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THE FARMER'S ADVOCATE & HOME MAGAZINE

WILLIAM WELD, EDITOR AND PROPRIETOR.

THE LEADING AGRICULTURAL JOURNAL PUBLISHED IN THE DOMINION.

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

Terms of Subscription—\$1.50 per year in advance; \$1.50 if in arrears; single copies, 10c. each. New subscriptions can commence with any month.

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Address—

THE FARMER'S ADVOCATE,
30 Richmond Street,
LONDON ONT., CANADA.

Our Monthly Prize Essays.

CONDITIONS OF COMPETITION.

- 1.—No award will be made unless one essay at least comes up to the standard for publication.
- 2.—The essays will be judged by the ideas, arguments, conciseness and conformity with the subject, and not by the grammar, punctuation or spelling, our object being to encourage farmers who have enjoyed few educational advantages.
- 3.—Should one or more essays, in addition to the one receiving the first prize, present a different view of the question, a second prize will be awarded, but the payment will be in agricultural books. First prize essayists may choose books or money, or part of both. Selections of books from our advertised list must be sent in not later than the 15th of the month in which the essays appear. Second prize essayists may order books for any amount not exceeding \$3.00, but no balance will be remitted in cash. When first prize essayists mention nothing about books, we will remit the money.

Our prize of \$5.00 for the best original essay on *Country Life*, has been awarded to Blanche Aylmer, Melbourne, Que. The essay appears in this issue.

A prize of \$5.00 will be given for the best original essay on *Fall Work on the Farm*. Essays to be handed in not later than Aug. 15.

A prize of \$5.00 will be given for the best original essay on the following subject: *Can a Provincial Exhibition, purely Agricultural, be made Successful and Self-supporting?* Essays to be handed in not later than Sept. 15.

Subscription.

Subscribers, please notice the label on your paper, and if you have not paid your subscription for 1887, do not fail to do so at once. If the date on your label is Jan., '87, your subscription is only paid to the end of '86.

Editorial.

On the Wing.

DOMINION-DAY.

The 1st of July being a national holiday, in commemoration of Confederation, we preferred a drive in the country—a walk and talk with farmers in the fields, among the stock and grain, in the orchards and gardens, and among the ladies and children—rather than seeing some horses or men killed, or witnessing the betting allurements of the race-course, with its dust and heat. We drove through three townships, inspecting the crops in the varied soils, from the heavy clay to the light and almost drifting sand, and the rich river flat lands. Canada never appeared so rich and grand to us before. On the light lands that we formerly thought but little of, the winter wheat was the most luxuriant we had ever seen. On the clay grounds some of it was as good as could be desired, and part was a little patchy. The spring crops looked most promising, the pastures were abundant, and the hay crop good. The orchards were laden with fruit. It appeared to us that our apple crop on an average will nearly or quite double the crop taken from the orchards we have seen in Europe. This year the peaches, which are not a sure crop in this country, promise such a crop as has not been seen for fifteen years. The grape vines are well laden; the pears, plums and cherries far exceed our average crop. The small fruits, currants, gooseberries, strawberries and raspberries, were all good, and what is most remarkable, all the last mentioned fruits were partaken of by us in a ripe state from the gardens of the farmers on this day, the strawberry crop not being quite finished, and the others just ripe. This is unusual, to have all our small fruits ripe on the 1st of July, but this year we have had no frost to destroy or keep the crop late since the ice left us in the spring, which is unusual, almost unprecedented. What also makes this trip remarkable was the fact that all the crops are now on the ground. Very little hay had been cut, and the wheat in some places had already turned yellow and was nearly ready to cut.

A few of the farmers were commencing their haying. Some were taking their families on a visit to their friends; some of the farmers' sons and daughters were seen at base ball, cricket or lawn tennis. All appeared happy, all satisfied with their crops, all prospering. We called at one farm that was mortgaged, but it had been mortgaged to purchase the adjoining farm, and would easily pay it. We doubt if in any other part of the world such a sight could be seen, and such a contrast to the

first sight we had of this locality 45 years ago. Then log shanties and corduroy roads prevailed, or no roads were visible, with small clearings and stumps in every field. Now we drive along the gravel roads and see the fine large barns and substantial houses; we see those ox-team farmers now driving their families about in stately carriages, the old codger's daughter now fitting from the garden to the piano. These are now the farmers of Canada—no rents, no tithes, no poor rates, no toll gates, no market fees; no pestilence or famine has ever been dreamt of, no disease has ever swept your stock or your market from you. Farmers, we say, stay right where you are; do not be led away by clap-trap orators; try to keep down expenses. You are now better off than any farmers in the world; no failures, no bankrupts are heard of among you. Beware of those who are advocating increased taxation; they are sharpening their knives to cut your farms from you or your children. Be thankful for your Dominion Day, your Jubilee crops. Do your duty, seek light and truth, and by your example discourage those who are known to be deceivers. Unite for good, and rejoice in this year of peace and prosperity.

"With hearts resolved and hands prepared
The blessings you enjoy to guard."

Commercial Union.

As the only independent agricultural publication in Canada, the FARMER'S ADVOCATE will furnish in a concise form the most important points for and against this question, to enable our readers to form correct opinions about this subject, which has agitated the minds of many during the past few months. We deem this to be necessary, as we have promised to publish the proceedings of the Dominion Farmers' Council. In this critical task we hope to throw much light on this subject, so as to enable farmers to get a correct insight of all sides of the question, as it appears to be capable of as many views as a kaleidoscope. Although up to the present time we may not have been able to see the advantages that some may see in commercial union, we are not unconvertible, and at the conclusion of the discussions we hope we may be found with those who desire to do most good for the agriculturist. We find at the present time a vast diversity of opinion among our subscribers. Some contend that commercial union will be the best thing for the farmers that ever happened—in fact, the only salvation for them; others say it is the greatest humbug and fraud that has ever been agitated in the country.

We trust all who may take advantage of our offer to allow a limited portion of our columns to be devoted to this subject, will confine their remarks to facts, and avoid repetitions of what has appeared before in the ADVOCATE.

A Contrast.

ON THE WING, No. 2.

On the 13th, 14th, and 15th we were in Oxford, Brant, Haldimand, Wellington and Peel. A drouth has now very materially affected the crops; the heat has been more excessive than for many years. The ripening of the fall wheat has been too rapid, and the grain will be materially reduced in size of kernel to what it would have been. The pastures are now dried and brown, and the spring crops are being very much injured; the root crops are also suffering. One effect of the drouth has been to advance the price of new cheese 2c. per lb., the quantity being greatly reduced.

The object of this trip in the wheat harvest was to obtain what information we could regarding the

WINTER WHEAT,

to ascertain what to sow. We called on several farmers where we would be likely to obtain any information. We saw the Red Lion wheat, as it was called, the wheat that had been sold in large quantities at \$15 per bushel. We exposed this fraud to you as much as we dared do without incurring a liability of being ruined by the unjust libel law. Many of our farmers are materially injured by the gigantic swindle, despite the fact that members of Parliament repeated the remarks we then made in the house privately. No steps have been taken to punish or check these schemers.

We called on the leading seedsmen in Hamilton, Toronto and Guelph, having also visited many farms, including the Model Farm at Guelph. From this farm we expected that we should this time have been able to ascertain the necessary information, and have to go back to our old farm for reliable facts and good crops. We went over the test plots at Guelph, and were never more convinced of the dangers of attaching any reliance on reports from this institution about crops or fertilizers, as the inequality of the subsoil is so uneven; on those small plots where grains and fertilizers had been used, all receiving the same treatment, one spot would be short and nearly ripe, while another would be rank and green, and so on throughout nearly all the plots in such an uneven manner that correct results could not be given as to the yield or benefits; it is a great pity it is so, as this defect cannot be remedied.

A week later we were on the old Westwell Farm, where we first commenced our experiments. Here we had seen the crop in its different stages. The Scot and the Democrat wheat here surpass any of the old or new varieties we have seen; the soil is a clay loam; it is farmed by our sons to make a living from it the same as any other farmers.

We would still recommend the sowing of the Scot and Democrat wheat. On lighter lands some prefer the Michigan Amber or Egyptian, which is called by many other names. Some of the other varieties are doing well in some localities, but do not succeed near so well in others, and some that have been introduced with considerable blow are now being discarded. We had many new varieties sown last fall, but they were so bad we did not allow them to occupy the ground. We are and always have been on the lookout for any good reliable variety, and have thus been fortunate in introducing all the most popular varieties that are now grown, without

having been greatly injured by the clap-trap varieties.

On our farm we planted seven acres of an orchard. We had built up our calculations on the profits of our trees. The orchard has been planted from time to time, some twenty, some forty years ago. For several years past we have been much disappointed, as it has borne but very sparsely. It had been kept in pasture, and last year it was plowed to see if that would do any good. The result is that nearly every tree is overloaded; such a sight we never saw—seven acres with scarcely a blank of any kind. The crop is now estimated at over 2,000 barrels. If any pomologist wishes to see a sight, let him see this orchard at the present time. Of course there are some mistakes, some varieties are not as valuable as others; but more can now be learned from that orchard and the crops that have been raised on it, than from any other spot in Canada. In that orchard that now has thousands of barrels of apples in it, the first Fife wheat was raised that supplied the seed for all the western portion of Ontario; also the Early Rose and other potatoes, the Australian and Black Tartar oats, the Scot and Democrat wheats, which are now grown all over the Dominion. We presume half the farmers who grow these crops never knew where they came from. We have another test ground near this city, of which you will hear in future issues.

The Seed Business.

We have received the following circular and prepared form for our signature:—

AMERICAN SEED TRADE ASSOCIATION.
WILLIAM MEGGAT, Wethersfield, Conn., President.
ALBERT McCULLOUGH (J. M. McCullough's Sons), Cincinnati, O., Secretary and Treasurer.
C. L. ALLEN, Garden City, N. Y., Assistant Secretary.

Secretary's Office, June 30th, 1887.

Farmer's Advocate, London, Ont.
Dear Sir,—At the convention of the American Seed Trade Association, held in Philadelphia, June 14th, the following preamble and resolution was unanimously adopted. Not knowing whether or not it has been your practice of distributing seeds, as therein stated, I take the liberty of mailing you this copy.

WHEREAS it is the sense of this Association that the plan adopted by certain newspapers of distributing seeds as premiums or gifts to their subscribers is very prejudicial to the interests of the seed trade, and

WHEREAS this as well as any other free distribution of seeds tends to create the impression in the minds of the public that seeds have no commercial value, and that all seeds, irrespective of the care taken in their production, are reduced to one common level; therefore

RESOLVED, That this Convention as a body, and each member individually, do hereby pledge themselves to withhold from all papers following this practice any and all advertisements during the ensuing year, unless upon the written guarantee that such distribution shall be discontinued, and that the Secretary forward a copy of these resolutions to every member of the Seed Trade Association, and to every agricultural and horticultural paper published in the United States and Canada, and also to such religious and secular papers as have adopted the plan which we aim to discountenance.

Would be pleased to have your reply on the enclosed slip.
Yours respectfully,
ALBERT McCULLOUGH, Secretary.

We, publishers of do hereby pledge ourselves to discontinue the offering of seeds as premiums or gifts to our subscribers.

In response to this request we state that we emphatically refuse to sign this or any other pledge that we believe will be detrimental to the interests of our readers. We have disseminated the best cereal and other seeds that are now grown in this country; some we have presented, some we gave as premiums, and not one of our advertisers

in this country have ever objected to what we have done. It has been rather beneficial than otherwise to the honorable and reliable dealers in Canada, with every due respect to all our honorable American seedsmen with whom we have transacted business. We decline to sign such a pledge, and prefer paddling our own canoe unpugged. Should our patrons who are the best seedsmen on both sides of the line convince us that we have done them the slightest injury, we might alter our tactics without any pledge.

If this is commercial union, count us out. We will give our readers all the information about good seeds we can. We have expended many hundreds of dollars on our experimental plot this year, and we intend that our readers shall profit by it.

There may have been very great injury done by the free distribution of government seeds in the States, and many unscrupulous persons have profited by disseminating our seeds and obtaining fabulous prices for them. But the FARMER'S ADVOCATE is not a party organ, has done no injury to the seed business or its supporters, and is not conducted under secret pledges of any kind. We look on this as a tendency to suppress liberty and freedom, although it may in time become necessary in Canada for seedsmen to join this association. We consider that the word Canada might have been left out of this circular.

Notice to Seedsmen and Others.

We have previously given \$100 to exhibitions to be expended for prizes. This year we purpose expending \$100 or £20 as premiums for the best seeds, etc., therefore we will offer \$50 or £10 for 4 ounces of either spring or fall wheat that bids fair, after testing, to be of more value than any of the varieties of spring or winter wheat we have already introduced. \$25 or £5 for 4 ounces of any potato that bids fair to be of more value. \$25 or £5 for the most promising variety of vegetables. \$25 or £5 for the most promising variety of fruit. This offer is open to all the world. Any seed or plant must have been previously tested and proved worthy of trial, and must be a variety not now known in Canada. No old variety with a new name will be entitled to receive the award. We have a test ground on which we test new varieties. The award will be made after a fair trial. None of the varieties so sent will be disseminated without permission of the senders, and information about valuable varieties will be given in the ADVOCATE.

FARMING IN PENNSYLVANIA AND ONTARIO.—We take the following extract from The Week, by a writer signing himself FAIRPLAY RADICAL: "Value of land and farm buildings per acre: Pennsylvania, nearly \$50; the nine counties nearest Toronto, \$59.20; the Middlesex group of seven counties, \$55.76. Gross value of produce raised by those engaged in agriculture per head: Pennsylvania, \$431; on rented Ontario farms as a whole, \$585. So that it is clear that at present the Ontario farmers are better off in most cases than the United States farmers. Pennsylvania agricultural prosperity is far above the average of the other States of the Union."

Seventy-five percent of the lard sold in Boston is a spurious and adulterated article. It is well known that this bogus stuff is composed of such innocuous materials as cotton-seed oil, beef fat and mutton tallow.

Draining the Orchard.

Our readers will peruse with interest the communication from Mr. Henry Ives and his criticisms of Mr. K. Sutherland's prize essay, published in our June issue. We fear some of our readers may be led to the conclusions that all "sandy loam" orchards require no drainage, and that drainage may be overdone. Drainage can only be overdone as a matter of expense; that is, there may be inefficient returns from the capital invested, but in no ordinary case can the land be made too dry by excessive drainage, nor can such excess produce results injurious to the crop. But what we desire specially to allude to is the conditions under which light sandy soils stand greatly in need of drainage.

Let us illustrate: On a portion of our experiment grounds, which is a sandy subsoil with a surface layer of sand containing a large percentage of vegetable matter, we planted out some apple and pear trees for experimental purposes, chiefly for testing different methods of planting and fertilizing. To all outward appearances, the soil is perfectly dry; but below the bank of the river spring water is seen oozing out even in the driest seasons, showing that an orchard on the bank would sooner or later suffer from cold feet. We therefore deemed it advisable to dig drains $4\frac{1}{2}$ to 5 feet deep, and at these depths several springs were found in the bottom of the drains. We mention these facts to show that it is easy to be deceived about the dryness of the soil, and in case of doubt, there is a good defence for the practice of alleged "over draining." We know of sandy soils the wetness of which can only be determined, by ordinary observation, from the nature and progress of the vegetation. If a sandy soil has good natural drainage, the vegetation should be early, and by comparing this—and the natural varieties of weeds—with the vegetation on similar soils in neighboring sections, a fair conclusion can be drawn as to the character of the soil with reference to moisture.

It is a great mistake to suppose that excessive rains can be removed too rapidly by drainage; and with reference to the supply of moisture in a dry season, the retention of rain water in the soil will be of no assistance, if by capillary action the supply is not furnished from below.

With reference to subsoiling, which our correspondent also criticises, a great deal depends upon so many circumstances that we cannot mention them here. We might add, however, that the difference in the effects of subsoiling and draining is one more of degree than of principle, drainage producing subsoiling effects in the most practical and efficient manner.

We are pleased to learn that the results of milk testing at the cheese factories, as conducted by our dairy expert, have been so successful, and so thankfully received by the directors and cheesemakers at the factories visited. The reports we have received state that the effects upon the patrons have been beneficial, and in all cases a better quality of milk is received. We shall be pleased to continue these tests, so far as our time permits, and we welcome all invitations to have further tests made. We appreciate the thanks received from the directors of the factories visited. Particulars will be found in our next issue.

It has been found in New York State that a 10-inch board wall, filled in with sawdust, will protect fruits or roots from the severest frost.

The Farm.**Want of Skill in Handling Horses.**

One of the most unfortunate things that can happen to a farmer who is forced to depend upon hired help, such as he is compelled to take on trial as it comes along, when he is ready to begin spring work, is to get men who have no skill or judgment in handling work horses. In the first place, they start out by showing an entire want of judgment in feeding. Having a full crib to go to, they commence without regard to the previous manner of feeding, to crowd upon the team they are to have the handling of, all the grain it will consume, and they are not satisfied until the horses leave a portion in the feed-box, as evidence that they have had enough. Horses fed in this way, as the warm weather comes on, sweat and foam at their work, and the dull-headed hired man takes no useful hint from this. He is very likely to charge the sweating horse with being soft, while a reasonable amount of knowledge would teach him that the most hardy horse living can be rendered unfit for hard service by indiscreet feeding.

Then, again, in the adjustment of the harness, the average hired man knows little about it. The collar is often badly fitted—too tight or too loose above, not fitted properly to the peculiar form of the shoulder-blade points of each horse, which may vary materially in the two horses that make up a given team. The draft may come too high, which, in a horse with considerable slant to the shoulder, will result in causing the collar to press unduly upon the windpipe, interfering with the horse's breathing. The collar may be right, but the hames too long, or, on the other hand, too short below the point of draft. In all these respects, the highest of skill is required in fitting, that the power may be expended with the greatest ease to the horse, and the greatest efficiency in the carrying on of the work. In the matter of the check rein, no hired man should be permitted to say how the working horse shall carry his head while at heavy work. The horse only, and each horse for himself, can decide this. In the manner of guiding, and general management of the team while at work, nothing is more reprehensible than the habit, so common with some hired men, of jerking the team with violence, by the bit, and lashing it with the lines. A bungling, noisy driver can confuse and spoil the best team to be found on any farm by pursuing this plan for a day or two. Skill in fitting the harness and adjusting the line of draft, and skill and quietness in handling the team while at its work, should be rigidly exacted, and made a condition.

