rou ilsv blusime dan rtniaped eaevl dbenhi su otorpitnfs no eth dsnsa fo mite.

EMILY J. WILSON.

No. 2.—DECAPITATION.

Whole I am a particle of fire. Behead me and I am a piece of ground with trees, etc. Behead again and I am a vessel.

HERBERT W. MACKENZIE.

No. 3.—WORD HALF SQUARE.

- 1—An article indispensable with blacksmiths.
 - 2—Tidy.
 - 3—A large vessel.
 - 4—A pronoun.
 - 5—A consonant.
- ELIZABETH E. RYAN.

No. 4.—RIDDLE.

Curious reader how can this be,
Once ten will be just three;
And the solution to that again,
Twice three will equal ten.

E. G. RYAN.

No. 5.—CHARADE.

My first is a tree that is always green, and makes good timber for the cutter; my second relatives doth mean; my whole is often full of butter.

SARAH HENDERSON.

No. 6.—ENIGMA.

I am composed of 11 letters.
My 3, 1, 2, 5, is a girls toy.
My 1, 6, 8, is the name of a tree.
My 9, 6, 7, 8, is a boy's name.
My 4, 10, 3, 11, is to prestage.
My whole is the name of a negro melody.

SARAH HENDERSON.

No. 7.—CHARADE.

My first is a dish that's the Scotchman's delight;
He likes it in the morning, at noon, or at night;
My second is part of a house, great or small;
My whole is a plant that is well known to all.

No. 8.—CONCEALED TREES.

- 1—Johnnie, you are splashing that water around terribly.
 - 2—It is rather overwhelming I must confess.
 - 3—I thought that I was doing it up in elegant style.
 - 4—If I grow too demonstrative you must chide me.
 - 5—There is the most popular church in the country.
 - 6—The pastor is now ill in Denmark.
 - 7—You will find Sam a pleasant companion.
- CHAS. FRENCH.



No. 9.—ILLUSTRATED REBUS (Won by Elizabeth E. Ryan, Mount Forest, Ont.)

No. 10.—A WORD.

Three-fourths of a cross and a circle complete.
Two semi-circles perpendicular meet;
An isosceles triangle standing on two feet,
Two semi-circles and a circle complete.

CALVIN W. FINCH.

No. 11.—ENIGMA.

When friends do meet in house or street,
My first they like to do;
My second is meat that people eat,
With the exception of a few;
All will admit was wise,
His task is done, his glory won,
Neath England's sod he lies.

JAS. A. KEY.

Answers to April Puzzles.

- 1—Germany.
- 2 Those who cannot keep their own secret, cannot be entrusted with the secrets of others.
- 3—Sacramento.
- 4—Grace, Mable, Hattie, Edith, Bridget.
- 5—A T L A S
T R A C E
L A T I N,
A C I D S
S E N S E
- 6—Harold, Egbert.
- 7—Skill, kill, ill, I.
- 8—Berlin on the Spree, capital of Prussia.

NOTE.—There was a mistake in the diamond puzzle for April, consequently not one answered it correctly.

Names of Those who have Sent Correct Answers to April Puzzles.

Aggie Wilson, Sarah Henderson, Charles Stevens, Annie Bowman, Charles S. Husband, Frank Miles, Fred Porte, James F. Peck, H. B.

Herington, Hattie Wilber, Calvin W. Finch, A. Phillips, Herbert W. Mackenzie, Albert T. Laing, Abigail A. Moorhouse, George Snyder, William M. Mackey, C. Gertie Heck, Robert W. W. Purdy, Charles French, A. J. Taylor, William Hull, Maggie H. McKerron, W. H. Bateman, John Stewart, John Clark, Amy A. Lancaster, A. E. Armand, Euphemia Smith, Esther Louise Ryan, Nellie McQueen, Fred Mills, Minnie G. Gibson, R. H. Trussell, R. Wilson, Janet Stewart, C. G. Keyes, Addie W. Morse, Jas. A. Key, Isaac Martin, Herbert Martin.

Humorous.

"Father, did you ever have another wife besides mother?" "No, my boy; what possesses you to ask such a question?" "Because I saw in the old family Bible where you married Anno Domini in 1835, and that isn't mother, for her name was Sally Smith."—[Glasgow Evening Times.

Into how many awkward predicaments have the frank and unfortunate speeches of the small boy placed his elders. The trouble with the youngster is that he has not had time to learn that the truth must not be always spoken. For instance, the old bachelor uncle is on a visit to the house. He says to the young scion: "Well, Charlie, what do you want now?" Charlie—"Oh, I want to be rich." Uncle—"Rich! Why so?" Charlie—"Because I want to be petted, and ma says you are an old idiot but must be petted because you are rich—but it's a great secret, and I musn't tell." Here is a scene at a Brooklyn wedding breakfast: Company all seated about the table. A pause in the general conversation. Happy husband to his wife's seven-year-old sister at the other end of the room—

"Well, Julie, you have a new brother now." Julie—"Yes, but mother said to pa the other day she was afraid that you would never amount to much, but that it seemed to be Sarah's last chance." There was an intense silence, followed by a rapid play of knives and forks.

A boy asked his father who lived next door to him, and when he heard the name, enquired if he was a fool. "No, my little one, he is not a fool, but a sensible man; but why do you ask the question?" "Because," replied the boy, "mother said the other day that you were next door to a fool."

A rustic youngster asked out to tea with a friend was admonished to praise the eatables. Presently the butter was passed to him when he remarked: "Very nice butter—what there is of it," and, observing a smile, he added, "and plenty of it—such as it is."

"Is your father at home?" enquired the man of the little girl who admitted him. "Is your name Bill?" she asked. "Some people call me so," he replied. "Then he is not at home, for I heard him tell John if any bill came, to say he was not at home."

Why he Objected.

A crude old farmer, living on the line of one of the recent railway surveys, and who is owner of a barn of large dimensions, with huge swinging doors on both sides, observed a posse of surveyors driving a row of spikes through his premises that extend to the very centre of his big barn. Sauntering leisurely toward the trespassers with an air savoring somewhat of indignation, he addressed the leader of the gang as follows:

"Layin' eout another railway?"
"Surveying for one," was the reply.
"Goin' threw my barn?"
"Don't see how we can avoid it."
"Wall, now, mister," said the worthy farmer, "I calkelate I've got sumthin' tew say 'bout that. I want you to understan' that I've got sumthin' else tew dew besides runnin' out tew open and shet them doors every time a train wants to go threw."
—Am. Paper.