But perhaps there is no one thing in the management of a team wherein more skill is required than adjusting the work from hour to hour to the condition the horses may be in at the time. Thus, the driver starts out for a journey or drive, or to haul a heavy load, immediately after a heavy feed has been given, a very improper thing to do, no matter what the apparent necessity. The average hired man expects the horse to be full of life and strength after a hearty feed, not knowing or stopping to think that the powers of the system are expended in a large measure upon the process of digesting a heavy feed of grain, and that, as a natural following, the brain is dull and the tone of the muscular system far from being at its best. A little observation would show him that the

horse is dull from necessity for a time after a feed, and if he tries the experiment of driving slowly for a couple of hours, he will find the team will brighten up, and if it has any inherent life, will, of its own accord, quicken its gait, and move off with entire willingness. In addition to the heavy feed referred to, the other error, of equal, or very nearly equal importance, is the leading of the team to the watering place immediately after giving the full feed referred to, thereby chilling the stomach and suspending digestion for the time being. All farmers of considerable experience have found that not more than one man in ten has skill in the directions pointed out, and where he is so fortunate as to secure such an one, all the others should be placed under his directions.—[National Live Stock Journal.]

The Influence of Parents.

Of all the means available for effecting an improvement in any race of domesticated animals, breeding is the most powerful. The general influence of parents upon their progeny is that the latter invariably inherit a modification of the forms and qualities of the former. Nor is it necessary for transmission to offspring that any especial form or quality possessed by a parent should have been by him or her inherited; an improvement once established in an individual, whether by inheritance or as a result of special management, is susceptible of transmission to succeeding generations, and by careful and intelligent attention to the selection of future partners for the offspring, the alteration may be fixed and become a typical character of an improved race.

It must never be forgotten that not only are superior forms and attributes transmitted from parent to progeny, but that defects, malformations, and unsoundness, or the predispositions thereto, seem to enjoy an especial privilege of re-appearing in succeeding generations.

Some persons regard the qualities and defects of breeding animals in a relative as well as an absolute sense; for instance, they agree that a malformed chest, or misshapen limb, are defects absolute, but assert that flat feet are only positively defective when possessed by a stallion intended to be put to a mare having similar feet; and further, that such faults are to be considered rather as desirable qualifications in the partner of an upright-footed mare. Personally I can admit of no such qualification, and believe it folly to expect that the mating of two animals, each having opposite defects of any kind, can result in anything but disappointment. Imperfections of conformation, constitution, or temper, can not be so corrected, but are to be very gradually improved by careful attention to the selection of partners possessing perfect organization, to oppose defects, and still more by the employment of well-directed external means calculated to ameliorate the particular fault. Physical and intellectual faculties to be permanent must have been fixed by transmission from parent to progeny, through a series of generations. Recently acquired qualities are ephemeral; they are transmitted with difficulty, and destroyed by slight opposing causes.—[Reynolds on Draft Horses.]

A circular has been issued by the Canadian Pacific Railway Company to the effect that cattle from Canada to Dakota will be subject to a quarantine of ninety days; also inspection by a veterinary surgeon whose certificate is necessary before cattle can be admitted into the territory.

Handling Liquid Manure.

The most valuable part of the crop food is generally the most neglected—liquid manure. Men will spend thousands on elaborate farm buildings, while a liquid manure cistern never enters their brain except when they are compelled to build one for special reasons. Yet the cost is nothing compared to its value.

I have had 12-inch glazed pipes sunk 12 feet under ground, to convey mansion-house refuse from water-closets, kitchen and laundry into a cistern, and all the liquid from horse and cow stable also enters it. On top of this cistern is a large flag-stone, on this a pump, raised sufficiently high so that a cart or wagon can be backed under it, and the liquid pumped into oil barrels, a common iron faucet in the end, and a piece of tin or board attached to act as a spreader, throwing flake-like. For good effect this must not be put on sparingly, as by a road sprinkler. This liquid can be applied to all crops, from the seeding to the ripening, in flower garden, kitchen garden, all plants under glass, at proper time, and the growing of all farm crops.

For intermixing in the cistern, a dash like that of an old-fashioned churn is let into the flag-stone, and churned up and down before using; but a far better plan is to have a crank, chain and handle, and three fans placed in the bottom, to work so that the edges set within four inches of the bottom, and in revolving they will not touch the bottom, on the principle of a grain fanning mill, except that the fans must be of hard wood, and a strip of galvanized iron put on the edges.

This liquid I apply to lawns and meadows, and in August, when my neighbor's lawn and grass is as brown as a berry, mine is as green as pea foliage in May. I put a deodorizer in the cistern, and for some crops ammonia and other fertilizers, so that when it comes out there is no more disagreeable odor than from pump water. Carts or wagons are out at three o'clock in the morning using this liquid; by seven all is done. No matter how hot the day may prove, by applying thus early on any crop it will not water-burn.

I am no believer in the elaborate Meehi system of converting all manures into liquid matter by steam presses, &c., which I have seen in practice, and manuring by irrigation strictly. I am an advocate of irrigating by water; I have proved fully that this will pay. Let me say to those non-believers in liquid manure, who are fond of fine flowers, particularly extra fine roses, in winter, that those magnificent flowers are grown on benches 4 to 6 feet high, planted on only 5 inches of soil. What does it? Liquid manure, ammonia and solid cow manure droppings used as a thin top-dressing. All who have stock, if only a cow and a horse, can have their liquid manure cistern, though but a barrel sunk in the ground.

How often do we see manure carted out fresh from the stables, deposited on a knoll or poor piece of ground in large heaps, that the seepage may enrich it—a fallacy of the first water! Those poor knolls are, usually, a sandy, gravelly loam surface or a gravelly subsoil? this seepage, if any, will go through it like water through a sieve; then this straw mass is exposed to wind from the four quarters; if there is any life in it, it becomes a frozen mass, and in spring it is as it went out, a mass of straw. Had this same heap been

placed in a sheltered nook, even, turned over when wet to prevent fire-fanging, and so repeated every three weeks, and when fully rotted transported to its proper field for spring use, adding, in mixing, a bag of ammonia, and when finished, some plaster, it would have been a different thing. You are coming nearer right when you have the heap near your liquid cistern. You then have the soup and the meat.

One may see, once in a life-time, a farmer who will cut down his weeds from his fence rows before seeding, and draw his leaves in the fall to the manure pile of horse-bedding, that the heat may decompose them all, the whole pile being regularly turned over, looking as square as a board—but oh, how few such! "It is too much trouble." An incident of my own life may be a lesson for others: At the age of 15 I was sent to the late Lord Palmerston's to finish part of my apprenticeship. In March (my first day) at 6 o'clock in the morning I was sent to rake some new ground with a 2-foot cast-iron rake (as heavy as a modern sledge—those of the old school will recollect them). After ten minutes' work that bitter cold morning, I threw the rake down and said I would go and be a sailor, walked off a few steps, reflected, thought it would be cowardly, returned and stuck to it. In after years, when the matter was gone from my mind, and I was a head man, my old master recalled the circumstance and said it was my father's wish to try me; he had been watching all my movements, and remarked, when he had seen my action, that I would stick to it, and at least equal my fellows. I had a quick promotion, and they say I deserved every step, as I stuck to them all. I say also to young farmers, pick up the rake, and don't go to sea; no matter how heavy it may be, go at it; do not flinch at the word "trouble," and you will make liquid and solid manure too. Your first year may not meet your expectations, but keep on the second year, and you will say: "Well, how foolish I have been not to have thought of this before! My crops are better than my neighbors, and how neat and clean every thing is around me; and, yes, I am some dollars in pocket, too, and envied for my success." As to acreage, the same system can be pursued whether on one acre or 5,000, and in every department of agriculture and horticulture. This is simply the stepping-stone to high farming, the only system of farming that will pay, but understand that it bears no relation to that other fellow—fancy farming—of which keep clear.—[GERALD HOWATT, in Country Gentleman.

Some one very sensibly writing of treatment of horses, says: "Never run after a horse in the pasture. If he does not like to be caught, coax him with a little grain, but never deceive him with an empty dish. You can soon teach the wildest horse to come to you. When he does come let him eat a little while before you lead him off. Some horsemen, when going to the pasture, whether they wish to catch a horse or not, always carry a tid-bit—an ear of corn, a handful of oats, an apple or a carrot, a chunk of sugar or salt. When you turn a horse out to pasture, do not give him a slap with the bridle; he will remember it to your regret if you do. Make a pet and a friend of your horse; it will improve him and make a better person of yourself."

Scabby Potatoes.

The question of scab on potatoes has been discussed for many years by practical farmers with conflicting results, and in more recent years the experimenters have been investigating the subject, also with varying results. At the Mass. Experiment Station, a mixture of ground bone and muriate of potash was tried for two seasons (1885 and 1886), the experiment having proved successful in the former year, but was a complete failure last year. If the disease is caused by a worm, as some suppose, and not by a fungus, there will be no danger in planting scabby potatoes, and it has been established that scabby potatoes have produced sound crops. Microscopic animal life has been discovered on the scabs, and some have jumped to the conclusion that this is the cause of the scab, but it would be just as reasonable to say that the scab is the cause of the microscopic life, or at least favors its development.

From a practical standpoint, Mr. Henry Ives, in the American Cultivator, makes the following observations, which are worthy of attention:

The inquiry as to what causes the scab on potatoes is one of interest and importance to all. The original cause seems to be the corrosive attack of some worm or reptile, and the scab itself is the drying up and healing over of this indenture or wound, made through the skin, and into the surface of the potato. In different cases we find this done by different varieties of vermin, but nature's course in healing the wounds is about the same in all cases.

For this reason, and from the fact that all cases of scab have about the same appearance, the potato planter who has found the earth worm doing the mischief will formulate the theory that this same worm is the origin of the scab in potatoes. This notwithstanding the fact that the earth worm has been "lionized" by some of the professors as the origin of soils.

Another observer will find a small white worm eating into the surface of his potatoes, and after a few days, as soon as the rupture has time to heal over, his potatoes are scabby, and he will declare the enemy to be a small white worm which causes the scab. These and other matters which are the means of causing a break through the skin of the potato, will develop the scab. These are the reasons why so many practical men differ as to the cause of this trouble.

Again, we have the scientific men, who seem just as positive, and perhaps more so, in the promulgation of theories as to what causes the scab. These scientific gentlemen are not fully agreed among themselves. Some of them have with the microscope seen a multitude of "small fry," too minute to be seen by the naked eye, in the substance that forms the scab on the potato. Hence they arrive at the conclusion that the "small fry" are the original cause of the scab. The planter, on the other hand, without doubting the scientific discovery of the potato being infested by microscopic life, between the time that the worms or grubs first make their raid on the tubers and the time that their leavings become dried matter and dead scab, still does not charge them with being the origin of the damage, but concludes that nature always provides for some form of life to occupy decaying substance.

There is also the wire worm, which bores and eats its way straight into and sometimes through the potato. Again, there is the large white grub, which gnaws into the side of the tuber,

consuming it as he proceeds, leaving a clean-cut cavity often large enough to contain a pea. The edges of these incisions will heal over similar to the edge of the scab. The other class of vermin first mentioned, as they only penetrate the surface, a slightly elevated, rough, black spot is left when it heals, though not showing much more than skin deep on the potato. This causes but slight injury to the potato for cooking purposes if it is first pared. But of course it greatly depreciates its value in the market.

To confirm my theory that the scab is chargeable to the earth worm and other ground vermin, I would first call attention to the fact noted by most potato planters, that where their potatoes are most affected with the scab, the ground in which the tubers grew was most infested with these worms. I would not convey the idea that there is always scab where there are worms, for there may be other plant growth there also, more agreeable for them to feed upon. I do assert that where this trouble shows itself, there also are the worms.

On the side of the planted field next to the barnyard or hog-pen, or through a rich hollow where the angle worm is most plenty, there also I have found most scabby potatoes. Again, when digging potatoes early in their growth, farmers have found these worms actually doing the mischief, and have seen the fresh ruptures caused by them, and also their leavings, which in time heal over to make the scab.

I have seen the same mischief, and during the past season, to prove that such a rupture would cause the scabby appearance on the potato, I carefully opened some hills so as to lay bare a few tubers, which I proceeded to scarify in small spots with the point of a pin, aiming to make a rupture in appearance as near as possible to the fresh working of the earth worm, as I had observed it on previous occasions. Then, after replacing in the earth thus removed, and making the hills again, I left them for a week or ten days, when, on examination, I found in place of these incisions a well-developed scab on each potato thus scarified.

Another circumstance which potato growers have often noticed, is that by using some of the commercial fertilizers in the hill, especially superphosphates, their potatoes thus treated would be more free from the scab than those fertilized by barnyard manure. I can account for this mainly by reason of the fact that the superphosphate, being so disagreeable to the vermin above described, repels them from the hills, and consequently potatoes thus fertilized are uninjured. This is on the same principle as the use of tar or copperas water, or like substances, on our seed corn to prevent destruction by worms after planting. I have abundant practical evidence to substantiate my theory above as to what causes scab on potatoes.

PUTTY FOR REPAIRING BROKEN WALLS.—The best putty for walls is composed of equal parts of whiting and plaster of Paris, as it quickly hardens. The walls may be immediately colored upon it. Some painters use whiting with size; but this is not good, as it rises above the surface of the walls and shows the patches when the work is finished. Lime must not be used as putty to repair walls, as it destroys almost every color it comes in contact with.

It is easier to keep a horse in good condition than to straighten him up after he has lost his health.

Tightening Wire Fences.

The efficiency of wire fences depends much upon the tightness of the wires of which they are composed. A very convenient contrivance for re-tightening wires may be made when building the fence. Do not drive the staples holding the wires into their place quite home, so that the wires may slip through; and instead of attaching the wires directly to the corner post, fasten them firmly to a piece of scantling bolted with two long bolts to the corner post. The bolts should be long enough to allow a space of about a foot between the post and the scantling. The thread on the bolts should be about 10 inches long, and the hole in the post should be somewhat larger than the bolt, to allow it to pass through easily. When the wires are to be tightened, draw the scantling, by means of the bolts, nearer to the post. Instead of the scantling, an eye-bolt may be used for each wire. This has the advantage that each wire may be tightened separately. Do not have the wires too tight during winter, as the frost is then liable to break them. In building wire fences it is well to raise the ground under the fence by plowing six furrows into a ridge, and then shoveling the outer two furrows into the centre.

Winter Manure in Box Stalls for Stock Comfort and Economy.

I know that some farmers think that leaving manure in stables under the stock is a rather shiftless way; but I have practised it, more or less, for years, and the more I do of it the better I like it. I consider that there is economy in the handling; that the manure is better saved, and that when properly managed the system gives more comfort to the stock. My experience is with horses and young cattle. For dairy cows giving milk, I do not think I should like it. We lately finished drawing out the manure from pens where four horses wintered in this way. There was no fussing with cleaning stables daily during winter. Straw was stored overhead and enough thrown down to keep the top always dry and clean. They tramped it so there was no heating. There certainly was no leaching. It was all there. In many horse stables half the value goes through the cracks. Then half of what is thrown in a pile outside goes up into the air from overheating. That is what I call "shiftless." With plenty of straw on the surface the horse has a soft, comfortable place to stand on, which is much easier for his feet than a plank floor. Then he can move around a little instead of being shut up in a narrow stall. It may not be shiftless, but it is positively cruel to keep a horse tied up for days in a narrow stall on a hard floor. I saw a hundred of them suffering in this way last winter. Farmers as a rule have but little for their teams to do in the winter months. Humanity demands that they be made comfortable as possible. So well convinced am I that this is the best way to keep horses, that in planning a new barn to be built this season I have left out the narrow stalls entirely, giving each horse a box stall. The mangers will be built with the bottoms up from the floor a foot or so, so as not to be too low when there is an accumulation of a foot of manure and straw.

We shall, however, build the manger clear across one end of the stall and have a swinging partition that can be let down, so as to make two common stalls of each pen on a pinch, such as at threshing time, or when a farmers' picnic comes

our way. The straw will be over the stable, and the hay in front of it. In regard to the economy of labor, instead of doing a little every day all winter, I backed the manure-spreader up to the stable door this spring, and my man threw the manure in while I tramped it down. While I was gone to the field he loosened up another load so it could be thrown on the spreader in a hurry. The twice handling makes it spread much nicer. In this way we got about four loads per hour, on a field near by; we could clean out after a horse, for all winter, in five hours. And we knew we were drawing out something of value, not fire-fanged straw. It would come up in solid flakes; but by handling them twice and taking care in loading, the spreader put it on a field of rye (to be plowed under for a crop of potatoes soon) so evenly that you could hardly see any of it three days afterward. I have kept a good many head of calves and yearlings in this way, letting ten or twenty of them run in a large pen together, and raising the mangers or headholes as the manure accumulated. The result was always satisfactory to me as well as to the animals. Do not call it a shiftless way, brother farmers, until you give it a fair trial. Then I know what the verdict of the stock will be, and what the verdict of the better fed (in many cases) land will be, and I do not see how you can go against these, even if you have been brought up to think stables should be cleaned every day. Of course this accumulation of manure is only proper during cold weather, and where due regard is paid to good ventilation. —[T. B. Terry, in Tribune.

Frauds upon our Farmers.

In a recent issue we published a form of bond entered into between the Ontario Grain and Seed Company of this city and farmers whom the company could induce to sign their contracts, being to the effect that the farmer was to receive a certain quantity of a certain variety of wheat at \$15 per bushel, for which he was to pay by note, the company agreeing to take back a part of the wheat under certain conditions. We pointed out the bond had a very suspicious wording, and recent revelations have confirmed our suspicions. Some farmers have advertised cautioning the public from purchasing their notes, as they were given without consideration, and the treasurer and manager of the company is advertised as having sold out the grain, bags, office furniture, etc., also the farmers' notes, and as having absconded to the States. The "balance of the company" cautions "all parties to beware of anyone professing to be agents of this company."

We also notice that the Bohemian oats swindle has revived in Pennsylvania, and it is estimated that 2,000 farmers have been swindled in three counties alone to the extent of \$500,000. The Lancaster Examiner gives the following synopsis of the scheme:

The method of the swindler is simple, but ingenious. He approaches in the fall of the year Farmer A., who has been carefully selected for his prosperity and reputation for integrity. The swindler tells Farmer A. that he has for sale a new kind of seed oats of marvelous quality. He offers to sell A. ten bushels of this cereal at \$10 a bushel. A. is aghast at such a price. He never heard of more than thirty or forty cents a bushel before. But the swindler replies: "Oh, you can make lots of money out of it. You give me your note for \$100 for the ten bushels. Sow the oats, and next fall I will sell for you twenty bushels of your crop at \$10. That will be \$200. You will get your \$100 back and \$100 profit, out

of which you must pay me 25 percent commission, leaving you \$75 net profit."

The farmer never heard of making so much money out of so few oats before. In some cases the swindler even offers to buy the entire crop of the ten bushels of seed at \$6 per bushel. To prove his sincerity the swindler exhibits a blank contract, flashily printed in red and blue ink, of which the following is an example:

No.