Minnie May's Department.

MY DEAR NIECES.—Many young ladies spend a great deal of time and labor over the business of making their complexions beautiful. I know a domestic who, to make her sunburnt hands presentable at a party she proposed attending, covered them the night before with a bread and milk poultice. It was a new fashioned cosmetic, and I unfortunately forget the result, so I cannot certainly recommend it to anyone else who would wish to make the experiment. But the best cosmetic, girls, is early rising and frequently bathing in salt and water. A simple sponge bath is quite sufficient, and requires only a wash-bowl. Too excessive indulgence in eating spoils the most beautiful face. The skin soon becomes coarse and impure. There is scarcely anything more readily influenced by habit than the amount we eat, the stomach so soon adapts itself to what is given it, and the appetite calls for no more. Almost universally we eat more than is good for us; we eat more even than the appetite calls for, just because it pleases the taste. All such indulgence does us a mischief. It makes the blood impure, and so clogs all the wheels of life, and very soon leaves its marks on the complexion. A golden meal taken in moderation is the most beneficial to the system, and therefore the greatest beautifier. But do not forget to accompany it with abundant exercise, early rising, a bath two or three times a week, and an hour or two of good reading every day. There is nothing gives such beauty to the eye as the presence within of sound, noble, invigorating thought. It is very silly and shallow to pride one's self on fading beauty; "a comely face is something to be thankful for." MINNIE MAY.

Answers to Inquirers.

Herbert W. McK. and Charlie S. Husband: Your names were omitted by mistake in April No.

C. W. F. asks: When we send in an answer to a puzzle and it is not the same answer as is intended by the originator, if our answer is correct, do we get credit for it just the same? Yes.

SUBSCRIBER.—1. What color is most suitable for a wedding dress? 2. Should the bride dress in her wedding dress when callers arrive, not having servants? 3. Is it proper to insist upon callers stopping for tea, or have something to drink? Please give me some insight how to treat people when I get in my new house, when they call, and the proper way to receive them? **ANS.** 1. Brides usually prefer light colors when they do not wear white, but for quiet weddings and plain people a neat dark grey or brown walking suit would do nicely. 2. Not at all; if it be necessary that she should do her own work any neat house dress will do. People never remain to tea when making wedding calls, and for all callers to do so when the bride must do her own work would be very unreasonable. Nor is it necessary or fashionable to give any refreshments whatever. Offering wine to callers has quite gone out of date. You may give a piece of wedding cake to those who have not had any before, if you wish. Treat everyone just as you always did, kindly and pleasantly, but unless in the case of your dearest friends, do not give yourself needless work and worry by asking people to stay to tea. Young married people should be left to enjoy their new-found happiness in their quiet little homes, and not to be pestered to death by troublesome visitors.

SUBSCRIBER.—Please inform me through your "enquirers" column how to remove permanently from the face superfluous hair without injury to the skin.

[We never heard of anything that would not be injurious to the skin; perhaps some of our readers may tell us of something.]

THE TIME FOR WORK.—Student writes: "Which is best, to sit up late at night and study when everything is still, or to rise early in the morning. I can study best at night, but the next day I am apt to feel tired and weak." Undoubtedly the best time for the brain workers is the early morning, and when one has formed the habit of going to bed early and rising early, he will find that he can do better work and with less exhaustion than when he works at night. "Night work," says The Lancet, "during student life and after years is the fruitful cause of much unexplained, though by no means inexplicable, suffering, for which it is difficult, if not impossible, to find a remedy. Surely morning is the time for work, when the whole body is rested, the brain relieved from its tension, and mind power at its best."



Flower Stand.

There are various devices of flower stands for house decoration. The accompanying illustration represents one invented by a Canadian, Mr. W. D. McCollum, of Truro, Nova Scotia. The plan appears to have some advantages.

RECIPES.

NEW TOWELS.—When new towels are to be washed, first overcast the fringed edge, shake the fringe out well before they are hung up to dry, or the fringe may be whipped out over the back of a chair. This is better than combing and does not wear out the fringe.

TO MAKE BOOTS WATER-PROOF.—1 lb. tallow, ½ lb. resin, melt together; warm both and apply with a painter's brush until thoroughly saturated, both sole and upper. If desired to make a polish, dissolve an ounce of bees wax in a teaspoonful of lamp black. A day after the boots have been heated with tallow and resin rub over them this wax in turpentine, but not before the fire. Thus the exterior will have a coat of wax alone, and shine like a mirror.

BOILED FROSTING.—If a little cream of tartar is mixed with the sugar the frosting will harden at once. Make the frosting as follows: Boil two and a half cups of sugar with two-thirds of a cup of water until it will hang in strings from the spoon, add the whites of three eggs beaten to a froth, stir it until it is quite smooth and add the juice of one lemon. This will make enough to put between the layers of a good sized cake and frost the tops and sides. One cup of sugar and one egg is enough for the top and sides of a good sized cake.

HOUSEKEEPER.—Please tell me how to make essence of lemon, and how to candy lemon and orange peel? **ANS.**—For essence of lemon put the fresh peel into enough alcohol to cover it, and leave it for 10 days; then strain the liquid and bottle it. To candy the peel, stew it in water until it is soft; then boil it in sugar until the sugar will candy; take out the peels and sprinkle them with pulverized sugar, and keep them in a warm place until dry.

SPONGE PUDDING.—Six ounces of flour, half a teaspoonful of baking powder, a little salt and four ounces of suet to be well rubbed into the flour.

Mix up the pudding with three ounces of golden syrup and three ounces of soft sugar, two tablespoonfuls of milk and one egg well beaten. Put it all in a buttered dish, tie it over with a cloth and boil for three hours, not less. Serve with cream or plain melted butter.

A CUP OF TEA.—Take a clean kettle never used for anything else, fill it with fresh water, the harder the better, boil quickly over a very hot fire, and pour as soon as it boils upon the tea leaves fresh from the canister. When more liquid or a stronger infusion is desired, put the additional tea in a cup and pour fresh boiling water on it; after it has stood a few minutes it may then be put in the pot to good advantage. Tea water will not dissolve the tannin from the dry leaves of fresh tea; only pure fresh water will do that. The addition of tea to the nearly empty teapot will increase the color, but it will not make the tea stronger in its exhilarating quality.

SOFT SOAP is made of potash instead of soda, and if the calcined potash is used, six pounds of it, with the lime as before, should be used for six pounds of grease, and four gallons of water. The soap remains mixed with the water and does not separate. Sometimes soap is too soft and will not harden; this may be remedied by melting on a shovel one pound of glauber salts, which is sulphate of soda, and adding this to 20 pounds of soap. Farmers' wives who want to get strong ashes should get all the potato stalks gathered and brought where they can be burned and the ashes saved. In every pound of these ashes there is a little more than half a pound of pure potash.

Eating Lemons.

A good deal has been said through the papers lately about the healthfulness of lemons. The latest advice how to use them so they will do the most good runs as follows:—"Most people know the benefit of lemonade before breakfast, but few know how it is more than doubled by taking another at night, also. The way to get the better of a bilious system without blue pills or quinine, is to take the juice of one, two or three lemons as the appetite craves, in as much ice-water as makes it pleasant to drink, without sugar, before going to bed. In the morning on rising, or at least half an hour before breakfast, take the juice of one lemon in a goblet of water. This will cure the system of humors and bile, with mild efficacy, without any of the weakening effects of calomel or congress water. People should not irritate the stomach by eating lemons clear; the powerful acid of the juice, which is almost corrosive, infallibly produces inflammation after a while, but properly diluted, so that it does not burn or draw the throat, it does its full medical work without harm, and when the stomach is clear of food has abundant opportunity to work on the system.

At what time of life may a man be said to belong to the vegetable kingdom? When long experience has made him sage.

Plowing.

In our advertising columns may be seen a cut of a turned furrow. No doubt the advertiser believes he has a point of excellence in his wares not common to all plows. We have seen work done by some plows that would not leave the land in half as good order as that done by other plows. Jas. G. Cockshutt has long held a high reputation for his plows, cultivators and horse hoes, and now considers his "Peerless" plow unsurpassed, and we would recommend our readers to examine and thoroughly test the plows of his manufacture, as we think he takes the right principles to work on to make a genuine success of the plows he makes. They are all square cut plows, and are rapidly coming to the front as first-class styles. The names of the "Peerless," "Champion," "Junior" and "Union" are now household words among thousands of homes in this Dominion.

The great object of plowing is to invert and pulverize the soil in order to fit it for the crop; and the plow that will do this with the greatest speed, lightest draft, is easiest to operate, and that leaves the furrows in the best shape for the drill, so that it will require the least harrowing, has accomplished its task with most profit to the farmer. And with square cut plows of the above styles all the under soil is inverted and the furrows left in a full round shape, and you get more loose soil to the surface to cover weeds and manure or the jointer furrow and more mould for the new crop. The above idea is also illustrated with the Peerless cut, showing square cut broken furrows which we believe to be the best style of plowing for the present day.

Now is the time to commence grafting all kinds of fruit trees—apples, plums and pears, also grapes. From the 1st May till the trees leaf out, this operation can be performed successfully. The great secret, or art, in grafting consists in placing the bark evenly together of both cion, and stack one side at least, covering the conjunction with wax, clay or cloth; anything that will keep the air from the graft for a short time will answer. May is the month for grafting out-doors, and should be made the most of. For tying grafts firmly in position, use fine copper wire. After the graft has grown it can be unwrapped and saved to answer same purpose.—Hortus.

Stock Notes.

Cards in the Breeders' Directory are now \$1.50 per line in advance, or \$2.00 per line per annum if not paid within three months from order. Breeders will please note this increase. The demand upon our advertising space and upon our reading columns by these cards necessitates the increased rate.

Simon Beattie writes from Compton, P. Q.: I am now on my way home, sail on the 15th instant. I finished up most of my importations, had fair, good, satisfactory sales in all, and am going to ship again in spring and summer. During last summer I shipped in all over 900 head of horses, cattle, sheep, and pigs, on order and on my own account, and mostly satisfactory; I had fair good sales for horses and sheep in particular, being a good lot I had on hand for sale; and there being a growing demand for good stock both in Canada and the States. I got a good few orders to fill for the coming summer. I think I can with confidence recommend the farmers in general in Canada to put down more permanent pastures and pay more attention to raising of horses, cattle and sheep than they have lately.

At the sale of Shorthorns by the Canada West Farm Stock Association, of Brantford, Ont., on the 20th ult, at Wakegan, Ill., U. S. A.

18 cows and heifers average.....	\$318.61.	\$5,735
15 bulls and bull-calves	297.33.	4,460

33 head average \$308.94. Total, \$10,195

It is stated that 10th and 11th Duchess of Hillhurst, sold at Cochrane's sale, on the 18th, were purchased really by the Canada West Farm Stock Association, and will form part of their famous herd at Bow Park.

M. Y. Attrill, of Ridgewood Park herd, Goderich, Ont., has sold the Princess bull, 5th Earl of Aurim to Mr. John Hicks, of Hicks House, Mitchell, Ont.

T. & A. B. Snider, German Mills, Ont., have sold to Jonas Bingeman, Waterloo, Ont., yearling filly; to Engrim Smith, Michigan, one yearling, one two-year-old mare colt; to Henry Counter, Staffordton, Ont., two-year-old stallion; to John S. Pearce, Wallacestown, Ont., imported stallion Caesar.

Professor Lawson has sold the Shorthorn Durham bull Gwynne Lucyfield to the Argyle Agricultural Society Co., Guysborough, for \$140, also the Shorthorn Durham bull Lord Lucyfield to the Whyoccomah Agricultural Society for \$175. There are several offers for second St. Nicholas, of Lucyfield (yearling) whose price is placed at \$200, but he will not be sold till June.

The quarantine at Point Edward, near Sarnia, Ont., is now open for cattle from the U. S. A.

The exportation of pure-bred Shorthorns from Great Britain during the last three months of the year 1881 was as follows: Six to South America; thirty-three to Canada; eight to Chili; one to France; five to Jamaica; and three to Mexico.