CONTRACT FOR THE SALE OF HULLESS OATS.

I do hereby agree to buy from Mr.
of county of State of
All Hulless Oats raised from bushels of
said Oats purchased and owned by said on
or before the day of 188..
at \$6 cash per bushel.

This contract void if any of the rules governing the sale and purchase of said Oats (which rules are made a part of this contract) are in any way violated.

In testimony whereof I have hereunto set my hand the day and year above written.

Farmer A. is enticed into this beautiful scheme. He gives his note, and receives ten bushels of oats and the above contract properly filled out and signed by the swindler. When the following fall comes, and the crop is gathered, the swindler punctually fulfils his engagement. It is by no means his wish to appear in his true light yet. He is working for bigger game. If he has agreed to take the entire crop, he does so. If he has agreed to buy only twenty bushels, he does that. Then he calls upon the farmer to go among his neighbors and bear testimony to the swindler's square dealing, and the splendid opportunity offered of selling oats at a fabulous price. The neighbors, having every confidence in A., who probably believes all his praises of the smooth-tongued stranger, readily buy A's whole crop from the swindler in small lots of ten, twenty or fifty bushels. The swindler gets the cash if he can. If not, he takes Farmer B's note, made payable to Farmer A. If, for example, he has sold B. ten bushels, he gets B's note for \$100, payable to A. This he carries to A., who accepts B's note, and pays the swindler \$25 in cash as the commission agreed upon.

These farmers are all men owning acres of unencumbered land and other property. Their notes are perfectly good. The banks call them "gilt edged" and discount them readily.

When third year comes round, the swindlers do not come back, unless they think they can find enough victims to buy the crops of the second year's sets of dupes. Of course this process might be kept up for several years, but the second year usually sees all the swindler's contracts dishonored, the bubble burst and thousands of farmers pushed to the wall to meet the notes they have given and which are by that time in the possession of the county banks or of lesser speculators of paper.

We again caution farmers against having anything to do with parties tramping around the country on such business. There are plenty honest seedsmen in our country who furnish farmers with any new variety of seed that is worth testing.

I have found a whitewash that is, however, not exactly pure white, but one that will stick. It may be made as follows: Slake half a bushel of stone lime in hot water. When done, pour in two gallons of clear grease of any kind and hot water enough to thoroughly mix. Finish by adding enough water to make a barrel. For each gallon of the grease, a gallon of coal tar may be substituted with good results. The addition of the grease was suggested by seeing the brief statement somewhere that "potash and grease make soft soap, and soda and grease hard soap, and lime and grease insoluble soap." Some tree trunks treated to a whitewash made as above, subjected since to three or four heavy rains, retain it like oil paint.—[Cor. Country Gentleman.

PRIZE ESSAY.

Country Life.

BY BLANCHE AYLMEY, MELBOURNE, QUE.

Where shall we go for our summer holiday? The pros and cons are discussed, expenses of this place and that taken into consideration, the packing-up has come to an end at last, and you find yourself at a sea-side watering-place, or perhaps on the banks of a fresh water lake. Everything is delightful; the scenery, the fresh air, the new milk, the life out-of-doors. You boat, you bathe, you-fish, you lie in the hammock and read and smoke, and at the end of six weeks you go home invigorated, and you "really do think that country life is charming."

And do you know now what country life is? My friend, you have only got to the borderland thereof, let me tell you, and we country folk have exchanged many a smile over your ignorance and helplessness, although, I am free to confess, some of us have felt a sort of superstitious reverence for the untold wealth and unlimited "style" of the fortunate city man who, for a few weeks, has condescended to breathe the same atmosphere as ourselves.

Country life is indeed by no means "sweet idleness," as some people seem to think. We have to get up early and work hard, and we do not make money very fast. But we are happy, and some of us would be happier still were the fact recognized socially, that refinement becomes a country home, and politically, that the farmer's interests are the country's best interests.

First, we will begin with the children. Let nobody say that children brought up in the country have no advantages. At no time in the world's history has the question of educating children received such wide attention as it does at the present day. Legislatures and school boards and philanthropists are all occupied in discussing the best plan for making a child grow into an able man. In spite of many differences as to detail, all agree that a child's training should fit him for the practical work of life which is to come by and by. And so we are now to have mechanical and technical schools, and schools where science is to replace the classics. I am afraid some of these well-meaning gentlemen in spectacles look quite over and beyond the heads of our boys and girls, and forget that up to the age of 12 or 14 years a child's mind is capable of reasoning only up to a certain point, and therefore cannot absorb with any practical advantage a set of studies which require maturity of mind to understand. So that our town boy and our country boy must, after all, follow pretty much the school routine prescribed for their fathers before them.

But look at the contrast of their lives outside the school. A country boy of 12 years is pretty stupid if he does not know a great deal about horses, cows, pigs, fowls and all domestic animals. (His Natural History has had a good start). He can ride and drive and milk. He knows the names of all the trees and plants in the neighborhood, and what they are good for. He can plant potatoes and weed and hoe turnips and chop wood. (Botany means something besides long names to him). If he is a very bad boy and idle, he probably spends a lot of his time at the blacksmith's shop, or out fishing and bird-nesting, and trapping foxes and skunks. He can mend the gate and white-wash the fences as we all know from the reliable history of "Tom

Sawyer." Your city boy can only look on, and is lost in envy and admiration.

What possible training for a practical life can be better than this? It is the solution of all the problems that puzzle the brains of the Dominic Sampsons. When our country child becomes a man, he may be said to make his start in life with a laid-in stock of self-reliance, self-control and industry. Is he not, then, worth a little more attention in the way of a good school? For the want of that has probably been his chief disadvantage hitherto.

Why do not some of our cultivated families desire for their little ones such an education as the above, and bring with them into our rural districts the refinement and artistic taste which, alas! are rarely to be found amongst us? Art and culture ought to flourish best amid the beauties of nature, of which they are indeed but the outcome and the result. What can be more lovely than a refined country home? The lawns and gardens, the scenery, the sunsets, the whole-hearted and abundant hospitality, the freedom from conventionality—all these combine to produce both happiness and health, and an atmosphere in which virtue ought to flourish, and for which the excitements of the exchange and the theatre are but a poor substitute.

Carlyle foretold a time when the Saxon race would lose its vigor of constitution and its force of character, because in his day the minds of men began to be set on trade and manufacture, which crowded the cities, begetting poverty, wretchedness, sickness, deformity and vice. Let us stop for a moment and think of the myriads of human beings, living, dying, working, sorrowing and sinning around us. What is the only possible hope we can have of brightening a world like this? Is it not by pointing upward and onward to a place where we shall find rest and peace, a home which we call heaven? And how do we conceive of heaven? Is it of a place where there are smoky chimneys and noisy streets? Where the rich have homes of luxury and the poor are huddled in close and unhealthy tenements? I think the heaven we hope for is rather one where the Good Shepherd shall lead us through green pastures; where the river of life will bear us peacefully on its bosom; where all Nature will combine to worship its Creator under the life-giving and life-sustaining influences of a Sun of Righteousness.

But most of us are a long way from heaven yet, and we have our work to do, so let us descend from the metaphorical and speculative to the practical. Let us turn to our seed-time and harvest once more, to our hard but honest toil, rejoicing that our successful speculations are confined to the weather and the crops, and are not likely to prove a game of "beggar my neighbor," though they may bring with them no promise of accumulation of wealth and luxury.

Dear country life of child and man!

For both the best, the strongest,

That with the earliest race began,

And has outlived the longest.

Happy the man who tills the field,

Content with rustic labor;

Earth does to him her fulness yield,

Hap what may to his neighbor.

Well days, sound nights—O! can there be

A life more rational and free.

Do not use boards or other material to lay tiles on, but lay them on the firm, level bottom of the drain.

The Dairy.

Suitable Floors for Creameries and Cheese Factories.

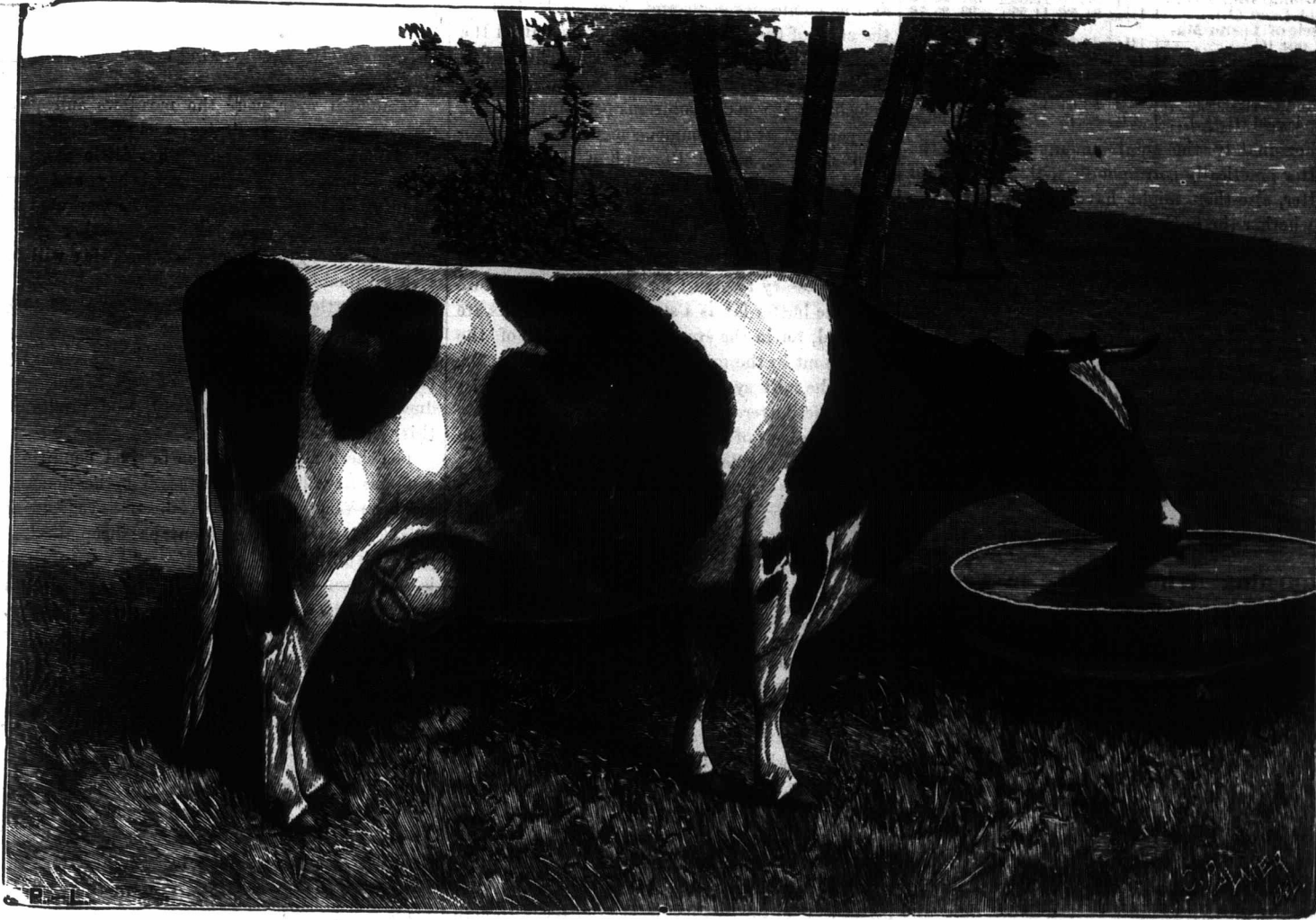
One of the chief faults which creamery and cheese factory floors possess is that they are constructed from material liable to absorb milk, whey, etc. These absorbed substances remain in the floor, and, after putrefying, emit, according to their quantity, a more or less pungent odor, which acts injuriously to the product manufactured. To avoid this, we must either spill no milk, whey, etc., or the floor must be of such a composition that it will not absorb these liquids. As the former can hardly be prevented, we must apply the latter remedy.

quickly. Leave the first coat somewhat rough, which enables the second coat to adhere better. The same material is used for the second coating, which should be thin and as smooth as possible.

The asphalt floor possesses a tarry odor which diminishes, but slowly, in the course of time. This odor, however, unlike that caused by decomposed organic matter, does not injure the quality of butter or cheese, but rather acts as a disinfectant. The same formula that is used for the construction of asphalt pavements in cities would answer for an asphalt floor, viz., coal tar, 10%; cinders, 42%; sand, 42%; resin and water-lime, 6%. Mix these materials well together and put on a coat 2½ inches thick. We do not, however, recommend this kind of floor, as it soon

A Sweepstake Holstein Cow.

As our readers know, we have not been in the habit of publishing records or performances of cows as they have been conducted for the past few years, for the reasons (1) the parties making the tests, although good practical butter-makers, had little or no knowledge of the science of testing, and (2) that the records themselves were such as to arouse great suspicion, mainly from the fact that the asserted percentage of butter from the milk given was three or four (or even five) times as great as should have been expected from average cows. These records, although published in nearly all the agricultural papers, were conducted in the interests of speculators, and so long as the owner of the cow knew more about testing than the person intrusted with the



SWEEPSTAKE COW, CLOTHILDE (1909), OWNED BY MESSRS. SMITHS, POWELL & LAMB, SYRACUSE, N. Y.

A floor should therefore be, firstly, non-porous, and secondly, it should have a gradual slope towards one point, where all water used for its cleansing may escape through a hole provided for that purpose. The floors recommended are: (1) those constructed from flag-stone laid in cement, or made entirely from cement, and (2) asphalt floors. The cement floors may be made either out of Akron or Portland cement. The former is preferable, as it is considerably cheaper and nearly as efficient. Lay on the foundation of the floor a layer of broken stone about the size of walnuts, and on these spread a first coat of cement. This is prepared by mixing, in their dry state, three parts of sharp, coarse sand with one part of the cement, and then water enough is added to give it the consistency of mortar. Do not mix much at a time, as it "sets" very

gives way, and is decidedly inferior to one constructed according to the following formula: Ten percent tar, 10 percent asphaltum, and 80 percent coarse sand, laid on 1½ inches thick. The cost of the former formula is about 50 cents per square yard; that of the latter is about the same, or very little more, while it is much preferable in every respect. Asphaltum is a material imported from Trinidad, West Indies, and costs about \$6 per barrel here. Brick floors are very objectionable on account of the absorbent properties of bricks, and those constructed of wood have the same objection.

A musty cellar is death to milk or cream, but it seems impossible to pound it into the heads of some people. More butter is ruined by bad cellars and caves than from any other cause on the farm.—[Prairie Farmer.

tests, the scope for fraudulent records was great, notwithstanding precautions taken by locks, seals, etc.

We pointed out at the time that these tests did not deserve the confidence of the farmers, in whose interests they were said to have been made, and we drew attention to the principles upon which these tests should be conducted. Fortunately, our directions have been followed by the leading dairy associations of the United States, and we now take great pleasure in publishing the results of the great cattle and dairy show recently held in New York. The records given in the subjoined table are so much below previous records of the breed that our suspicion has been well founded.

The chief interest was attached to the contest between the Holsteins and the Jerseys, a war

between these two breeds having raged for several years, and the sweepstakes were won by the Holstein-Friesian cow, Clothilde, owned by Messrs. Smiths, Powell & Lamb, Syracuse, N. Y. She is seven years old, and, as will be seen by the accompanying illustration, possesses the points and outlines of a good milker. Her weight is 1,571 lbs. Clothilde 4th is her daughter.

The following table gives the names of the cows and the results of the test (the letters H. meaning Holstein-Friesian, and J, Jersey):

NAME OF COW.	Yield of butter, lbs. oz.	ANALYSIS OF BUTTER.				Total fat in butter-oz.
		Fat per cent.	Water percent.	Curd by difference percent.	Total fat in butter-oz.	
Clothilde (H.-F.)	2 7/16	77.55	21.08	1.39	30.63	
Clothilde 4th (H.-F.)	1 1/2	81.51	17.82	.61	28.29	
Gold Lace (J.)	1 14/16	84.52	14.55	.93	25.78	
Jessie of Lester Manor (G.)	1 14/16	84.05	15.23	.72	25.64	
Meehtilde (H.-F.)	1 1/4	76.75	22.19	1.06	23.02	
Lady Fay (H.-F.)	1 10/16	81.36	17.01	1.01	21.52	
Hilda A 3d (J.)	1 9/16	78.38	20.80	.87	20.17	
Island Christie (J.)	1 3/16	83.65	15.43	.92	20.70	
Movike 3d (H.-F.)	1 2/16	82.18	16.45	.87	15.56	

Fortunately the total amount of fat in the butter practically corresponds with the yield of butter, else there might have been a dispute as to whether the butter or the butter-fat should be taken as the standard of valuation. It will be observed the Holstein butter contains more water and curd than that of the Jersey, and the quality cannot therefore be regarded as being so good, although it is not likely that butter experts, who act as judges at our exhibitions, could find any difference in the quality.

These tests are not yet as satisfactory as they should be, the yearly product and the cost of production being also demanded by our farmers; but we are pleased to see that the movement is in the right direction.

Churning Whole Milk or Cream.

Experiments conducted in Germany will not only give us light on this question, but will also tell us whether it is more profitable to churn thick or thin cream containing the same amount of butter-fat. But before consulting these experiments we will give the merits and demerits of the two systems, as far as the operation and the by-products are concerned.

The principal point that can be urged in favor of whole milk churning is that the entire process of setting and skimming the milk, with the mistakes liable to be made here, are avoided, which not only greatly diminishes the labor, care and attention, but also decreases the actual expenses, for no pan, cold water, ice, separator, uniform temperature, etc., necessary in some one or another of the skimming methods, is required. The whole milk churning system can be conducted in a smaller room than the cream churning, which also lessens expenses. The objections against the above method are that no skimmed milk is obtained, for all the milk is converted into buttermilk, which, generally speaking, is of less value than good, sweet skimmed milk. Another objection is that more work and generally more time are required to churn the whole milk.

A prevalent opinion is that churning whole milk will produce more butter, because, in the skimming process, there is a portion of the fat left in the skimmed milk, while in the whole milk churning, all the globules are subjected to the churning process. This opinion is no doubt correct if the skimming has been incomplete.

But it must be remembered that even in the churning of the whole milk a portion of the small globules are left unchurned in the buttermilk, and as these small globules are also those left in the skimmed milk, the above theory or opinion loses much or all its power when the milk is properly skimmed.