Mr. Thornton's Shorthorn circular just issued contains the statistics of forty-seven sales last year—2168 head averaging £32 3s. 7d. apiece. In 1880, 1,820 animals averaging £34 13s. 6d.; in 1879, 2,354 averaged £47 19s. 4d.; and in 1877, 2,811 averaged no less than £67 5s. 9d. Mr. Thornton also states the average made at decennial period. Thus in 1841, 424 sold for £37 14s. 11d. each; in 1851, 1,193 made £19 9s. 9d. apiece; in 1861, 533 made £30 17s. 2d.; in 1871, 2,064 made £55 10s. 2d.; and in 1881, 2,168 made £32 3s. 7d. each. The declension of that year is thus very marked.

Mr. Joseph Keyser, of Adelaide, Ont., has purchased the Norman Percheron stallion, "Aoclede," from the well known breeding farm of M. W. Dunham, Wayne, Ill., U. S. A.

RED POLLED CATTLE.—The *Norwich Mercury*, Eng., reported last week a consignment of Red Polled cattle for New York, including twenty-five head of young stock purchased by Mr. Lofft and Mr. Fulcher. There are five heifers from the Duchess of Hamilton's herd at Easton Park, four heifers from Lord Henniker's herd at Thornham Park. Mr. Lofft sends an in-calf heifer of the Necton "Minnie" tribe, and a young bull. Other Necton tribes, with a mixture of Troston blood, are sent by Mr. Harvey Mason. Mr. Fulcher sent a 3-year-old cow, also of the "Tit" tribe; also a descendant of the famous old *Elmham Primrose*, the cow which bore calves to her twenty-fifth year, and met with her death by accident in her twenty-seventh year. Mr. Howling's small dairy of cows at Elmham sends two. Mr. Stimpson, of Morton, sends three in-calf heifers. Mr. Gooderham, of Monowden, Suffolk, sends twin heifers (the progeny of a cow which is now in Mr. Tyssen-Amherst's herd at Diddlingham) and a bull. Every animal is already registered, or is eligible after registry, in Euren's *Herd Book*.

Secretary Denison, of the British American Shorthorn Association, writes: "Our Herd Book is proving a great success; we have now some 1,600 pedigrees on hand."

The revising committee of the British American Shorthorn Association have passed over eleven hundred pedigrees for the new Herd Book. It is intended to publish Vol. I. in July, and breeders have been requested to send in by 10th of May all pedigrees they wish to appear in the first Vol. A very full meeting of the executive committee was held on the 20th ult, and the work is meeting with a cordial and liberal support.

The FARMER'S ADVOCATE Prize of \$100.00, given annually by MR. W. WELD, of London, Ont., will be awarded for 1882 to the "best herd of five cows for general purposes and profit." The prize will be offered at the Provincial Exhibition, to be held at Kingston, Ont., commencing the 18th Sept., 1882, and continuing one week. Rules and conditions in future issue.

WHY NOT ADVERTISE? R. A. Brown, the well known poultry breeder of Cherry Grove, Ont., writes "that he had 104 inquirers a week after his advertisement appeared in the F. A., and still they come."

The Channel Can Creamery.—The attention of our dairymen is called to an advertisement of the above can which is now manufactured in Canada, and which will soon be as well known and appreciated as it is in the Eastern States.

Commercial.

THE FARMER'S ADVOCATE OFFICE,
London, Ont., May 1, 1882.

The past month has been one of unusual cold, dry, piercing winds, together with a good deal of stormy weather.

WHEAT.

The prospects of the coming crop are somewhat varied, and in many sections not very promising. The very severe weather about the 10th of last month was pretty hard on the plants, and in some sections of Ohio, Indiana and Kentucky (where it had formed joints) it is said to be badly injured. The outlook for the next few months is decidedly "bullish," even with the most favorable reports. The Australian crop is far short of what was expected, caused by the very dry weather they had through September, October and November. The supplies of English home-grown seems to be pretty well exhausted, while the supply of Pacific coast wheat is liberal; still this cannot be used to advantage without mixing more or less of our red and amber wheats to give the flour the required strength. The crop in India is said to be very fine, and very much larger than last year. Steamers are now diverted to the Indian waters to bring it forward. Stocks in Chicago are about one-half what they were this time last year, and the same is the case in all the leading grain centres in the United States. If there is no great quantity back in farmers' lands, indications point to a steady, firm demand for the home trade till new wheat comes forward. The situation in Canada is much the same, if not more pointed.

PEAS

Are pretty well cleaned out, with the exception of a few cars of seed peas. The demand for seed has been unusually heavy, and the coming crop, if only a moderate one, will be very much heavier than that of last year.

OATS

Are in good demand, both for the States and for shipment to Winnipeg. There have been contracts made for the shipment of some 50,000 to 60,000 bushels to the Northwest. Where land is well adapted to growing oats, we think it would be well for farmers to grow more than they do.

CLOVER SEED

Has been well cleaned out, and there is a good deal of difficulty in finding enough to supply the local trade.

CHEESE.

Factories in some localities are now in operation, and the next ten days will put a large percentage of them in full blast. Stocks of poor and medium cheese are said to be heavy in England, and not unlikely to effect the market, more or less. To what extent they will do so remains to be seen.

During the past two years there has been no more prosperous branch of farming than that of the dairy. With cheese ranging from 8 to 13 cents, it does not require very close management to make a handsome profit out of milk. Dairymen will do well to remember that these years of prosperity will not always last, and we may have a repetition of 1879 any year. There is likely to be a large expansion of the business in the States the coming season, and, should the season be a favorable one for a large yield, we may look for a very considerable increase in the make of cheese over last year. If this should be the case it will be well for dairymen to keep everything in and about their dairies and factories in the best possible shape, and see well to it that there is nothing but the finest goods made.

BUTTER

Is fast tumbling down and we may look for moderate prices before long. Those who make poor butter and expect to get the price of good for it, will be more disappointed than ever this season. Buyers of butter are getting more and more particular every year, and the time is not far distant when poor butter (as it should be) will be unsaleable.

CANADIAN CATTLE FOR BERMUDA.

Under the above heading, nearly three months ago we reported a trial shipment of Canadian cattle from this city for Bermuda, via New York. At that time several of our dealers laughed at the idea of the possibility of a cattle trade springing up between this country and the Island of Bermuda. Another shipment, however, is about being made by Messrs. Magor Bros. & Co., of this city, who were likewise the shippers of the lot above referred to. The present shipment will consist of about 90

head, the sale of which we quoted on Monday at about 5 1/2c per lb. live weight, being a lot of fair, useful cattle. They will be shipped from here to New York, whence they will take steamer for Bermuda.

NEW WHEAT.—A despatch from Cincinnati says that a sample of spring wheat grown on ordinary land, near Americus, Ga., has been exhibited. It was sown on November 26, 1881, harvested April 7, 1882, and threshed April 21. It averaged twenty bushels to the acre, and is of good quality.

CATTLE.

Cable advices report the market steady in Liverpool, and the demand fairly active. The receipts of Canadian and American cattle has been more liberal, but as there are not many home fed cattle being marketed the general supply is light. Prices remain as follows:

Table with 2 columns: Cattle types (Finest Steers, Good to choice, Common to medium, Inferior and bulls) and Cents per lb. (17, 16 1/2, 15, 12@14)

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

FARMERS' MARKETS.

LONDON, ONT., 1st May, 1882.

Table listing various agricultural products like Wheat, Flax Meal, Barley, Timothy seed, Butter, etc. with prices per 100 lbs.

Table listing various agricultural products like Potatoes, Honey, Cheese, Cordwood, Geese, Chickens, Beef, Hogs, Turnips, Tallow, Maple Syrup, Wool, Apples, Onions, Straw, Turkeys, Ducks, Lamb, Mutton, Veal, Carrots, Clover seed, Beans, etc.

GRAIN AND PROVISIONS

Table listing various grain and provision items like Wheat, Cornmeal, Butter, East'n Tp's, Brockville, M'rorisburg, Western, Creamery, Eggs, Lard, Hams, Bacon, Cheese, etc.

TORONTO, ONT., 1st May

Table listing various agricultural products like Potatoes, Apples, Butter, Hogs, Beans, Peas, Hay, Rye, etc.

LIVERPOOL, ENG., 1 May.

Table listing various agricultural products like Flour, Spring wheat, Red Winter, White, Club, Corn, Oats, Barley, Peas, etc.

WHOLESALE PRODUCE MARKETS.

NEW YORK, 1st May.

Table listing various produce items like Flour, Corn, Oats, Wheat, etc. with prices.

BOSTON, MASS., 1st May.

Table listing various produce items like Flour, Choice winter, Corn meal, Oatmeal, Oats, Wool, etc. with prices.

DAIRY MARKETS.

Liverpool, Eng., 1st May.

Per cable, 62s.

The firm of John Elliott & Son sent to the North-west on the 28th ult. eight full car-loads of their agricultural implements. We are informed they have already orders to fill this season for Manitoba amounting to \$150,000.

Messrs. John Stewart & Co., of London, Ont., have just shipped 105 of their fanning mills and two fancy peddler's rigs to Portage la Prairie, Man.

NEW ADVERTISEMENTS.

HARRIS' DOMINION CURD CUTTER

Is now offered to the factorymen of Canada with the confidence that it is just what they want to prepare the curd for setting. The cheese that took the first prize and gold medal at Toronto, 1879; at New York International Fair, Dec. 1879; Sweepstakes of the World at Hamilton Provincial, 1880; Toronto and London Provincial, 1881; and all the gold medals that have been taken the last three years, was made with it.

Sold by C. F. Smith, Belleville; E. McDougall, Brockville; W. R. Marshall, Stratford; G. S. Clmie, Listowell; R. G. Wright, Napanee, Ont.

J. B. HARRIS, Proprietor, 197-tf BROCKVILLE, ONT.

Bidwell STRAWBERRY

the finest in the country. E. P. ROE has the largest and finest stock in the country, which he offers at very low rates. Catalogue free. Address: E. P. ROE, CORNWALL-ON-HUDSON, N.Y.

PLANTS.

I have this season the finest stock ever grown at SUNNY-SIDE NURSERY, including the New and Standard Sorts. Catalogue Sent Free. C. S. PRATT, Agent, NORTH READING, MASS.

RUSSIAN MULBERRY PLANTS.

A small stock of the above desirable plants from 6 to 12 inches, for sale Single plants, 40c. each per mail; three plants, \$1 per mail, postage paid. Address: ALEX. PONTEY, St. James' Park Nurseries, near LONDON, Ont., Canada.

RETIRING from BUSINESS

We are prepared to transfer the MARKHAM NURSERY (Stock say 50,000 apple) and premises, if desired, on favorable terms. 191-d L. CROSBY, Markham.

Windsor Hotel

PRINCESS STREET, KINGSTON, ONTARIO. Centrally Located. First-class Billiard Parlor. Modern Improvements. Good Sample Rooms. TERMS MODERATE. MARTIN O'BRIEN, Proprietor 197-e

ZIMMERMAN Fruit and Vegetable Dryer!

MANUFACTURED BY RICHARDS BROS., 494 & 496 Yonge St., Toronto, Ont. Highest Awards at the Provincial Exhibitions at Hamilton, 1880, and London, 1881.

Dries all kinds of Fruit and Vegetables better than any other apparatus, and ADDS 50 PER CENT. TO MARKET VALUE. It is the Standard Fruit Dryer of Canada, and the only one made of galvanized iron. AGENTS WANTED. Liberal discounts to the trade. 196-tf

COOK'S FRIEND

Twenty-five Years' experience of a CONSTANTLY INCREASING DEMAND for the

Cook's Friend Baking Powder

shows that the WANTS of the CONSUMER have been WELL STUDIED. THE COOK'S FRIEND is PURE, HEALTHY and RELIABLE. It will always be found equal to any duty claimed for it. Retailed everywhere. ASK FOR McLAREN'S COOK'S FRIEND

AMBER CANE SEED.

I will send to any one free, on receipt of one dollar, sufficient seed to plant two acres of choice Amber Cane; best paying crop in Canada. Send for circular and price list. 190-c WM. NEWTON, Oshawa, Ont.