The experiments spoken of before were conducted in the following manner: Portions of milk were divided into two equal halves. One of these was set in shallow pans at a uniform temperature, varying in the different experiments from 50° to 53.5° F., and skimmed 36 hours after it was set, when it was still perfectly sweet. After this the cream was slightly soured, and then churned for 25 to 55 minutes with a velocity of 195-240 revolutions per minute. The temperature of the cream was between 60.8°-62.6° F. at the commencement, and from 61.7°-64.4° at the close of the churning. The other half of the milk was, after turning slightly sour, churned in the same churn in from 35-65 minutes, with a velocity of 185-200 revolutions per minute. The temperature at the commencement was between 62.6°-66.2° F., and at the end of the churning between 65.3°-68° F. The result of these experiments was that in the creaming system 30.35 lbs. of milk were required to make 1 lb. of butter, whereas only 28.76 lbs. of milk churned as such were necessary to give 1 lb. of butter. But if we take the butter-fat as a standard, the results are reversed, for in the cream method 86.9% of the fat present in the milk was churned into butter, while the milk system only showed 82.5% of its fat in the butter.

The analysis of the unsalted butter is given in the following table:

	ANALYSIS OF BUTTER.				
	Fat in Butter, percent.	Casein, Milk, Sugar, etc.	Salts.	Water.	
Butter from milk	79.9	3.4	0.2	16.5	
Butter from cream	83.8	2.1	0.1	14.0	

The keeping qualities of the butter is reported to be the same in both cases.

These experiments show that with good management there is more fat left in the buttermilk where the whole milk has been churned than in the skimmed and buttermilk combined, when cream has been raised and churned.

As it is butter-fat we want in butter, and not water, casein, etc., it is evident that diluting the cream before churning it is injurious and not beneficial to the quality of the butter, although it may increase the quantity. Diluting cream adds water to the butter, and diluting milk adds water to the milk. What is the difference?

From the above experiments we conclude that the best quality of butter may be made from thick cream.

A Pennsylvania farmer gives a novel device as a remedy for kicking cows. He places three posts in the ground in such a manner that when strips of boards or bars are fastened in them, a triangle is formed. The bars are attached to the post about the height of the cow's legs. The cow is placed into the inclosure with her hind legs against the post at which two of the bars meet to form an angle, while the cow's head, or rather the neck, is between the other two posts. In this manner the hind legs are wedged between two bars, which prevents her from kicking, and she can be milked under the bar which runs along her right side, holding the pail outside of the bar.

Stock.

A Chatty Letter from the States.

[From our Chicago Correspondent.]

Beef cattle are selling in Chicago at \$3.10@ \$4.25, with a few double extra bullocks at \$4.35 @ \$4.50, but by far the bulk of the ripe 1,300@ 1,600-lb. cattle are just now selling at \$3.75@ \$4.10.

Many cattle raisers are being badly discouraged and are getting out of the business, but one would be surprised to find how many men there are who have philosophically resolved to grin and bear it—to take the bitter with the sweet, believing that the glut and depression cannot last always, and that when everybody wants to sell is a better time to be a buyer or a holder than a seller.

As much as they prate about the extreme low prices for cattle, beef growing is still more profitable than wheat raising.

Seldom, if ever, were the meadows and pastures of the Western States so badly burned by the sun as they now are. What little grass is left is as brown as perfectly cured hay, and cattle in many sections have had to be marketed in bad condition, because there was neither grass nor water enough to support them. Hay will be a very valuable crop this year.

Texas cattle have been selling here at \$2.40@ \$3.60 for steers, and \$1.75@ \$2.50 for yearlings and cows. They have been selling relatively higher than any other kind of cattle, and producers say they can make fairly good profits at this year's prices.

The sheep market has been in good condition. Supplies have been quite large, but the demand has been very good. Texas sheep have sold at \$2.75@ \$4. Oregon and Montana sheep at \$3.40 @ \$4, with States sheep at \$3@ \$4.40. As there is a big corn crop in the west, it is expected that there will be an immense production of choice, fat sheep the coming winter. Some old dealers think it will not be overdone, however.

The July hog market was very strong and active, and prices advanced to \$5.50@ \$5.65 for choice hogs before the middle of the month. The quality of the offerings was remarkably good, there being not a few choice porkers averaging 300@370 lb. The advance in prices was due of course to the very light receipts, which in turn were caused mainly by a light crop, but partly by the excessively hot weather, which made it very difficult to move hogs. When the market is steady and strong, and prices are rather on the up grade, producers are never so nervous about getting to market. The current prices for hogs are 50c. higher than one year ago.

Texas stock cattle would be very popular, because so cheap, if there was not danger of the so-called Texas fever.

The pleuro-pneumonia excitement about here has all subsided. A good many old cows have been killed and found to have something the matter with them, but if the real "old fatal" pleuro-pneumonia had been abroad in this section, as many have been led to suppose for the past three or four years, there would not to-day be so much of an overproduction of cattle.

Much to the surprise of everybody the receipts of cattle in the latter part of June and in July continued to be largely excessive. In one week 53,027 cattle were received, being the largest number ever known before. The fact was all the

more remarkable as the big run was made up mainly of ripe, corn-fed heaves of the finest average quality ever known, while the previous big run consisted mainly of light grass cattle from the far west.

While hogs on very light receipts have sold the highest in several months, cattle on the largest receipts ever known have sold the lowest in many years.

Mr. T. Crawford, of Canada, bought a couple of boat loads of export cattle at Chicago in July, at about \$4.10@4.30—very low for such cattle; but when was the English cattle market ever so low before? When the price of export cattle here was down to \$4.25 about nine years ago, cattle were selling 3c. to 5c. per lb. higher in Liverpool than at present.

Exporters shipping on ocean rates contracted in the spring are losing money heavily.

Pennsylvania, Ohio and Virginia cattle feeders have suffered heavy losses this year, as they had to sell their beef bullocks at much less per lb. than they cost as store cattle.

A man just in from the Wyoming ranges thinks the beef crop from that section will be as large as last year, but reports a great shortage in cows, calves and bulls, which means, of course, a great curtailment in supplies for the future. At the same time there is not the least danger that there will be any remarkable reduction in cattle production very soon. There are too many men at the business. At the least calculation there are four men raising cattle now where there was one eight years ago.

The statistics show that in America double as many cattle are being consumed as were being used ten years ago.

The mania for cattle ranching had to run its course, and it has lately had a pretty thorny course to travel. They are coming to the conclusion now that the big consolidated cattle companies cannot raise cattle so profitably as the smaller ones or as individuals.

Stock Diseases in Britain.

Reports from various quarters in the United Kingdom still point out the necessity for the exercise of caution in the importation of stock from Britain. Investigations as to the causes and remedies seem to be making little headway, and the prospects of a material reduction in the outbreaks of contagious diseases are not encouraging. Reports as to the prevalence of stock diseases in the United States are very unreliable, it being a "job" amongst the "cow-doctors" to create as much alarm as possible in order to increase their prospects for larger drafts upon the national treasury. Happily, there is no cause for alarm in our own country. With reference to the state of affairs in Britain, Prof. Brown, in a report to the Royal Agricultural Society of England, sums up the matter as follows:

PLEURO-PNEUMONIA.—In the four weeks ending April 30th, forty-seven outbreaks of this disease occurred in Great Britain, and 246 cattle were attacked. Of these outbreaks, seventeen were in England and thirty in Scotland; and of the cattle attacked, only seventy were in England, and the remaining 176 in Scotland. When compared with the returns for the corresponding period of last year, there is the same number of outbreaks in Great Britain, with a decrease of six in the number of outbreaks in England, and an increase of six in Scotland. With regard to the cattle attacked, there is an increase of seventeen in Great Britain, with a decrease of sixty-one in England, and an increase of seventy-eight in Scotland.

SWINE FEVER.—During the four weeks above referred to there were 665 fresh outbreaks of swine fever reported in Great Britain and 3,482 swine attacked, of which 966 died. This is an increase over the returns for the corresponding period of 1886, when the outbreaks numbered 353, and the swine attacked 2,127.

ANTHRAX.—There were twenty-two fresh outbreaks of this disease reported and ninety-nine animals attacked by it during the four weeks mentioned above. These outbreaks occurred in the counties of Chester, Derby, Essex, Hants, Lincoln (ports of Holland), Norfolk, Northampton, Notts, Sussex, York (W. R.), Isle of Ely, Banff, and Edinburgh.

A reported outbreak of anthrax, chiefly affecting swine, on a farm at Aston, near Warrington, has excited a great deal of attention. The evidence on which it was concluded that anthrax existed is not satisfactory. An organism having the general character of the *Bacillus anthracis* was detected in the blood and tissues of two of the animals which died, portions of which were sent to the Agricultural Department, but the inoculation test failed in this and every other instance. It is therefore certain that these bacilli were not the bacilli of anthrax, but some of the non-specific, harmless forms of those organisms. It may be added that the morbid appearances in several of the pigs which were examined were indicative of swine fever, and ultimately the local authority caused all the diseased swine and those in contact with them to be slaughtered as affected with swine fever.

The Dominion Shorthorn Herd Book.

Editor Farmer's Advocate:

SIR,—The first volume of this work is now in the hands of members. The editor in the preface to the work endeavors to reduce all Shorthorns not registered in it to the level of grades, and claims every animal registered in it pure Shorthorn.

We are told "that the English book is the parent of all Shorthorn herd books, that its standard is four crosses from registered sires for females, and that doubtless any animals now admitted spring from old stock owned by gentlemen of a conservative state of mind who would not record their animals when they could have done so."

Is the editor justified in drawing this conclusion? Cannot any man who can show four certified crosses from registered sires—even if the first of the four was made upon the worst cow in all England—demand registration in the E. H. B., according to the standard? Have we ever in the history of Shorthorns in Canada, lowered that standard, with the exception of those animals imported from England, whose breeding is unknown, and are not registered in the E. H. B., and others the names of which appear in the E. H. B., but the numbers are withheld, showing that they were not recognized as pure bred Shorthorns by the E. H. B. authorities, which animals now, for the first time, are registered, numbered and claimed as pure Shorthorns.

A history of American books is given, and considerable space is given to "extracts from the proceedings of a convention of Shorthorn breeders," held in Indianapolis, in 1873, to show that at this early date the first battle was fought for the protection of the purity of Shorthorns. A committee was appointed at this convention which brought in several resolutions, the third of which was: *Resolved*, "That the ancestry of the animals should trace in all crosses to imported animals to be entitled to registry."

After the convention had discussed this resolution an amendment was proposed—*third rule*—"That the animals should be traced on both

sides to imported animals, or those heretofore recorded in the American H. B. with pedigrees not false or spurious." The editor says: "We see Canada was represented at that convention; why did not our representative learn the lesson then that a change would have to be made in Canada?" What lesson should Canada's representative have learned from that convention? He saw that an effort had been made to interfere with the rights and privileges of a number of animals registered in the American H. B., but that the convention had decided to respect the rights of those animals. It can hardly be supposed that the breeders of these animals were in the majority, but that they determined to do justice by those animals, and, moreover, they did not wish to shake the confidence of the American public in public records, and established the principle of an animal being once registered as a Shorthorn it was always a Shorthorn, until its record was proved spurious.

In 1882, all the herd books in the United States were merged into one, the "A. S. H. Breeders' Association," whose standard was and is, "that an animal must trace on the side of sire and dam to imported English Shorthorns, or pedigrees not false or spurious already recorded in the herd books published heretofore in the United States." And yet the editor says he has been informed that many breeders ceased recording their animals previous to 1880 in the Canada H. B., because the standard was too low, when it was at that time as high as the English, and the Americans ratified their "then on record" standard in 1882. Who were these breeders, and where then would they record?

Again, we are told that the "friends of the short crosses were conspicuous by their absence, at the first meeting called in London, in 1881, by the Council of Agriculture, to consider the raising of the standard." Who are the friends of the short crosses? Can any one examine this volume and form any other conclusion than that the present association is the friend of such?

Again, we are told that all animals not tracing in all crosses to imported stock can not be proved to be anything but grades from Canadian cows. Were not these animals up to the English and Canadian standard of purity at the time of registry? Either they are Shorthorn, or the animals registered in the D. H. B. of a similar length of known breeding, are grades. The association can choose either horn of the dilemma.

In conclusion, the editor, I presume, speaking for the association, pretends to have a "sincere sympathy for those whose animals are unfortunately not up to the standard." "This is the most unkindest cut of all." Let me tell the association that men as well as associations are judged by their works, not by their professions, and I fail to find one grain of sympathy in this whole preface other than this mere profession, but do find an endeavor to reduce the standing of all animals not registered in it owing to its discriminative standard.

There are other points I fain would have touched upon, but I fear I have trespassed too much upon your valuable space.

I am, respectfully yours,

R. J. PHIN.

Elphinholme, Moosomin, N. W. T., July 15th, 1887.

A correspondent of the Country Gentleman states that he has received good results by sowing oats on the snow early in spring.

Practical Swine Breeding.

Whether bred largely for market purposes (says a correspondent of the Rural World), or bred to supply the demand for choice breeding stock, there are certain principles in swine breeding to be adopted and put into practice to insure success, and these principles hold good in either case, as far as producing large litters of fine porkers are concerned, and then in forwarding these porkers in such a manner as will produce vigorous, healthy and profitable growth, the selection of breeding stock is of first consideration, and mere pedigree or purity of blood will not always suffice. We always look first for individual excellence, and then, if necessary, hunt up the pedigree, if we are breeding pure-bred stock. In either case, when we choose a boar, we first see that he is healthy, and then examine him in detail. We want a comparatively short and rather broad head and snout, with full jowl and moderate sized ear. A good sized ear generally denotes a quiet disposition, but this matter of ear is determined very much by the breed, the Chester Whites having large and lopped ears, while the Berkshires and some of the other breeds have small, fine and "prick" ears. The shoulders should be well developed, and set well apart to give plenty of lung power, while the back should be broad and approaching straightness, giving plenty of loin. The ham should be heavy and full, while the legs should be strong, firm and well set under. Any weakness in the legs is a great objection to a breeding pig. In a breeding boar we look for a rather short, stocky animal, close made, and with as little waste as possible. In the breeding sow we look for more length—we want a long, roomy animal, but with the other characteristics well developed as in the boar. From such couplings we naturally look for large litters and fine young pigs.

Do not use a young boar for breeding until he is about seven or eight months old, and never permit sows to be served until they are at least six months old. Some breeders have sows dropping their first litters about that age, but this is a great mistake, as it dwarfs the sow, and the little time thus gained is lost many times over in the decreased number of pigs at subsequent litters, and in having less vigorous porkers. Keep the boar away from the sows until the proper time to breed. It is a very bad practice to have the boar and sows running constantly together in one enclosure.

A breeding sow should have plenty of nourishing food, such food as will cause a healthy growth and development without inducing the laying on of surplus fat, as a fat sow usually has difficulty in delivering. The food given should also be of such a nature as to prevent constipation, especially just before she is due to farrow. Breeding sows should have roomy pens, so they can take plenty of exercise, as they need it more than those porkers fed for the butcher. Plenty of clean, fresh and well broken straw should be supplied, and just before she is due to farrow do not put any fresh straw in the pen, and do not have too much of a bed for her, or some of the pigs may become entangled and crushed. Do not disturb the sow while she is farrowing unless absolutely necessary. As soon as she has farrowed, give her a moderate allowance until she has a full feed. You can now give food freely, for she needs it to keep up her supply of milk for her rapidly growing and always hungry offspring. To afford the porkers plenty of exercise, have a small hole cut

in the pen, near the floor, or have the bottom rail of the pen just high enough for the porkers to go in and out at will, and they will take advantage of it and be healthier for the liberty.

Until the little pigs are about two to three weeks old the sow will supply all the food they need, but after that it becomes a great drain on her and she cannot furnish all they require. To supply the deficiency have a small, shallow and firmly set trough just outside of the pen where the sow cannot get at it. In this, about three times daily, put a supply of milk, and the pigs will soon learn to eat it. Always clean out the trough thoroughly if the pigs have not done it, before putting in a fresh supply of milk. The quantity must be increased as the demands of the porkers require it, and at eight weeks old they will be of good size and old enough to be put into a separate pen from the sow, or they can safely be shipped long distances to customers. There is a great difference in the motherly qualities of sows, and when a breeder finds one which produces uniformly large litters and all fine, strong and healthy pigs, while she has a constant and large flow of milk for her offspring, he should keep her for breeding purposes as long as she will breed well, and she will be found to be the most profitable animal on the farm. She will average nearly or quite two dividends a year, and when from six to ten pigs come at a litter it can readily be seen where the profit comes in.

One of the best feeds we have ever tried has been a slop made from corn and oats. It is ground in the proportion of about one bushel of corn to two of oats. The slop barrel is made nearly half full of this, adding a large handful of salt and about a peck of fine bits of charcoal, procured by sieving out the wood ashes, and then the dry stuff is covered with scalding hot water, the lid of the barrel being then put on to give the mass a thorough steaming. Next morning cold water enough to fill the barrel is added and the slop fed to the pigs. It makes them grow wonderfully fast. We have fitted pigs for exhibition on this food alone much quicker than on any other food we have ever tried.

Prof. Wallace, of Edinburgh University, has also taken up his pen against the "early maturity" mania, and says that "like most hobbies it has been ridden too hard." The leading authorities are now against the craze, and it is noteworthy that the *ADVOCATE* was the first to point out the evil consequences. There is a commendable phase of the question, beyond which we cannot go, but the extent to which it has been practiced is extremely ruinous and absurd.

An American journal makes the following allusion to the cow doctors in the U. S.: "The State and National cow doctors get \$10 a day each for declaring that the country is infected with disease, and their pay continues as long as they can keep up the absurd panic. They have a direct, sordid interest in promoting the damaging conspiracy against the cattle industry, and they ply their mischievous vocation with zeal." The *Drovers' Journal* on the same subject says: "The United States treasury can lose \$500,000 without feeling it particularly, but the mischief that the pleuro-pneumonia ringsters will do while they are squandering the money is the serious part of the consideration. The widespread loss to the cattle interests of the country by the racket which they must keep up for the purpose of having a pretext for drawing the funds, will be seriously oppressive." These are called expenditures made for the benefit of the farmers, and who knows when a similar farce may be imposed upon our own farmers?

Should Horses be Watered Before or After Feeding?