BEAUPRE'S HOTEL

Market Square, KINGSTON, CANADA. R. BEAUPRE, PROPRIETOR. Largest Yard and Best Stables in the City. Murray's Sale and Boarding Stables attached to this House. Table supplied with the best the market affords. Headquarter for Brewer's Mills, Seeley's Bay, Morton, Delta, Newboro', and Bath and Gananoque Stages, and Cape Vincent Stage during winter season. Horse Dealers will find it o their advantage to stop at this House. 197-e

Advertisement for TREES AND PLANTS featuring Gold Medal Nurseries, Specialties, and contact information for George Leslie & Son.

ORDER EARLY AND SATISFACTION GUARANTEED.

SPECIALTIES — Lee's Black Currants; Burnet Grape; Moore's Arctic, Goderich and other new Plums; Berberry, for hedges; 200,000 Apple Trees, &c. We pack stock to carry safely anywhere. Letter orders have our personal attention. Send for our Illustrated and Descriptive Catalogue with Prices.

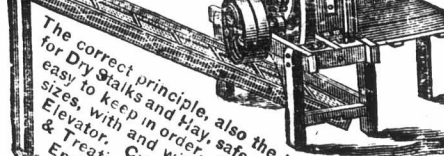
FERTILIZERS.

The Brockville Chemical and Superphosphate Co'y (Ld.) BROCKVILLE, ONT. Manufacturers of SULPHURIC, NITRIC and MURIATIC ACIDS, and of Superphosphate of Lime. PRIZE MEDAL, CENTENNIAL, 1876.

Superphosphate of Lime.

This Superphosphate is manufactured from best Canadian Rock Phosphate, thoroughly dissolved and ammoniated, and is guaranteed of superior quality. Put up in barrels, 250 lbs. each nett (8 to the ton). Price \$32 per ton, f.o.b. rail or boat. Send for circular. 190-L

"CYCLE" ENSILAGE CUTTER.



The correct principle, also the best for Dry Stalks and Hay, safe and easy to keep in order. Four and six sizes, with and without Elevator. Circular & Treatise on Ensilage on free.

THE NEW YORK FLOW CO., 55 Beakman St., N. Y. For early orders we will allow to cover freight and duty. 197-a

ESTABLISHED 1840. PETER R. LAMB & Co., Toronto, Ont.

MANUFACTURERS OF Superphosphate of Lime, \$30 per Ton; Fine Bone Dust, 30; 1/2 inch, 25; 3/4 inch, 20.

AGENTS WANTED

Diploma was awarded to us at the Provincial Exhibition, Sept. 23, 1882, for the first Bone Mill established in Upper Canada. 194-d

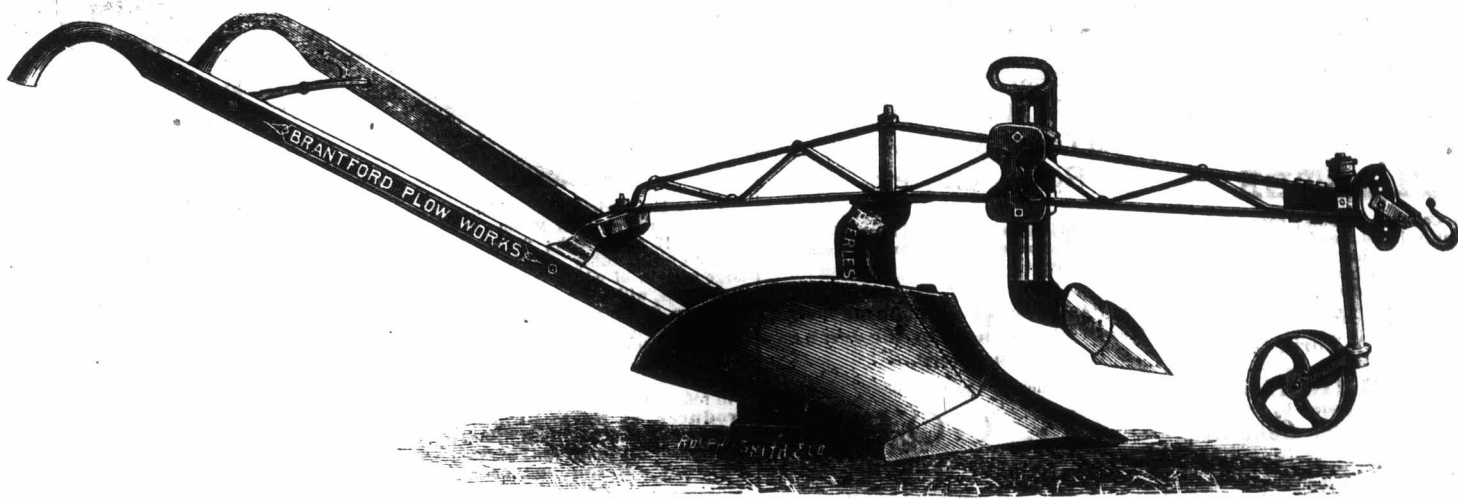
FARMS FOR SALE

In Western Ontario a number of choice Farms. Full descriptive list sent on application. Correspondence invited, full information given, and on personal application at my office plans of the townships shown, enabling strangers to see the position of properties and their proximity to towns, railway stations, &c. Farms with acreage to suit every one. Send to CHARLES E. BRYDGES, Real Estate Agent, Land Office, 98 Dundas street west, London, opposite to the City Hotel, for list of farms for sale. 176-tf

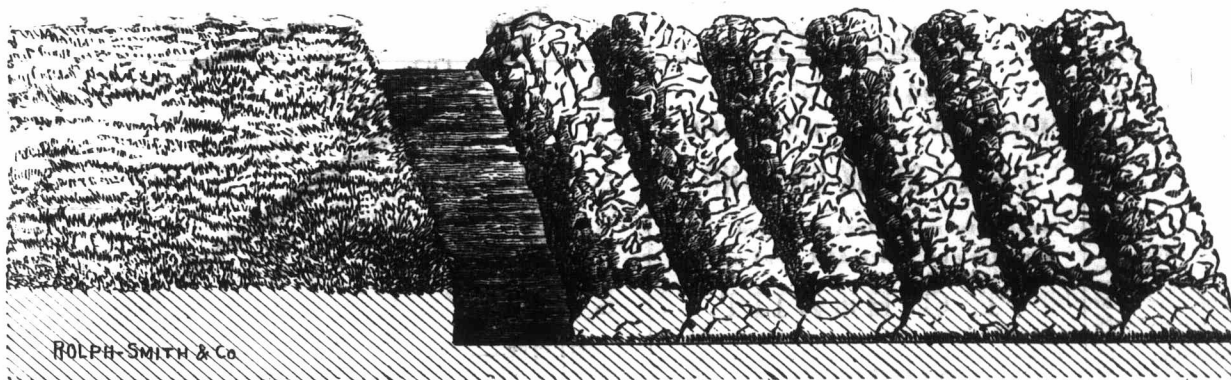
BUCHANAN'S IMPROVED PITCHING MACHINE!

This is the Pitching Machine that has gained such universal favors throughout Canada. "No Equal or No Sale," has always been our motto. We will send to any responsible farmer on trial. Works as well in peas and barley as it does in hay. Write for Circulars and Price List to M. T. BUCHANAN, 190-tf DORCHESTER STATION, Ont

BRANTFORD PLOW WORKS



The new **PEERLESS PLOW** man'd by J. G. COCKSHUTT, Brantford, Ontario
ALL SQUARE CUT PLOWS ARE BEST



ROLPH-SMITH & Co.

The above cut represents square cut broken furrows. All our jointer plows—"Peerless," "Champion," "Junior" and "Union"—manufactured at the Brantford Plow Works cut this style of furrow.
 All Plows Warranted to be Equal to those of the Best American Manufacture in MATERIAL, FINISH, STYLE and DURABILITY. 187-c

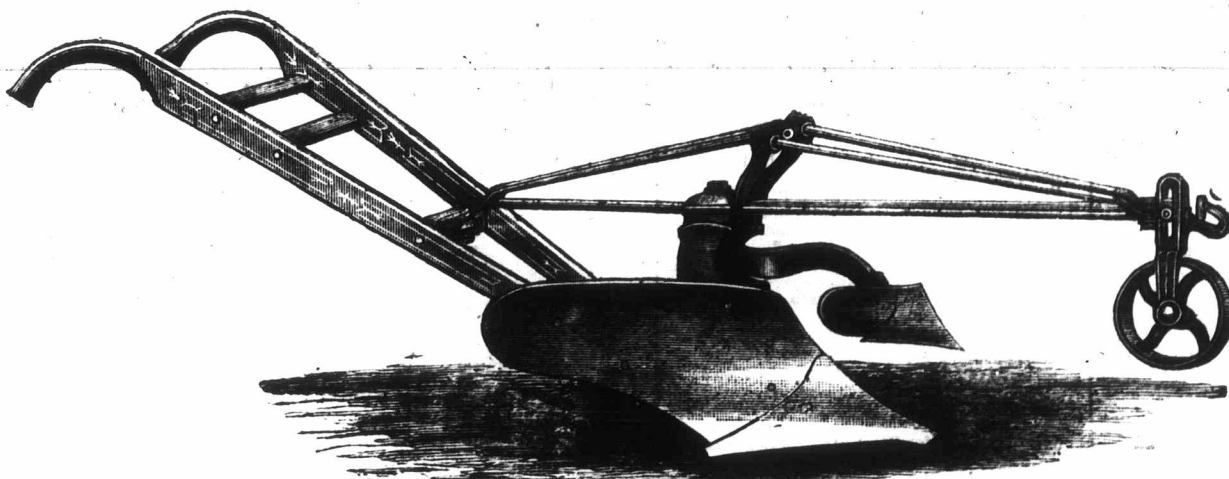
JOHN CHALLEN, Travelling Agent.

[Office & Works, South Market St., Brantford, Ont.]

JAS. G. COCKSHUTT, Proprietor.

THE "SEEGMILLER" TRUSS BEAM PLOW!

Flexible Wheel, Universal Standard Jointer Attachment.



This Celebrated Plow is made in Canada. It combines all the advantages of the best American chilled plows, with additional improvements. The material used in their construction is the best made; they are constructed by the most skilled mechanics; their durability and efficiency are unsurpassed. The thousands of testimonials from those using them are such as to satisfy all that this is the plow for the million.

Plows sent, freight prepaid, to any firm in Ontario, Quebec, the Maritime Provinces and Manitoba. Address—

SAMUEL SEEGMILLER, Agricultural Foundry, GODERICH, ONT.

Fairbank's SCALES

ARE THE
CHEAPEST IN THE END.

FAIRBANK & Co.,
197-c MONTREAL, P. Q.

LAND PLASTER

From Paris and Cayuga, in bulk, barrels or bags. Brockville superphosphate of lime in 250-lb. barrels; and Chloratum, the new top-dressing and insect destroyer, in 250-lb. barrels, from Paris. Car. lots of above in any proportion.

GILL, ALLAN & Co.,
195-b Paris, Ont.

FARMERS AND IMMIGRANTS coming to Manitoba can be supplied by us with **Horses, Oxen, Cows and General Outfits.**

Farms fully stocked, with breaking done ready for crop, always on hand for sale. Lots in Brandon and other places.
JOHNSON, STARR & Co.;
Stables, Real Estate and Outfitting Office near the Station, on 6th Street,
196-a BRANDON, MANITOBA.