The safe and suitable time for watering horses depends a great deal upon what they have been used to. Throughout Scotland farm horses generally have as much water as they care to drink upon returning from work, and before being stabled and fed. Many horses, whether ridden or driven, are allowed to slake their thirst at any pool, stream or trough passed on any ordinary journey. And such practices do not lead to more gastric derangements than the method still adopted by some English horsemen of greater restriction as to water, limiting especially the supply when the horse is brought in from work or is on a journey. Horses accustomed to such treatment, if allowed to drink as much as they please, might probably indulge too freely and overfill their stomachs, unused to such liberal libations. The rational practice is to let horses have the opportunity of drinking sufficiently often to prevent their being very thirsty, and hence drinking to excess. In hot weather, and during active exertion, horses enjoy, and are the better for, a draught of water at intervals of three or four hours. On their return from work they should have the opportunity of drinking, and unless abstinence has been protracted, or the animal much fatigued or overheated, or constitutionally washy and delicate, there is no need to restrict them. Cold water does no harm except in very cold, wintery weather, when a portion of hot water should be run into the horse troughs, or the water, in buckets, placed for several hours in the stable. Refreshed by his drink, the horse will feed better than if he proceeds to his meal thirsty and languid. Postponing watering until after feeding has, moreover, the serious disadvantage of washing the recently-swallowed, imperfectly-digested food with abnormal rapidity onward through the intestines, thus checking digestion, giving rise to irregular fermentation, and inducing colic and other ailments. Although he may advantageously have a few sips after feeding, a horse should not then be allowed to gulp unlimited quantities of water, and, indeed, does not care to do so if he has had his drink before he began his meal. For horses, as well as for their masters, the best arrangement is to have water for use in reasonable amount at all times. This is secured in many stables, where a slowly-filling trough of about a gallon capacity is fixed in the manger, and to this the horse turns at intervals with avidity before feeding, occasionally during mastication to assist the moistening of his dry food, and with diminished zest to wash his mouth on conclusion of his meal.

A CURE FOR KICKING COWS.—Tie the cow by the head, using a stout halter with a ring under the chin. Get squarely behind her—she cannot kick you—and fasten a stout cord to the pastern of each hind foot. Run these cords forward through the latter ring and back, convenient to your hand when milking. When the cow lifts a foot to kick, pull the cord, thus drawing her foot towards her jaw and throwing her off her feet. When she gets up and attempts to kick again, repeat the pulling. Treat her kindly, but whenever she lifts a foot to kick jerk the cord with all your might. Stout, wild heifers that had never been milked before, or had a man's hand on them except when they were branded, were in this way broken in an hour, and never attempted to kick afterwards.

Garden and Orchard.

Management of the Orchard.

BY HENRY IVES, BATAVIA, N. Y.

One of the most practical sources of knowledge gained at our farmers' clubs comes through the friendly criticisms given by members, who, with different condition of soil or climate, or owing to some local cause, have had an experience more or less at variance with that given by the leader of the subject under discussion. On the same principle, if you will please excuse any difference that climate or location might make, will you allow me a few words of criticism on orchard management in essay by K. Sutherland, and, first, as to locating the "site" to plant it on.

I consider it of so much importance to have the orchard near to the farm buildings, and, if possible, on that side which will cause it to shelter them and the garden, and, if practicable, also the lawn, from the prevailing winds of that locality, that if the "slope" of the land, or the "nature of the soil" really required the orchard to be planted in some out-of-the-way corner of the farm, I should want to place the farm buildings there two. Secondly, after saying "if possible," select a certain slope of land, he goes on to say, as I should, that perhaps the advantage of one slope over another is "very slight." But he is more definite and decided as to soil, and here his advice does not all tally with my experience. He says, "a deep, dry, sandy loam should be selected to give the best results," and the first thing to do with it is to "drain, manure and subsoil the land." I say yes to the manuring every time, but as to draining and subsoiling this kind of land, it is quite absurd. It reminds me of a statement Horace Greeley made at our county fair over 30 years ago; as he stood facing the east, he spread out his hands, saying that every acre of all these lands ought to be underdrained, and that saying has been a standing joke with the farmers of that region ever since; for they are made to realize nearly every season that their deep, dry, sandy loam (of which nearly every acre is composed) is a little too much underdrained by nature, and that "subsoiling" at least does it no good. The writer has had the experience of planting and growing two or three orchards, on the grounds referred to above, and can say that although the trees planted in such soils will make a more rapid growth, look more healthy and thrifty until attaining their growth, and also come into bearing earlier than those planted on heavier land, still their fruit lacks in richness, in firmness and in keeping qualities, and the trees themselves will mature and die early, not lasting more than $\frac{1}{2}$ to $\frac{2}{3}$ the age of orchards planted on soil with a good clay, or at least a firm subsoil. In fact, the farmers of this region freely acknowledge that the cheaper lands away north or south of us having a clay subsoil, and underdrained where it needed it, can beat us in growing apples.

Your essayist says the distance apart for planting the trees will depend on the "amount of land at your disposal." I should say plant your trees a proper distance apart, only letting the amount of land to be used determine the number of trees to be set out. I believe, too, that the Northern Spy wants as much room as the Greening; but nature develops the tree sky-word to give it plenty of light and air, without which its fruit is pithy and poor. I never should think of plant-

ing out "medium sized" apple trees, in setting an orchard which, of course, would need staking, or care even for the largest of the nursery stock offered for sale; but take a thrifty young tree, which will not need "staking." I don't know that anyone can give better advice than your correspondent as to manuring the orchard, and tilling it with the growing of "low hood crops." I specially like his advice as to keeping the orchard pruned, and in after years by seeding down and pasturing.

In the case of coming into the possession of the old and neglected orchard, he and I are of one mind about removing them—root and branch, though my method is different from his. It would cost two or three times as much to do it by first cutting the trees and then removing the stumps; but after removing three such orchards, root and branch, I can say that it is much easier and cheaper to first take up the tree by the roots. But as for ever trying to save and renovate an old orchard, I never would advise to do it, more than to make it answer the purpose of fruit supply for a few years more, while a new orchard is being reared to take its place. At its best the plan of grafting is expensive, usually costing much more than new trees from the nursery of the kinds wanted, and where the first is of only a temporary advantage, the latter plan will give all that an orchard is capable of giving, if it is properly managed. Another great inducement with me for planting a new orchard to take the place of the old one, would, in most cases, arise from the fact of the old one not being located, as indicated above, near to the farm house, and to the windward of it, according to the prevailing winds, for I believe that the advantage derived from this alone is enough to pay one for all the expense of growing an orchard so located as to secure from it all these advantages.

Fruit Evaporation.

Evaporating fruit is as much a trade as tanning leather, and requires a long experience and close study. It has been a god-send to horticulture and to the human race, by converting thousands upon thousands of bushels of fruit every year into wholesome and delicious food which would otherwise have been lost. Farmers all through Western New York find that evaporators suited to their needs pay better than selling the green fruit, and far better than making it into cider to prove only a curse to the consumer. The chief points of "difference between evaporated and dried fruit" are: that the evaporated when pared and sliced, is subjected to a few minutes' exposure to a sulphurous gas, to prevent discoloration, and the rapid chemical changes which go on in fruit (especially apples), when fresh-cut and exposed to the air, and which, if allowed to proceed, would quickly alter and impair the quality of the fruit; and, second, further arresting the action of the air by rapid evaporation by exposure to a high heat.

There is no "best evaporator" for every situation. For one who works in a small way, evaporating from twenty to fifty bushels a day, a small straight flue for confining hot air so it must pass through the prepared fruit, with or without means for elevating the fruit, with heat generated in a stove or furnace in a pit or cellar beneath the flue, will give the most satisfactory results. For those who would work on a larger scale, steam heat from a higher pressure—eighty or ninety pounds—is undoubtedly cheapest and

best; it will dry fruit in half the time it can be dried in a flue with hot air, and the fruit will be very much better; but for a small amount of drying steam will be too expensive. The Williams, the Alden and numerous other evaporators give good satisfaction. It will be pretty near the truth to say that an evaporator may fairly be expected to cost \$5 for each bushel of apples it will dry per day. In building or purchasing especial pains should be taken to guard against liability to fire. Frequent fires have proved the bane of the evaporating business. The "running expense" in labor and fuel for evaporating apples at Rochester, N. Y., is 10 to 12 cents a bushel; raspberries, 4 to 5 mills per quart; peaches, 25 to 35 cents a bushel. In a large way it cost less than in a small one.—[Prof. Arnold, in N. Y. Tribune.

The Codlin Moth Plant.

We extract the following from the "Horticultural Times," published at Covent Garden, London, England:

"Mr. H. C. Field, of Wanganui, has forwarded to Mr. T. F. Cheeseman, of the Auckland Museum, some flowers of a plant called *Physianthus*, which is recommended for planting in apple orchards to check the increase of the codlin moth. The plant is a twiner, and blooms through the whole of the summer and autumn. The flowers are whitish, rather handsome, and very sweet-scented, producing abundance of honey, and are thus very attractive to moths of all kinds. In order to reach the honey the proboscis of the moth has to be passed through a narrow cleft, which is so shaped that, although the proboscis can be inserted readily enough, it is by no means an easy matter for the moth to withdraw it. As a matter of fact great numbers of moths are unable to remove the proboscis, and are held prisoners at the entrance of the flower until they die. It has thus been suggested that if plants of the *Physianthus* were trained up the trunks of the apple trees, numbers of the codlin moth would be captured and killed. The plant is a native of South America. During the whole of the past summer the flowers were loaded with dead moths. The flowers sent by Mr. Field to Mr. Cheeseman all contain dead moths."

We should be pleased to know which of our seedsmen will be the first to test this plant in our climate.

TIME TO CUT POST TIMBER.—Jerry Sexton, Ames, Iowa, says in answer to inquiry when to cut timber for posts: Cut in early summer, when the leaves are nearly full grown, and let them lie six or eight days before trimming. The foliage presents a great area of evaporating surface, which draws the sap or moisture out of the trunk. If the moisture is taken out in this way, there is less tendency for the wood to check, and it will last much longer. It is best to split and rank the posts up immediately after trimming off the limbs. This method has proved successful in Europe, where it is generally followed in government forests.

An exchange says: Sheep in orchards are better than swine to eat fallen apples infested with insects, as they are more thorough and vigilant in picking up and devouring all that fall; they do not, like swine, leave the small and wormy ones and take the best, but eat all alike, and they never root up the ground of the orchard. Thus says a contemporary. It should not fail to note the caution, however, that sheep are capable of doing great damage in orchards in spring or late fall, when they will eat young tender shoots or gnaw the bark. Sometimes an orchard will be almost ruined in this way.

Our Fruit Prospects.

Mr. A. McD. Allan, of Goderich, President of the Ontario Fruit Growers' Association, who recently called at our office, gave us some interesting items about our coming apple crop. Mr. Allan is the king of shippers in the apple business, as well as an extensive grower, and last year he shipped over 120,000 barrels.

He gives a glowing account of this year's crop. In this section and through Kent and Essex the crop is very heavy, and exceeds the crop in the eastern counties. He makes special mention, in favorable terms, of the following popular varieties: R. I. Greening, Baldwin, Am. Golden Russet, Ben Davis, King of Tompkins, Fallwater, Twenty Ounce Pippin, and Ribston Pippin. He speaks favorably both with reference to the quantity and quality of the crop, and says that the large crops in England, Holland and Denmark will not, to any appreciable extent, affect our sales, for their crops are earlier, and our reputation is now so firmly established that our apples are preferred to those grown on the continent. The spot on the apple, he informs us, has mostly disappeared, and the codlin moth is not doing so much damage as formerly. He says the prospect of the grape crop is very encouraging.

Forestry Legislation.

Much discussion has arisen as to the best methods of encouraging tree-planting in Canada, but we have not as yet made satisfactory progress. A knowledge of the encouragement given by other countries may be some guide to us in this important branch of husbandry. A writer in the Rural World furnishes its readers with a synopsis of the laws passed by various States of the American Union:

From the earliest settlement of the country, almost, we find laws enacted for the protection of woodlands and forests, especially from the ravages of fire. But it is within a recent period, comparatively, that laws have been passed designed to secure the planting of trees, and these laws are confined for the most part to the Western States, which are lacking in trees, or to those States which originally abounded in trees, but in which the forests have been largely consumed by the manufacture of lumber. The Southern States, most of them, are still well-wooded, and have as yet felt no need to take measures to increase their supply of trees.

In *California*, by an act of 1868, the Board of Supervisors of any county are empowered to authorize the planting of shade and fruit trees along the public roads by persons owning the adjacent lands, and persons planting such trees according to the regulations of the Board, are entitled to receive one dollar for each tree so planted and found growing thrifly four years after the time of planting. Recently a Forestry Commission has been appointed and a beginning made to establish an experiment station on a plot of thirty acres, for the purpose of testing the growth and character of various trees for the purpose of encouraging forest tree-planting.

Colorado has the distinction of being the only State having a provision in her Constitution for the promotion of forestry. The 18th article of the Constitution makes it mandatory upon the General Assembly to enact laws to prevent the destruction of and to keep in good preservation the forests upon the land of the State or upon the land of the United States which Congress

may place in the control of the State. The General Assembly may also provide that the increased value of land caused by planting trees upon it shall not be taken into account for a certain number of years, in assessing such lands for taxation. *Colorado* has also adopted recently quite advanced and noteworthy legislation in behalf of forestry. A forest commissioner is appointed who has the care of all woodland owned or controlled by the State. He is to make rules and regulations to prevent trespass upon such lands, for the prevention of fire thereon, and for the conservation of forest growth. He is to promote the gradual extension of the forest area, encourage the planting of trees, and preserve the sources of water supply. County Commissioners and road overseers are also to act as conservators of woodlands, and to encourage the planting of trees. Persons injuring or destroying trees are liable for thrice the amount of damage done, and in case of malicious injury may be prosecuted also for misdemeanor. Whenever a line of forest trees shall be planted in a specified manner and kept in growing condition for three years, a premium is to be paid annually for six years to the owner of the land so planted, of two dollars for every one hundred trees, provided the trees are kept so long in growing condition. The gain in value of land under irrigation on account of planting of trees upon such lands is not to be added to the assessment within ten years after the trees are planted.

Connecticut in 1877 made a provision for a report on forestry. In the same year a law was passed that planted woodlands which at the time of planting were not worth more than \$15 an acre, should be exempt from taxation for ten years. The Board of Agriculture was also requested by the last legislature to report what legislation is necessary to prevent the destruction of forests or to encourage the planting of forests in the State, and what can be done for the protection of forests located near the sources of streams. By an act of 1881, a bounty was offered of one dollar for every line of trees planted on the highways not less than one-fourth of a mile in length, and cultivated for three years. The bounty is to be paid annually for a term not exceeding ten years.

Illinois, more than ten years ago, passed a law for the encouragement of tree-planting and the growing of timber by allowing the Board of County Supervisors to offer a bounty to any one who should plant one or more acres of forest trees and properly cultivate them for three years. A sum not exceeding \$10 per annum for three years was to be given for each acre.

In *Iowa* the property of any tax payer who plants and suitably cultivates one or more acres of forests trees for timber, is exempt from taxation to the amount of \$100 for ten years for each acre so planted.

Kansas has a similar law, but it has been repealed because a bounty for tree-planting is thought to be no longer needful.

Maine had been one of the first four States to legislate in behalf of forests. In 1872 a law provided that any landholder who should plant or set apart any cleared lands for the growth and protection of forest trees, within ten years after the passage of the act, and cultivated the same for three years, the trees being not less than 2,000 to the acre, the lands so planted should be exempt from taxation for twenty years. The act also encouraged the planting of trees along high-

ways by a similar exemption, and also provided penalties for the removal or injury of trees thus planted.

In *Massachusetts*, the agricultural societies receiving the bounty of the State are required to offer premiums for the raising and preserving oaks and other trees best adapted for ship-timber. In 1882 the State authorized towns and cities to provide for the preservation and re-production of forests. They may take or purchase any land and make public domain of it. The State Board of Agriculture is also to act as a Board of Forestry and have the supervision and management of all such public domains.

Michigan, which is cutting off her rich growth of forest with fearful rapidity, has done nothing to replace the trees removed. She has encouraged, however, the planting of trees along the roadside by allowing anyone to pay 25 percent of his highway tax by planting trees on the margin of the road adjacent to his own land. By an act in 1881, any one injuring such trees is made liable in an action for damages from \$1 to \$25, for each offence.

Minnesota, in 1871, passed an act to encourage the planting and growing of timber and shade trees. This has been modified and amended at various times since. It provides that every one planting and cultivating from one to ten acres of forest trees for six years, and every one planting and keeping in growing condition half a mile or more of trees along the highway, shall be entitled to \$3 annually for each acre and \$2 for each half mile of such line of trees for six years. This State has also appropriated \$5,000 to its State Forestry Association, to enable to promote tree-planting by publishing a manual of tree-planting and securing lectures and experimental cultivation of trees, distributing trees and tree-seeds, giving information as to the best method of preventing forest fires, &c.

In *Missouri*, by an act of 1870, every person planting one acre or more of prairie land, within ten years from the passage of the act, with any kind of forest trees except black locust, and successfully growing and cultivating the same for three years, and every person planting, protecting and cultivating for three years one-quarter of a mile or more of forest trees upon his own land, to be set not more than one rod apart, and stand at the end of three years not more than two rods apart, shall be entitled to receive for fifteen years an annual bounty of \$2 per acre and \$2 for each quarter of a mile so planted. This act was annulled in 1876 by extending the time to ten years from that date as the limit within which planting might be begun.

The legislature of *Nebraska*, in 1869, provided an exemption of \$100 taxation for five years on every acre of trees planted and suitably cultivated. The constitution subsequently adopted forbade the exemption of private property from taxation, but made it allowable that the increased value of land, by reason of its being planted with trees or live fences, should not be taken into account in the assessment of the same. Towns are required to plant shade trees and taxes are levied for this purpose. Arbor day, which originated in this State, has been heartily adopted by the people and nearly 300,000 acres of planted forests are now beautifying and enriching the plains of Nebraska.

Nevada, ranking among the lowest of our States in respect to timber supply and rapidly wasting that supply, has passed an act similar

to that of Minnesota for the encouragement of tree planting. Every person planting one acre or more of land, within ten years after the passage of the act in 1877, with any kind of forest or shade trees, and cultivating the same for three years, and planting and cultivating for the same time one half mile or more of trees along the highways, is entitled to receive for twenty years commencing two years after the trees are planted, an annual bounty of \$10 per acre, and \$2 for each half mile so planted. The taxable value of the land is not to be increased by such planting and stringent penalties are provided to protect such trees from injury.

In *New Hampshire*, in 1881, a Board of Commissioners was appointed to inquire as to the extent of the destruction of the forests, the effect of the forests on rain-fall and the condition of streams, and in regard to the necessity of forest laws. The commission have made an extended and valuable report, which awaits the action of the legislature.

New York, in 1869, passed an act for the encouragement of tree planting. It allows the overseers of highways to abate from the highway taxes of any land-holder the sum of one dollar for every four trees set out along the highway opposite to his land, the abatement not to exceed, however, in any year more than one-quarter of the highway tax. In the present year a forest commission of three persons has been appointed, to which are given extensive powers of control over the lands belonging to the State. Provision is made for introducing instruction in forestry into the public schools and for publishing tracts and circulars in regard to trees and tree-planting. More effective laws have also been made for the protection of forests from fires.