GOOD BOOKS

FOR THE
Farm, Garden & Household

Allen's (R. L. & L. F.) New American Farm Book.....	\$2 55
American Dairying, by Prof. L. E. Arnold.....	1 50
American Bird Fancier.....	80
Allen's (L. F.) American Cattle.....	2 50
Barnard's Simple Flower Garden.....	38
" Strawberry Garden.....	38
Jacoby's Fruit Garden.....	2 50
Basin Plans and Outbuildings, 267 Illustrations and Designs.....	1 50
Bush's Family Kitchen Gardener.....	1 00
Butter and Butter Making; Hazard.....	25
Book of Household Pets, paper.....	50
Bommer's Method of Making Manures.....	25
Br.'s Farm Gardening and Seed Growing.....	1 00
Culver's Fruit Preservers' Manual.....	25
Clock's Diseases of Sheep.....	1 25
Cook's Manual of the Aary.....	1 25
David's American Cattle Doctor, 12 mo.....	1 50
Every House Owner's Cyclopaedia.....	3 75
Elliott Lawn and Shade Trees.....	1 00
Fowler's Forest Tree Culturist.....	1 00
Flax Culture. [Seven Prize Essays by Practical Growers].....	30
Fowler's Grape Culturist.....	1 50
Fowler's Small Fruit Culturist.....	1 50
Fulton's Peach Culture.....	1 50
Gardening for Pleasure.....	1 50
Gregory on Squashes (paper).....	30
Grant's Beet Root Sugar.....	1 25
Gregory on Cabbages.....	30
" Carrots, Mangolds, &c.....	30
" Onion Raising.....	75
Guonon on Milch Cows.....	1 50
Harris's Farming with Green Manures new.....	1 50
Harris on the Pig.....	1 50
Henderson's Gardening for Pleasure.....	1 50
Henderson's Gardening for Profit.....	1 50
Henderson's Practical Floriculture.....	1 50
Hop Culture. By nine experienced cultivators.....	30
House Plans for Everybody; S B Reed.....	1 00
Hunter and Trapper.....	1 00
Husmann's American Grape Growing and Wine Making; Illustrated.....	1 50
Johnson's How Crops Grow.....	2 00
Johnson's How Crops Feed.....	1 00
Johnson's Winter Greenhouses at Home.....	1 00
Keeping One Cow Profitably; illustrated with full page engravings of the most desirable Dairy Cows.....	1 ..
Law's Farmers' Veterinary Adviser, author's ed.....	3 00
Law's Farmers' Vet'y Adviser, Can. ed.....	2 ..
Our Farm of Four Acres. Paper, 30c; Cloth, 60c; extra cloth.....	1 00
Potato Culture—(Prize essay).....	25
Packard's Our Common Insects.....	1 50
Quincy (Hon. Josiah) on Solling Cattle.....	1 25
Quinn's Pear Culture for Profit.....	1 00
Rarey's and Knowlson's Complete Horse Tamer.....	50
Ree's Play and Profit in my Garden.....	1 50
Stewart's Stable Book.....	1 50
Stoddard's An Egg Farm; paper, 60c; cloth.....	75
Talks on Manures, Joseph Harris.....	1 50
Thomas' Farm Implements and Machinery Ten Acres Enough.....	1 ..
Thompson's Food of Animals.....	1 ..
Waring's Farmer's Vacation.....	3 ..
Wheeler's Homes for the People.....	2 ..
Willard's Practical Butter Book.....	1 ..
Williams' Window Gardening.....	1 50
Waring's Draining for Profit and Health.....	1 50
Waring's Elements of Agriculture.....	1 ..
Wright's Practical Poultry Keeper.....	2 ..

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, 50c additional to cover postage, etc.

TREES. TREES.

— THE — ARKONA NURSERIES

Is the best place to secure good Fruit and Ornamental Trees, Grape Vines, Roses, etc., etc.

The stock is large and fine, and is uninjured by the winter. Warranted true to name. Prices low. Send for Catalogue.

A Fine Assortment of popular Green House Plants cheap by the dozen or hundred.

Address all orders to the proprietor,
B. GOTT,
Arkona, Ont.

195-c ACTIVE AGENTS WANTED.

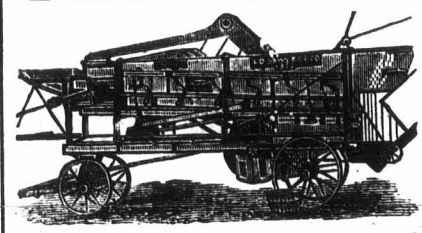
GLOBE LIGHTNING ROD COMPANY,

94 King St.,
LONDON, - - ONTARIO.

A FULL STOCK ON HAND.

Orders from Dealers Solicited.
Samples and Price List Sent on application.
T. C. HEWITT,
193-1f MANAGER.

SAWYER'S Grain Saver THRESHER



READ WHAT THE FARMERS SAY OF IT:

John Burkell, Rosemeath, Ont.—"Runs easy, light and very steady."
John Beemer, St. George, Ont.—"No time lost, runs all day without stops."
Pulfer & Charters, Brampton P. O., Ont.—"Works well in all kinds of grain, wet or dry."
C. Nelson, Burn-Brae.—"Second to none; stands at the top over all threshers."
Jesse E. Furry, Lowbanks, Ont.—"No dust; no breaks; no stoppages."
John Sigsworth, Harrowsmith.—"Threshes clean without wasting grain."
Alcock & Fleming, Ravenna.—"Beards barley, wet or dry, perfectly."
C. B. Taylor, Trenton.—"Works splendid; gives universal satisfaction."
Anglin Bros., Brewers' Mills.—"Runs and feeds easy; is superior to all others."

Address us for Illustrated Catalogue of **Threshers, Clover Mills, Horse Powers, Reapers and Mowers.**
L. D. SAWYER & CO.,
HAMILTON, ONT.,
CANADA.

178-1p



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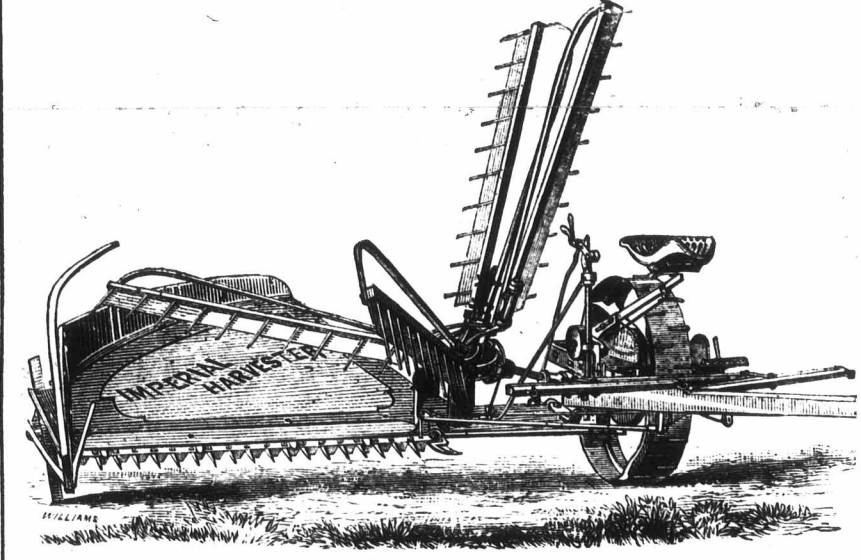
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