In *New Jersey*, the governor is authorized to appoint a day in April, annually, and to invite the people of the State to devote the day to tree-planting.

In *Ohio*, an Agricultural Experiment Station was established in 1882, a part of the operations of which are the planting and testing of forest trees in a local arboretum and the encouragement of tree-planting throughout the State on account of its favorable bearing upon agriculture. Since that a Forestry Bureau has been established in connection with the State University at Columbus. This Bureau is making a methodical inquiry into the character and extent of existing forests in the State, and establishing at numerous points forest experiment stations.

Vermont appointed in 1882 three commissioners to inquire into the subject of the forests of the State, their extent and condition and what, if any, measures should be taken in respect to their preservation. This commission made its report, an extended and valuable one, to the legislature in October of last year, but no action has yet been taken upon it by the legislature.

Fifteen of our States, apart from any other distinct legislation for the promotion of forest tree-planting, have established arbor-day, and have thus shown their sense of the need of tree-planting and their disposition to promote it.

Cut off the cucumbers with knife or scissors, and on no account pull or twist them off. One reason why so many vines die as soon as they begin to bear is that the vines are injured in cultivation or in gathering the fruit. Cut freely and often, for as soon as the seeds begin to increase in size the flowers cease to set.

Veterinary and Hygiene.

Weights and Measures Used in Veterinary Practice.

The weights used by veterinaries are a combination of apothecaries' and avoirdupois weights, the former being used for weights smaller than an ounce, and the latter for those greater. The table of weight is:—

- 20 grains.....1 scruple.
- 3 scruples.....1 drachm.
- 8 drachms.....1 ounce.
- 16 ounces.....1 pound.

The table for fluids:—

- 60 minims.....1 fluid drachm.
- 8 fl. drachms.....1 fl. ounce.
- 20 fl. ounces.....1 pint.
- 2 pints.....1 quart.
- 4 quarts.....1 gallon.

A farmer cannot be expected to have properly graduated weights and measures. The want of weights may be overcome by taking a larger weight of the powder to be used—say a pound or an ounce—and dividing this with a knife into the required number of powders. To measure the liquids we give a list of common utensils, with the weight they generally hold:—

- A tumbler.....8-10 fl. ounces.
- A teacup.....5 “
- A wine glass.....2 “
- A tablespoon..... $\frac{1}{2}$ “
- A dessert spoon.....2 fl. drachms.
- A tablespoon......1 fl. ounce.

When prescribing doses of medicine to be given to diseased animals, except the complaint be one confined to or prevalent in young stock, the doses mentioned are intended to be given to adult animals of average size, but in order that farmers may know the dose for young stock, we give the following table:

HORSE	Ox.	SHEEP.	SWINE.	DOGS.	
3 Yrs	2 Yrs.	1 $\frac{1}{2}$ Yrs	15 Mth's	1 $\frac{1}{2}$ Yr.	1 part.
1 $\frac{1}{4}$ to 3 years.	1 to 2 years.	9 to 12 m'ths.	8 to 12 m'ths.	3 to 6 m'ths.	$\frac{1}{2}$ part.
9 to 18 m'ths.	6 to 12 m'ths.	5 to 9 m'ths.	6 to 8 m'ths.	1 $\frac{1}{2}$ to 3 m'ths.	$\frac{1}{4}$ part.
5 to 9 m'ths.	3 to 6 m'ths.	3 to 5 m'ths.	3 to 6 m'ths.	20 to 45 days.	$\frac{1}{8}$ part.
1 to 5 m'ths.	1 to 3 m'ths.	1 to 3 m'ths.	1 to 3 m'ths.	16 to 20 days.	1-16 part.

The Horse Bot Fly.

During the sultry days, late in summer, a small insect, looking something like a bee, may often be seen darting rapidly around the sides and knees of horses. It is not a bee, however, but the horse bot fly. The insect seen busily engaged is the female depositing her eggs on the hair of the fore legs and shoulders of the horse. They adhere to the hairs by means of a glutinous secretion deposited with them. They may be seen like little yellowish specks, in small clusters. The horse licks them off, and the enclosed larvæ hatch out. Some authors assert that this is done on the horse's tongue, and others say it is in the stomach. Both are right. If the eggs are licked off after remaining some time on the hairs, they are hatched at once by the warmth and moisture of the tongue, and the larvæ are swallowed with the food. If the eggs are removed soon after they were deposited, they hatch in the stomach. In either case the larvæ or bots fasten themselves to the lining of the stomach, by means of a little hook each side of the mouth. Here the

bot remains firmly fixed, subsisting on the juices, until the following spring. Then it disengages itself, and passing through the entire alimentary canal, is evacuated. It now buries itself in the ground and undergoes its transformation into a pupa. After a few weeks it emerges as a fly, mates, and the female proceeds to propagate its species by depositing its eggs on those parts of the horse reached by the tongue.

EFFECTS ON THE HORSE.

The question whether the larvæ in the stomach are injurious to the horse or not, is one relating to veterinary rather than to entomological science. All the standard authorities scout the dread entertained by farmers and others for bots. It is only when they are in such numbers as to present a mechanical obstruction to the passage to or from the stomach, that they can do any serious harm. Dadd says: "The bots, generally speaking, are not as troublesome to horses as people seem to suppose, for it is very rare in making *post mortem* examination, that more or less are not found in the stomach. Wonderful stories are related of bots burrowing through the walls of the stomach. But this never occurs while the horse is alive. We do not deny that bots are found in the abdominal cavity, to which they escape after the death of the horse. It is all very easy to say a 'horse has the bots,' and prescribe some medicine for their expulsion, but no practical advantage is gained, nor is the horse benefited. For most of the remedies used as vermifuges would kill the horse, while the bots would not be injured in the slightest degree." Jennings says, "The symptoms of other diseases, as inflammation of the bowels, etc., are often assigned as indicating the presence of bots. But though bots may sometimes aggravate these conditions, it is more than folly to jump at the probable cause, and say it is 'a case of bots' because a horse looks at his sides and the like. When such symptoms rise from whatever cause, the animal must be treated for inflammation. If we succeed in controlling it and restoring the stomach to healthy action, the bots are no longer troublesome; if, on the contrary, we drench the animal for bots, the chances are we shall kill them."—[Clarence M. Weed in *Prairie Farmer*.

Hereditary Diseases.

The extent to which certain diseases are hereditary is not yet definitely decided upon. There is, however, no doubt that a large number of animals afflicted with disease have had a predisposition to that disease. This means that the organ suffering from disease has had a natural weakness or was malformed before it became diseased. This weakness or malformation is very frequently inherited, and therefore the disease is said to be inherited, although it may have required some direct influence to fully develop it. Sometimes an inherited disease may not have afflicted the parent, but may have descended from some of its ancestors.

The following extract from a contribution by Prof. Garside, which will be of interest to many of our readers, appears in an exchange:

"I will rapidly review the serious diseases which are more particularly hereditary, some of them frequently completely incapacitating animals from performing work. Commencing with the eye, the horse is subject to a disease of the visual organ which is, without doubt, I think, hereditary, viz., periodic ophthalmia, or moon blindness, as it is frequently termed. It is stated

to be much more common in Ireland than elsewhere, and one writer (Castley) observes that in Ireland for a stallion to be blind or half blind appears to be no detriment to him; and as for the dam, supposing she be blind, the Irish make a point of breeding from her, because she is fit for nothing else. The disease does not, as a rule, appear till the animal is three or four years of age; but, as tending to show that the disease is due in a great measure to inheritance, and is largely independent of exciting causes, it may be stated that it is sometimes observed in quite young animals—animals which have been neither stabled nor worked. Turning to the nervous system, I am sure you must all have heard of cases in which insanity has attacked several members of the same family. In the lower animals, also, there are several nervous diseases which are hereditary. Temper or disposition, which is closely connected with nervous development, is undoubtedly transmitted, but it is often difficult to assign the proper proportion of blame between inheritance and stupidity on the part of those by whom the animal is brought up. 'Shivering,' or the difficulty which many animals experience in backing, the effort being accompanied by spasm of the muscles of the hind legs, and other symptoms, is an example of nervous affection which is probably hereditary.

'Stringhalt,' a somewhat similar affection, must also be included in the category of hereditary diseases. Epilepsy, or fits, in which there is sudden and complete unconsciousness, associated with spasm of certain muscles, is also hereditary. It is by no means uncommon in sheep, pigs and dogs, especially affecting young animals. Of constitutional diseases we may mention rheumatism and scrofula (tuberculosis) as being especially hereditary. Rheumatism affects all species of farm animals, some more than others, and the hereditary tendency is, I think, thoroughly established, especially with regard to cattle. Being exposed more frequently and for longer periods to wet and cold, cattle and sheep are most frequently affected, and so more liable to transmit it. Scrofula, tuberculosis, consumption, or pining, are terms which unfortunately are variably applied and interpreted. It would be better, we think, to limit the term scrofula to the constitutional predisposition which exists in many animals to exhibit certain specific local changes—viz., the development of small yellowish nodules termed tubercles in various parts of the body. The term tuberculosis expresses the process, tubercles the results of the process. The term 'pining' is given to the disease on account of the rapid wasting (emaciation) away of the body which occurs when tuberculosis is at all advanced. It is principally a disease of well-bred cattle and pigs.

"As regards disorders of the breathing apparatus, it can scarcely be doubted, I think, that a morbid sensitiveness of the lining membrane of the respiratory tract exists in many animals, rendering them particularly liable to sore throats, bronchitis, chronic cough, and the like; and this sensitiveness is in all probability transmitted to the offspring. Apart from this, however, there is an affection of the horse whose chief symptom is the production of a peculiar sound during respiration—I mean roaring. In the majority of cases it may be stated that roaring is due to wasting away (atrophy) of certain muscles of the larynx (upper part of the windpipe), whose function is to dilate the opening of this tube dur-

ing respiration. When they waste, therefore, non-dilation of the opening is the result, the calibre of the tube is consequently diminished, and the collision between the column of air and the obstruction is represented by the peculiar sound known to all. There still seems to be a difference of opinion respecting the hereditary character of this affection, but, personally speaking, I have no doubt on the subject. I have known several cases where it was transmitted amongst half-breeds and cart-horses.

"With regard to diseases of the extremities, we think there can be no question as to their hereditary nature. The various bony enlargements, such as spavins, ring-bones, splints, sprain of certain ligaments and tendons, such as curb, etc.; disease of some of the bones, such as navicular disease, ossification of the lateral cartilages of the foot (side-bones), are all hereditary.

"With regard to conformation, we can readily understand how in horses with short, upright pasterns, the concussion is considerable, and inflammation of some of the bones of the extremity is thus easily set up. This expresses itself in the form of those bony enlargements with which you are all so familiar. According to their position they receive special names, such as splints when situated on the cannon-bones, ring-bone when on the large or small pastern bones, etc. But apart from the supposition that it is the peculiar conformation which is inherited, it must be confessed that young unbroken colts are sometimes affected with these enlargements, and we can scarcely believe that they have been subjected to exciting causes sufficient to produce these morbid changes. And, indeed, I do not see there is much more difficulty in believing that a tendency may exist in an animal to throw out bone, just as much as a tendency may exist to form certain nodular enlargements like tubercles."

Spasmodic Colic.

This term, also familiarly known as "belly ache," is loosely used to designate all conditions in which there is pain in the belly. The present remarks will be confined to that which is more purely nervous and which results from spasmodic contraction (cramps) of the bowels.

In certain susceptible conditions of the system a slight indigestion without impaction or tympany, the taking of indigestible matters that would have been harmless at another time, a drink of ice-cold water when perspiring and exhausted, a chilly rain or dew, will cause spasms and the most excruciating agony.

SYMPTOMS.—The attack, according to Law, is "sudden, the horse paws, moves uneasily, kicks at the belly, looks at the flank with anxious countenance, dilated nostrils and glaring eye, crouches with semi-bent limbs for a few seconds, and then throws himself down with a prolonged groan. He rolls, lies on his back, sits on his haunches, and may get up, shake himself, take to feeding, and appear quite well. Another fit, less serious or worse, comes on in 10 to 30 minutes. This, with the reckless manner in which he lies down, and the entire absence of tenderness on the abdomen (belly), serve to distinguish it from other bowel diseases. In cattle there are similar symptoms, with uneasy shifting of the hind limbs, kicking with the upper one when down, twisting the tail and moaning. It rarely lasts over an hour or two."

TREATMENT.—Give sweet spirits of nitre—horse, 1-2 oz.; ox, 3-4 oz.; or sulphuric ether—

horse, 1-2 oz.; ox, 2-3 oz.; combined with belladonna—horse, 2 oz.; ox, 2 oz.; opium—horse, ½-2 drs.; ox, 2-4 drs.; aconite—horse, 20-30 drops; ox, 30-40 drops; or chloral hydrate—horse and ox, ½ oz. If the disease is caused by irritants in the bowels, give a laxative, as 4 drams of aloes, or 1-2 pts. of linseed oil for the horse, and 1-2 qts. of linseed oil for the ox. Injections of warm water are beneficial, and quiet walking exercise has also a beneficial effect.

Corn Smut Kills Cattle.

Dr. H. Breiner writes in an exchange, whose name we cannot give:—

Various opinions are held in this part of the country as to the death of hundreds of cattle soon after turning them into corn fields after the crop has been gathered. Two years ago during a post-mortem examination of one dead under these circumstances, I thought I saw traces of congestion at the base of the brain and spinal cord; and the contents of the stomach were much darker than usual. The owner lost two or three before this. He had turned them into a cornstalk field where there was an abundance of good spring water, so they did not die for want of water, nor from a bad quality of water. Observing the symptoms closely until the animal died, I concluded that the cause was poison and that that poison was ergot. This year I directed my farmer to gather up all the smutty corn and bring it to the barn; but he thought it would do to pull it off and tramp it in the ground, and did so with some of it, and some no doubt was left in the stalks or only thrown on the ground. And falling in with the popular opinion that the cattle eat too much if they are at first allowed to run in the stacks the whole day, and do not get enough of salt and water, he at first and for ten days or two weeks left them in only an hour or two a day, and gave them plenty of water and salt.

Then he thought all danger past and left them in half a day, and no harm occurred. The next day he turned them in in the morning, and before noon one of my finest heifers was dead, and by nine o'clock that night another was dead, and the next morning a young cow showed evidence of the poison, but she recovered. The facts to my mind then are these: The poisoning is caused by the corn smut; the cattle will not eat the smutty ears until they have eaten the good corn left on the field. I have not heard of any cattle dying when first turned in—it invariably occurs several days after. There may be exceptions to this rule, because some animals will eat almost anything that can be masticated and swallowed. The most prominent symptoms of smut poison are these: First, more or less restlessness; then tumors or spasms of the muscles, especially of the head and neck; dilation of the pupils, then rigidity of the limbs, and soon after this death with the head drawn back. These are the symptoms as I have observed them, and they are such as we find in vegetable poisoning. As this fatality seems to be of comparatively recent origin—I never heard of it in the East—I will be thankful for light as to its cause and cure.—[Dr. H. Breiner, Bitlertown, Kansas.]

A correspondent of the Country Gentleman writes: "A curious thing, vouched for by a veterinarian well posted on cattle breeding, shows that food and surroundings have effect on future fetus. He obtained a Hereford calf to raise for a service bull, and to get it strong, let it run till nearly fit for use with a good milking black Welsh cow. The calves got by it all more or less partook of her characteristics. This was a great many years ago, during which he has watched carefully, and noted several somewhat similar instances."

The Apiary.

The Honey Crop for 1887.

There will be no surplus honey worth speaking of this year. Bee men in this section say that the crop is a failure; one man who expected to get 4,000 lbs., will not get 400 lbs., and many others who expected a surplus will have hardly enough to winter their bees on. This same story comes to us from the eastern, western and southern States, so that there will be a general scarcity throughout the whole of North America. R. Grinsell, Baden, Mo., writes the American Bee Journal as follows:

"My bees are in fine condition, and there has been all spring lots of bees and brood, but my 110 colonies have not got 100 pounds of honey in their hives altogether. I am now feeding them. White clover has been in bloom for the last two weeks, but they have gathered no honey from it yet."

This report was sent on May 27th, when the bees should be bringing in a large harvest. Another writes on June 17th, from Adeline, Ill.:

"The white clover honey crop I predict will be an entire failure in northern Illinois, on account of the drought. My bees have less honey to-day than they had last April, when put out of the cellar. The true time when to put on sections has not appeared yet, and I think it will not (that is, new comb). I have a field of Alsike clover, but there appears to be no nectar in it—something that I have never known before. Pastures have given out, so we have to turn our stock on the grass intended for hay."

Henry Alley, Wenham, Mass., on June 16 says: "It is cold here. Bees are doing nothing, and have not done anything so far this year. The season will close here in 20 days."

In the spring there was (according to appearance) going to be a very large crop of honey and bee-keepers were smiling faces, but soon the scene changed, and woeful is now the word. White clover bloomed early, but was burnt up so that the yield was a failure. Basswood or linden was in bloom here on the 20th of June, just about one month earlier than usual; it is now over and its crop secured, what there is of it. As bees only have about thirty days to secure the surplus crop of honey, it is of the greatest importance that we have weather during that period that will favor the secretion of nectar in the flowers. Last year honey was very cheap, but it is expected that prices will rule decidedly higher this year.

Are Bees a Nuisance?

The bee men of California are continually having to protect the industry against the fruit growers, who claim that the bees attack the grapes and tear them open to abstract the sweet juices and damage immense quantities of fruit; they therefore ask for the extinction of the bees from the neighborhood of the vineyards. The following from W. C. Knight, a fruit grower, will go far to convince the grape growers that the bees do not injure sound fruit, but only when the skin has been broken do they visit the fruit. Mr. W. C. Knight is the editor of the Southern Planter, and in the June issue he says:

"Our vineyard commenced bearing well the third year, and was in fine thrift the fourth year, when it had a serious set-back by the destruction of the grapes, as they ripened, by bees, as we

supposed. There were a few hives about 100 yards off, and it appeared that every bee in them was puncturing and sucking the juice of the fruit. It was hastily determined that the bees must be sacrificed for the protection of the vineyard, and accordingly loads of dry wheat straw were brought and dumped near the hives. After night, when the bees were resting quietly, the hives were gently taken from the stands, piled together—the straw piled over them—and the torch applied, so that in a half hour all were consumed. This seemed to be a cruel act, but justifiable under the principle of *ex necessitate rei*.

"Our surprise was great when the next day, a bright and clear one, not a bee was to be seen, but the destruction went on, and it became apparent that innocent lives had been sacrificed, and the real de redators appeared in the form of *yellow-jackets*. They were active and voracious, and could, and did, in plain view pass from bunch to bunch, and with their sharp proboscides puncture and suck the juice until surfeited, when they would fly off in a sluggish manner. A few of the common gray wasps would follow and lap up the exuded sweets, and it became clear that the innocent bees had only been doing the same thing. The vineyard was the victim of an unsuspected enemy, and it was a serious question how his ravages could be checked. Knowing something of the habits of this insect in respect to burrowing into the ground for their nests, we called up an intelligent and observing negro man and put him on the watch. Following out the idea suggested by a recent reading of Cooper's *Oak Openings*, in which was described the plan bee-hunters use for finding bee-trees, this man was enabled to trace the *yellow-jackets* by the direction of their flight to their nests, several of which were found within a few hundred yards. The destruction of these insects was accomplished somewhat after the plan pursued with the bees. After nightfall a large armful of dry straw was deposited over the nest, and then by a violent knocking on the ground the *yellow-jackets* would rush up from their burrow, and whilst entangled in the straw, the torch was applied and the whole colony burnt up. After this our vineyard remained undisturbed for years.

"We have been thus particular in details, as it may tend to settle the question as to honey-bees, and at the same time be of some service to bee-culturists. The yellowish wasp, which is described in the following article from the Florida Farmer and Fruit Grower, is doubtless what is known in Virginia as the *yellow-jacket* :

"Many notable horticulturists have complained of the ravages of the honey-bee in their vineyards, and we, like a majority of fruit-growers, have taken it for granted that such was the case, and said no more about it. There are some persons, however, of an inquiring turn of mind, who did not wish to sacrifice their bees upon a bare suspicion, and who have sat down by a vine loaded with ripe fruit and watched patiently for the true culprit.

"One of these doubters informed us that he is satisfied, from personal observation, that it is impossible for the honey-bee to puncture the skin of the grape. His experiment was as follows: After removing the crop from the vineyard, except one vine, containing a couple of dozen of ripe bunches, he seated himself and waited patiently for the real culprit. Bees and wasps of various kinds came and went without doing any harm. At length his attention was drawn to a

species of wasp, which he described as follows: Color of body, dark-red or bronze; wings, steel-blue, with a yellow spot on each shoulder, and some with a yellow spot on the forehead, perhaps a distinguishing mark between the sexes. This fellow alighting on the berry, with his strong mandibles ripped up the fruit, cutting a long gash as neatly as a doctor's lancet, proceeded to fill himself with the sweet juice, and afterward went to every bunch upon the vine, until all of them were ruined. Other insects, bees included, followed in his wake, and naturally partook of the spoils. May it not be possible that this insect is causing all the damage heretofore charged to our friend, the honey-bee?"

Bee Notes for August.

Contract the entrances to the hives, especially the weak colonies, to prevent robbing, as bees at this season are anxious to gather honey, and are not over scrupulous where they gather from. Many an honest man has eaten the honey gathered by his neighbors' bees, and stolen by his bees from them.

Do not open the hives any more than is absolutely necessary. As a rule, the bees are very cross during this month.

Queens that are not sufficiently prolific should be superseded this month, and in doing so remember that it always pays to introduce first-class stock.

New York State produced 11,093,000 bushels of wheat last year, from 680,493 acres, being about 16½ bushels per acre.

Sloppy food makes sloppy milk, says an exchange. All dry food is apt to make rather tasteless, though perhaps rich milk, producing cream of hard churning quality. Hence the importance in winter of some sort of succulent food along with the dry; and it may with the same force be said that in summer a little dry food with so much that is juicy is of decided advantage.

Milk should not be partaken of in large draughts, like beer or other liquids of different chemical composition; but it should be swallowed slowly and in small quantities, in order that it may be mixed with the gastric juice. Taken after other victuals, it causes overloading of the stomach, and uneasiness and digestive disorders. The richer it is in fat the more unpleasant the disturbance, when not partaken of as above described.

Sweden has become a great exporter of butter. The amount sent abroad last year was valued at more than \$4,000,000. The Swedish dairies are now worked upon the most improved systems. Only skilled hands are employed in receiving the milk, separating and refining the cream and churning the butter. The work is performed with the greatest care and cleanliness. The dairymaids receive a practical and theoretical training at dairy schools.

In the Farm and Garden, Mr. A. Rose, the originator of the "American Magnum Bonum" potato, states that in 1886 he grew 1,965 bushels of potatoes on two acres of rich, sandy loam, with the aid of 22 loads of well decomposed farm yard manure and the following fertilizers, to prevent scab: Four bushels fresh lime, and 120 lbs. of sulphur mixed together and slaked; 12 bushels hard wood ashes; 400 lbs. land plaster, and 200 lbs. salt. The farm yard manure was harrowed in before planting, and the other fertilizers were put in the trenches.

Poultry.

Edited by J. W. Bartlett.

The Coming Fairs.

This is a season of hope and high expectations to the poultry man, but in the midst of which he experiences some disappointments. There is more pleasure to the true lover of poultry in watching his flocks develop than to the breeder of any other stock, especially at this season of the year, when the young stock is each day developing some new point of beauty with such rapidity, and the new breeding stock produced last fall is now showing its blood in the progeny. This is what makes poultry breeding more interesting than any other stock—one year shows what the parent stock is made of, while other stock requires three or four. The prospect is good for the fall fairs; never before was there such interest manifested in poultry as this season, and the agricultural societies generally realize the fact, and are making provisions for the same. The season has been highly favorable for raising chicks. So with these things in their favor there is, so far as we can see at present, a grand prospect for the poultry department of the fall fairs.

The Western Fair directors are expending \$1,800 on a poultry shed. This should give London a poultry building equal to any on the continent. Another straw indicating the important place poultry is yet to hold on the farm.

Bring Out the Birds.

As "many a rose is left to blush unseen," etc., so many an excellent fowl which farmers would be glad to secure as breeding stock, and which is of great value to the owner as such, lives and dies in obscurity because the owner is not aware of its worth. If you have well bred fowls of any breed get them out to the fairs, and let the public see what you have got; you may do yourself and others good.

The Standard.

In a recent issue of the Country Gentleman is an article by Grant Parish, of Montgomery county, Maryland, in which he attacks the standard of excellence vigorously if not judiciously. The standard, as most breeders are aware, is open for improvement, when necessary, every five years. Mr. Parish calls it the transitory standard, and says it occasions loss to breeders—this change, or rather opportunity for change. Now, Mr. P. evidently is not a practical breeder, or he would know that no changes have been made in the standard since its adoption that are in any way retrogressive, neither have there been violent changes, but a slow, steady march towards perfection. And the system that he proposes, and which he says gives every satisfaction in Scotland and England, viz., the unwritten law, the eye of the judge, is open to every objection the standard is and many more. But just here Mr. P. exposes his lack of knowledge of the subject, as there is a standard of excellence for poultry in England, and has been one for many years. But because English judges have not adopted the scoring system he thinks there is no standard there. But if the standard was discarded, and the eye of the judge made the law, how would breeders know what to aim at, as one judge might—and in all probability would—favor one style of bird, and his compeer another, and both

would be right, if his eye was the law, and the breeder would have no guide, as every different judge might have a different type of fowl as his ideal; and the judges that adhere most rigidly to the standard give the best satisfaction, while those who are at all inclined (through ignorance or any other cause) to injure it, are decided failures.

TESTING THE FERTILITY OF EGGS.—Poultry gives the following very simple method of egg testing, by which in forty-eight hours or three days at most after setting, the fertility of eggs can be determined. The egg is held between the forefinger and the thumb of the right hand in front of a strong light, in such a position that the entire flame is shaded from the eyes by the hand and the egg. With the forefinger and thumb of the left hand the egg is rapidly and steadily turned about one-quarter round. The germ turns with the egg towards the eye, but floats slowly back to the top, and can readily be seen in all but the most opaque, yellow-shelled eggs after forty-eight hours incubation. Yellow eggs require a quicker eye, and are more difficult to be certain of at so early a stage, but can generally be reliably tested at seventy-two hours. In cases of doubt, the egg can be marked with a pencil ring round it and tested again later.

Why keep a lot of old hens and cocks any longer? Market them the first chance you get.

The meal will mould in the bin unless mixed with bran and stirred frequently. Neglect here may cause disease and much loss. Look out.

A generous feed of corn in the evening will induce the turkeys and ducks to come home to roost. Let them go off in the morning with a light breakfast.

The varmints that are thinning out the young broods find a harbor in the brush pile or in the tall weeds along the fences or about the coops. The dog, the scythe, the torch!

"For a succession," as gardeners say, hatch pullets this month and next. They will keep up the supply of eggs in the latter part of the summer when the older pullets have ceased to lay and eggs are high.

Vermin continue to hatch as well as ever. Do not let your vigilance relax, even in July. The heat is bad enough, but heat and lice together are very hard on both old and young poultry. Kerosene is cheap.

We know a poultry keeper who plants a good sized patch of cabbage expressly to feed to the laying hens during the winter. This is a good practice to imitate. Let the patch be a large one; the pigs will take care of any surplus that the family and hens do not need.

There is nothing handier than a bale or two of wire netting for making a temporary yard for a flock of fowls. Drive down stout stakes, unroll the netting and tack it to the stakes with inch clout nails. It is very quickly done by two persons working together. We have often done it without assistance.—[Farm Journal.

Mr. J. J. Thomas preserves poultry droppings in barrels, in three alternating layers of road-dust. He prefers the latter to muck, for the reason that if gathered at the right time it is dry and pulverized; "and if it has come from loam the alumina makes a more perfect absorbent."

Sheaves from our Gleaner.

Stewed apples are better for constipation than pills. Tomatoes are, as we have so often pointed out, also valuable for dietetic purposes, as they act on the liver and bowels, and a man who eats plenty of these "red apples" will seldom or never need medicine.—Horticultural Times.

TO MIX COMMON WHITE PAINT.—Mix or grind white lead in linseed oil to the consistency of paste; add turpentine in the proportion of one quart to the gallon of oil; but these proportions must be varied according to circumstances. Remember to strain your paint for the better kinds of work. If the work is exposed to the sun, use more turpentine for the ground color to prevent blistering.

A correspondent of an exchange says: A few years ago I had the care of a young orchard, and the trees became badly infested with parasites or lice (evidently the oyster-shell bark louse, *Aspidiotus cochiformis*). I took oak wood ashes and wet them with water about as thick as mortar, and by using a glove rubbed the trunk and limbs as far as I could reach with the mixture. In a short time the bark looks clean and thrifty. The leaves also took on a good color, and were not crisp as they had been before. I did not sprinkle the top; but I think lye that would hold up an egg and thinned with water to half strength, would not hurt the leaves. A rubber glove is best to use in putting on the ash wash.

A correspondent of the American Garden gives a piece of his experience in strawberry culture as follows: In the fall of 1880, I plowed and subsoiled to the depth of fifteen inches, more or less, about one acre of land that had been in corn and potatoes for ten years without any manure. In the spring of 1881 I plowed and put it in good condition, set out Charles Downing plants, and grew them in matted rows. The next season I sold 4,495 quarts for \$1,153.80, and the family had berries twice a day, and put up all they wanted. The only fertilizer used was a light top-dressing of leached ashes. This was, of course, the gross receipts. Allowing \$150 for expenses, cultivation, boxes, picking, etc., and including what was consumed at home, how far short of \$1,000 per acre was the amount received?

THE GROWTH OF POTATOES.—Careful examinations were made to determine when potatoes stopped growing. This was effected by carefully measuring the tubers and recording the size, replacing the earth and measuring again. Those which were of good size made little or no additional growth after the tops had begun to die or turn yellow; when measured again when they were quite dead, some had increased none in size, and others had gained a fourth of an inch in diameter. But the very small tubers, or those only a fourth of an inch when first measured, continued to grow till the stalks were quite dead, and had about doubled in size. In answer to the inquiry as to what becomes of the planted tuber, it was found that in a rich soil it begins to decay or becomes exhausted much sooner than in a poor soil. In dry, poor soil, where the tops make but a feeble growth, the seed tuber is frequently found entirely sound when the tops are nearly or quite dead. The experiments show that the chief value of large tubers for seed lies in the greater vigor that they give to the young starting shoot. The nutriment in the tuber cannot compensate for a poor, dry, or badly prepared soil.

Commercial.

FARMER'S ADVOCATE OFFICE, London Ont., Aug. 1, 1887.

The past month has been one of unusual extremes. The heat has been most excessive, and said to be the hottest month since 1868. Then the drouth has become serious in some parts of the country, while in others there has been an abundance of showers. This applies to the country lying north of Stratford and Clinton. While in some parts of the States they have too much rain, and in other parts they are suffering worse than we are.

WHEAT.

Cable advices report slow and easy markets and nothing of an encouraging nature. Cargoes of wheat off coast were very slow, and on passage or for shipment slow of sale. Corn on passage was firm. In Liverpool wheat was very dull. The stock of wheat in Chicago shows a decrease of 1,154,000 bushels compared with a week ago, and an increase of 1,231,000 bushels with the same time last year. Corn shows a decrease of 295,000 bushels compared with a week ago, and a decrease of 374,000 with last year. The Chicago visible supply of wheat shows an increase of 605,000 bushels compared with a week ago, and a decrease of 65,000 with the same time last year. Corn shows a decrease of 729,000 bushels compared with a week ago, and a decrease of 1,595,000 with a year ago.

The New York Graphic says: Notwithstanding the ominous reports of damage to the wheat crop in some portions of the Northwest, the general crop conditions are favorable. The official circular of the Exchange states that the latest advices from the United Kingdom represent the wheat crop in excellent condition and making rapid progress towards maturity. Barley, oats, peas and beans have, however, suffered from the drought, especially on light, sandy soil. This will be a "clay-land year" in England. In 1879 there were 10,450 flour mills in operation in the United Kingdom. The number running is 8,814, of which 461 are complete roller process mills, with a combined hourly capacity of 3,810 sacks of 280 lbs. or 5,443 barrels of 196 lbs. There is nothing specially new in regard to the Indian crop. At Bombay receipts of wheat continued very heavy, adding to the heavy stocks already accumulated. At Calcutta receipts continued very small for the season, and while the market was quiet any important demand would have induced an advance in prices. The final report upon the area and out-turn of the 1886-87 India wheat crop has been received. The feature of the report is that in the Punjab much damage has been done to the wheat crop by the failure of the winter rains, and by frost and dry wind; the grain harvested, however, is reported to be in excellent condition. It further states that in Bengal excessive rain during September and October made it impossible to prepare land for wheat in due time, and the crop, moreover, suffered from rust brought on by heavy rains in January. The normal area under wheat in India is estimated at about 26,000,000 acres, and the average out-turn is roughly estimated at 7,135,000 tons, equivalent to 266,373,333 bushels of 60 pounds.

LIVE STOCK.

A further improvement has taken place in the British live stock markets, and values are one-half cent higher, demand good and supplies light.

The Montreal Gazette says: The improvement chronicled by our special cables a week ago has been more than sustained, in fact our despatches of to-day's date report a further advance in values, which amounts to half a cent, making the tangible gain of one cent per pound from the lowest. Light receipts from Canada, the States and elsewhere, together with a steady demand, have combined to produce the improvement, and trade has been of a much better character than

for many weeks. At Liverpool to-day there was a steady demand at the advance, and at the close the market was well cleared. Prime Canadian steers were at 11 1/2c., good to choice at 11c., poor to medium at 10c., and inferior and bulls at 7 1/2c. @9c. Sheep were in heavy supply and met with a slow trade. To-day's prices were: Best sheep 13c., secondary qualities 11c. @12c., merinoes 10 1/2c. @11 1/2c., and inferior and rams 8c. @9 1/2c. These quotations are calculated at 4.80 in the £. The meat markets have made a considerable improvement, Liverpool having advanced 1/4d. @1/2d., and London 8d. Refrigerator beef in Liverpool is cabled at 6d. for hindquarters and 3 1/2d. for forequarters per lb. In London hindquarters are quoted at 4s. 2d. and forequarters at 2s. 2d. per 8 lbs. by the carcass. Following were the quotations in Liverpool for three years:—

Table with columns for years (1885, 1886, 1887) and prices per lb. for various dates from July 25 to May 2.

CHEESE.

The cheese markets all over the country have gone up with a bound from 8 1/2 to 10 1/2 and 11 cents. We really cannot see anything to justify this most unusual advance, and no doubt a good deal of it is due to reckless speculation. One thing is certain that these prices will very much curtail the consumption, and in our opinion at these prices the consumption will fall off faster than the make has done from the hot dry weather. Besides, the make of July cheese cannot be fine nor the keeping qualities good after passing through the heat that we have had the past month. The Montreal Gazette reports the market as follows:

The value of the exports of cheese from May 1 to June 30 is the largest in the history of the trade, the Canadian article showing an increase of \$115,000 over 1884, which hitherto held the record. The week has opened on a strong cheese market, and with transactions at 10 1/2c. for finest, but it appears as if there is not much genuine effort to buy at that figure, although a considerable amount of strong talk is naturally indulged in. The cable advanced 6d. to 52s., but several exporters complained over the lack of orders to buy. The feeling over the future is uncertain, and here and there the opinion is taking shape that July cheese has been put high enough, and that any further advance would place the market on, if not over, the danger line. However, for the present, the market has a very firm tone. A year ago the market was 8c., cable 41s.; two years ago the cable was 41s.

Table showing cheese prices: Finest white, Finest colored, Fine, Medium.

The following shows the value of the exports of cheese from Montreal from May 1 to June 30:

Table with columns for years (1887, 1886, 1885, 1884, 1883, 1882, 1881, 1880, 1879) and values for Canadian, Not Canadian, and Total.

BUTTER.

There has also been a marked improvement in the butter market, and holders have now placed their limits considerably above what buyers are willing to pay. While there is no denying that a very material improvement has taken place in the butter market owing to accounts of drouth abroad and the supposed moderate make here, it is not wise for country holders to crowd values

up too much, as such a course will only serve to stop the demand and block what might otherwise be a satisfactory trade. The Montreal Gazette quotes Montreal prices as follows:

Table with columns for locations (Creamery, Townships, Morrisburg, Brockville, Western) and prices.

The following shows the value of the exports of butter from Montreal from May 1 to June 30:

Table with columns for years (1887, 1886, 1885, 1884, 1883, 1882, 1881, 1880, 1879) and values for Canadian, Not Canadian, and Total.

TORONTO—PRICES AT FARMERS' WAGONS.

Table listing prices for various agricultural products like Wheat, Barley, Oats, Peas, etc.

LIVE STOCK MARKETS.

Buffalo, July 25, 1887.

CATTLE.—Receipts, 13,530 against 12,325 the previous week. The cattle market opened up on Monday with 161 car loads of cattle on sale. The demand for medium and common cattle was active at the prices of the previous Monday, but good to choice cattle were very dull at a decline of 25 cents. Good 1,400 to 1,500-lb. steers sold at \$4.20 @ \$5.35; 1,300 to 1,400 lb., \$4 @ \$4.20; 1,200 to 1,300 lb., \$3.80 @ \$4; 1,000 to 1,100 lb., \$3.60 @ \$3.85; common to good mixed butchers' stock, \$3 @ \$3.50. There was nothing doing on Tuesday, and only two loads on sale Wednesday, but this was sufficient to meet the demand. There was no trade on Thursday, and on Friday with 20 loads on sale, the market ruled dull and weak. On Saturday the receipts were larger, but were all Texans, which sold at \$3.20 @ \$3.85. No changes in other grades were reported. The following were the closing

Table listing prices for various types of cattle: Extra Beeves, Choice Beeves, Good Beeves, etc.

SHEEP.—Receipts 44,200, against 42,000 the previous week. The offerings of sheep on Monday was made up of 25 car loads. The market opened with an active demand at full former prices, and all were closed out early. Common to choice sheep sold at \$3.75 @ \$4.15; good to choice, \$4.25 @ \$4.50; fair to choice lambs, \$5.50

@\$6.25. There were no sheep on sale Tuesday. On Wednesday 7 loads were offered. The demand from the local trade was active and prices 25 cents higher. On Thursday and Friday prices declined slightly and closed weak. On Saturday the receipts of sheep were 6,000. The market ruled strong and active, and prices 25 cents higher. Common to good sheep sold at \$4@4.50; choice to extra, \$4.75@5; good to choice lambs, \$5.50@6.75; extra, \$5.

Hogs.—Receipts 41,452, against 40,248 the previous week. The receipts of hogs on Monday for sale was 42 car loads. The demand was active and prices 5@10 cents higher than on Saturday. Good to choice Yorkers sold at \$5.80@5.90; fair do., \$5.65@5.75; good to choice medium weights, \$5.90@6; pigs, \$5@5.50. There was nothing doing on Tuesday. On Wednesday there were about 1,000 offered. The market ruled dull and 10@15 cents lower. Prices declined again on Thursday and Friday and closed weak with several loads unsold. On Saturday the offerings of hogs numbered 6,310. The market ruled slow and declined 10@15 cents. Good to choice Yorkers sold at \$5.30@5.45; fair do., \$5.20@5.25; good to choice medium weights, \$5.40@5.50; pigs, \$4.75@5.

HORSE MARKETS.

The United States Marshal's sale of 11 imported stallions took place as per advertisement at the Indianapolis stock yards, Wednesday, the 13th. They were all pedigreed animals, and were seized by the Government for violation of importation laws. The sale was largely attended and bidding spirited. The following were the buyers and prices paid:—

Table listing horse sales with columns for horse name, age, weight, and price. Includes entries like 'One English Shire, dark brown, 5 years old, weight 1,900 lbs., Banks & Hill, Laport, Ind. \$ 450'.

NOTES OF THE HORSE MARKET.

At Grand's sale in Toronto, held 25th July, 20 head of ordinary work horses were sold at \$75 to \$125 each.

The Montreal horse market has been quiet, few American buyers having been in the city.

The Boston horse market has been dull. One bay mare, weighing 1,350 pounds, 6 years, was sold at \$155; one grey mare, 5 years, weighing 1,000 pounds, at \$130, and one bay horse, 8 years, weighing 1,000 pounds, at \$80.

A Washington despatch says:—The Treasury Department has decided that animals of high grade and value imported from Scotland or other distant countries for breeding purposes are entitled to free entry, notwithstanding the fact that they may be for sale. This ruling reverses the decision of the collector of customs at Detroit, Mich., who assessed duty on certain Scottish stallions on the ground that the free list provision did not apply to animals intended for sale, even though imported for breeding purposes. Judge Gresham, says the Montana Farmer,

lately decided that owners of imported horses to be sold for breeding purposes were required to pay 20 percent duty under the law as he interprets it. This reversed all precedent on the subject, as the law had been held to broadly recognize the fact that the object of free importation was for a common benefit, that of improving our stock and grades of horses. This has been the effect of such importation, and the country has been greatly benefited under the operation of this broad and correct interpretation. The narrow decision of Judge Gresham caused a great deal of feeling among the people, as it meant 20 percent additional to the prices of breeding horses. The attention of the Secretary of the Treasury was called to the matter, and he has given the most positive assurance that the old ruling of free importation of breeding horses would be adhered to. It is said that the duty paid a few days ago by the Messrs. Galbraith, of Janesville, Wis., under the narrow decision of Judge Gresham, will be refunded to them. We do not understand how the decision of a federal court judge can thus be set aside, but certainly it ought to be put aside in this case, in some way, and trust that we shall have no more of them. Some courts seem to be possessed with the idea that their mission is to find a "north-west passage," by which all settled matters may be uprooted.

Correspondence.

NOTICE TO CORRESPONDENTS.—1. Please write on one side of the paper only. 2. Give full name, Post Office and Province, not necessarily for publication, but as guarantee of good faith and to enable us to answer by mail when, for any reason, that course seems desirable. If an answer is specially requested by mail, a stamp must be enclosed. Unless of general interest, no questions will be answered through the ADVOCATE, as our space is very limited. 3. Do not expect anonymous communications to be noticed. 4. Matter for publication should be marked "Printers' MS." on the cover, the ends being open, in which case the postage will only be 1c per 4 ounces. 5. Non-subscribers should not expect their communications to be noticed. 6. No questions will be answered except those pertaining purely to agriculture or agricultural matters.

Correspondents wanting reliable information relating to diseases of stock must not only give the symptoms as fully as possible, but also how the animal has been fed and otherwise treated or managed. In case of suspicion of hereditary diseases, it is necessary also to state whether or not the ancestors of the affected animal have had the disease or any predisposition to it.

In asking questions relating to manures, it is necessary to describe the nature of the soil on which the intended manures are to be applied; also the nature of the crop.

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

Notes from Exeter, Co. Huron.—The first crop to attract attention in this locality is flax. The proprietors of the flax will pay the farmers from ten to twelve dollars per acre for the use of land, the farmer doing all the plowing, harrowing, etc.; the flax man furnishing the seed, sowing and harvesting, and if the farmer cares to draw the flax to the mill, he is allowed two dollars per acre for doing so, and when the distance is great he must enter into an agreement to do so or his land will not be made use of. The farmers seem willing to furnish any amount of land on these terms, but the best only is accepted. Much more would be grown than at present if help was available for harvesting—the amount grown is governed by the help available for pulling. Wheat is a light crop, and will not exceed on an average fifteen bushels per acre, and the area sown is about fifteen acres to the hundred acre farm. Oats are grown to a much greater extent—probably twenty-five acres to the hundred—and is a grand crop. The yield will be much above the average; many fields promise sixty bushels per acre. Farmers here have heretofore given their attention to growing steers for shipping, consequently the dairy interest has suffered, but from the feeling at present dairying will receive more attention in the near future. Creameries, of which there are several located in the county, are viewed with favor. It is generally claimed that the difference in value between the milk returned and the whey is that much in favor of the creamery, as the butter brings as much money as the cheese from the same milk.—J. W. H.

Commercial Union and the Maritime Provinces.—I have been quite interested in your discussion of commercial union in the ADVOCATE, and also in the Dominion Farmers' Council. You seem to discuss it pretty much from an Ontario standpoint. We down here in these Maritime Provinces have different interests from what you have in Western Ontario. Our productions are somewhat different. The Eastern States seem to be our most convenient market, which is undoubtedly our best paying crop, and which would be much more remunerative to us if we had commercial union or reciprocity. In the matter of horses, eggs and lambs, the Eastern States are our market. Imperial federation or commercial union of the British possessions would not benefit us, as there is no duty on our exports to England now. The United States is the natural market for the Maritime Provinces, but their high tariff takes off the profit we might realize under commercial union. But I am not writing a newspaper article, but only sending \$1 for my subscription to the old ADVOCATE; and though we may not agree in all matters relating to trade, let me say that the ADVOCATE as an agricultural paper is second to none that I am acquainted with.—SUBSCRIBER, Bay View, P. E. I.

Yellow Heads in Hens.—Do you know of any cure for hens when their heads turn yellow; they remain like that a short while and then die? We have lost a great many like that. They have been getting wheat—boiled and raw, black barley, potatoes, red pepper and meat. If you could inform me of any cure for that ailment in your paper, you would much oblige an old subscriber.—J. A., Stockton, Man.

[The symptoms described are indefinite. The cause of the trouble is certainly not in the food, but likely in unhealthy quarters, or access to unwholesome water or food. Generally speaking, it does not pay to doctor sick fowls, but remove the cause. If the trouble continues, write, giving full particulars of house, water, etc., also the name of breed kept.]

Cheese Making in Hastings County.—In explanation of the within resolution allow me to inform you of what the cheese makers of this (Hastings) county are doing. Last fall about a dozen of our cheese makers met and talked over the advisability of forming an association of cheese makers, as it was felt that we did not know enough of each other's working to give the best results, either individually or collectively. Well, a committee was appointed to draw up by-laws for an association, and the cheese makers of the county notified to meet on a certain date, which they did. The by-laws were read and adopted with some amendments, and officers elected—a president (myself), a vice-president, secretary, treasurer, and seven directors, all of whom form a board of management. Our object was to raise the standard of quality in our county, and the name, 'The Hastings County Cheese Makers' Association, was given. We called a convention in March last, when about forty—being nearly the whole of the cheese makers of our county—were present, showing that we are on the way to make it a success. We had another meeting on Wednesday, 25th of May, principally to discuss and promulgate among our members (as many of them could not attend at this season of the year) some points on cheese making in warm weather. Having been a subscriber to your paper most of the time for several years, and seeing Prof. Arnold's paper in the May number of this year, I found it so good that I read it at the meeting, where it was conceded that in the opinion of these present it was the best of the Professor's many good articles. My object in writing this is not that it may be published, but that if you can see anything commendable in our action, you might advocate the formation of such associations in every district where cheese making is an important branch of industry. I forgot to say that although none but cheese makers are members, we invite the farmers and all interested to our meetings, and to take part in our discussions.

Foxboro, May 25th, 1887.

To the Editor of the Farmer's Advocate.

Moved by F. W. Brenton, and seconded by James Whitton, and unanimously resolved, "That this Hastings County Cheese Makers' Association do hereby exhibit their appreciation of the valuable papers appearing from time to time in your much esteemed paper, on dairy matters, and hope that your subscription list may be largely increased by our patrons."

I might say Mr. Brenton is one of our best makers and a solid man, and Mr. Whitton is our instructor for Eastern Ontario.—R. R., Tweed, Ont.

[We thank you for your obliging and encouraging letter. We have striven to be ahead of the times in dairy matters, and we are pleased to find that our efforts are appreciated. We heartily wish you success, and hope other farmers will be stimulated to follow your example in associated cheese-making.]

Breeding Horses—Oats for Colts.—Kindly answer the following questions: 1. The best age to raise a colt from a young mare. 2. Your opinion in coupling a draft mare with a blood stallion; what is the result generally? 3. Kindly inform me which is the best for a colt the first winter, ground oats or oats whole; how much per day should a colt have of oats? 4. Should a colt have saltpetre; if so, how much at a time?—D. McC., Barb.

[1. The young mare should be as near maturity

as possible by the time she drops her first colt; but if she is strong and healthy, she may breed a little earlier without danger of injurious results; however, it is better to err on the late than on the early side. 2. It is not desirable to make violent crosses in breeding. Thoroughbred stallions have various sizes and weights, and a draft mare may possess more or less weight. As a rule, the cross would produce undesirable results. 3. If you can teach your colt to masticate its food well, whole oats are better than ground. The colt, while very young, can be taught to masticate whole oats by feeding it in small quantities out of the hand. If it bolts the oats, mix them with bran, or grind them. This applies to horses of all ages. The daily ration is governed by the amount of exercise which the colt gets, and the quality of the other food. Hay alone will be sufficient, if of good quality; but small quantities of grain may be given with advantage. Bran is better than oats, but a change of food is desirable. 4. No healthy colt should have saltpetre or any other medicine.]

Ventilating Stables.—I would like to have your opinion about bank barns. I have one 65 x 30 ft., underneath which I keep all my stock; but they do not seem to do as well as when I kept them in an up-ground stable several years ago. I would like to know the best way to ventilate it, as it is rather damp, especially during the winter thaws. Would it be advisable to sheet it with boards on the inside? The situation is very favorable with regard to sunlight, and the ground is well drained.—J. M., Brockville.

The dampness in your stable indicates that it is not ventilated sufficiently, and that therefore unhealthy gasses must accumulate in it. Besides it is likely to be rather warm for the healthy growth of your stock, especially as they have been accustomed to cooler quarters. If a stable is well ventilated, the nearer it is kept at a temperature of 48° to 50° the better for milch cows. Fattening stock should have it a little warmer. Lining the inside with boards would have very little, if any effect, so long as the stable is not properly ventilated. A good plan to ventilate your building would be to construct four ventilators, one in each corner of the building, each leaving the stable at the ceiling, thence running in an upright direction till it strikes the roof, then along the under side of the roof at the gable end till each pair of them meets at the ridge board, where they pass out through the roof. This method of ventilation is greatly improved upon by leading, by means of an underground tube, warm, pure air into the building. The diameter of this tube must vary with the number of animals kept in the building, and its length is dependent upon its diameter; the larger the diameter the longer the tube must be; a length of about 200 feet is desirable for a tube 4-5 inches in diameter. This pipe should be laid beyond the reach of any frost, as when the earth surrounding it becomes frozen it loses its usefulness; both ends should come above ground, the one in about the centre of the stable, the other wherever the tube may end. The air when passing through this tube comes in contact with the unfrozen earth, and by it becomes warmed. Ventilation can only be accomplished when the temperature is higher inside than outside the building. Have slides in your ventilators to regulate the temperature.]

Please answer the following in the *ADVOCATE*: 1. What is the price per ton of lime, salt, gypsum, unleached ashes, and how many bushels in ton of each? 2. What is the price per ton of nitrate of soda, sulphate of ammonia, muriate of potash, sulphate of potash, kainit or potash salts?—NEMO, Welland, Ont.

[1. In this city air slaked lime costs \$4.50 per ton; gypsum, \$5.50 to \$6; land salt, \$4 to \$5; ashes (unleached), \$5. The number of pounds in a bushel of ashes is about 45, although it varies somewhat according to the percentage of moisture they contain. Lime (unslaked) has 80 lbs. to the bushel; but we know of no standard for gypsum, it not usually being sold by the bushel, and as it is very susceptible to moisture, it would be very difficult to establish a standard; however, an average bushel would weigh somewhat over 90 lbs. 2. The nitrogen in nitrates costs 18 cents per lb., and as nitrate of soda contains 16 percent of nitrogen, the cost will be \$57.60 per ton. The nitrogen in ammonium salts is about the same price as that in nitrates, and as sulphate of ammonia contains 21 percent of nitrogen, the price per ton will be \$75.60. Potash in high grade sulphate (containing 50 percent of potash) is about

6 cents per lb., making the sulphate worth \$60 per ton. The potash in the muriate (containing 53 percent of potash) is quoted at 5½ cents per lb., making the muriate worth \$56 per ton. Kainit varies considerably in composition, but the potash in it is worth about the same as that in the muriate; so you must know its composition by chemical analysis before the price per ton can be accurately ascertained. These quotations are exclusive of the freight charges.]

The First Reaper in Canada.—"On the Wing," in the July number of the *FARMER'S ADVOCATE*, you say: "Mr. J. B. Carpenter, one of the oldest settlers, on being called on, said that on his farm the first reaping machine imported into Canada did its first work. It was about 42 years ago. The cutting was done by a straight smooth knife, and the grain was raked off by hand." Now, we have always understood that the first reaping machine brought into Canada was brought into the Township of Hamilton, by the late Daniel McKeys, then of lot 21, in the second concession of said Township. The machine was brought in for the harvest of 1843, that is 44 years ago. The late John Wade brought in another reaper for the harvest of 1844. Both these reapers were "Hussey" machines, had knives with blades, the horses were driven tandem (one before the other), the sheaves were put off behind, had to be bound up before the machine came around again. Though the machine was hard work for the man to put off the sheaves, and also on the horses; it did as good and as neat cutting as any machine we have seen. Should you have access to a file of the "*Albany Cultivator*," in the May number for 1841, page 81, you will find a good representation of this old reaping machine. In 1847 we had a share in a McCormick reaping machine; it had a straight smooth knife, some of the knives had sickle teeth. In this reaper the horses drove abreast, the driver riding on one of the horses; the man that took off the sheaves rode on the machine, and put off the sheaves at the side, so that a whole field could be cut without binding up. This machine did not do as good work as the "Hussey" machine did. The late John Helm & Son made several reaping machines in Cobourg in 1848, on nearly the same principle as the McCormick machine.—W. R., Cobourg.

[The report should have read that Mr. Carpenter believed that the first machine imported into Canada did its work on his farm. If any of our readers know of machines introduced before the above mentioned date, we should be pleased to hear from them.]

Preserving Fruits.—Our fruit crops here, when ripe, must be gathered and marketed quickly, otherwise there is great waste. As it is, everybody's crop is marketed about the same time, hence small returns. I would therefore be glad to know from you, or the readers of your valuable magazine, which is the best method adopted under similar circumstances in your part of the world to keep the crop, say Lisbon lemons, so as to hit the markets when others have sold.—QUEENSLANDER, Brisbane.

[In Canada large fruits are preserved in cold storage, but there are some evaporators used for drying the fruit, and so preserving it. Small fruits are kept by drying or preserving with sugar, although we have been successful in preserving peaches in air-tight glass jars without sugar. We hope our subscribers in more tropical regions will send us their methods of preserving fruits for the benefit of "Queenslander."]

Green Feed—Service Capacity of Two-year-old Stallions.—Please answer through your paper 1. Is green feed good for a two-year-old stud colt and a three-year-old bull? 2. How many mares should a two-year-old stallion be put to without hurting him?—S. B., Pakenham, Ont.

[1. Nothing is better than green feed for any animal, but with regard to young stallions and bulls, they are apt to grow too "pot-bellied" if fed exclusively on foods that are very bulky. Some young stock are injured, not by the green food, but by too sudden changes from green to dry, or dry to green foods. The feeder should use his judgment in each particular case, watching carefully the growth and condition of the animal, as well as the state of its bowels, and regulate the feed accordingly. Feeding much green food to animals that are not accustomed to it may prove injurious. We would advise you to accustom all your animals to a regular supply of green or succulent food, but changes can scarcely be indulged in too often if judiciously made. 2. The fewer mares served by a two-year-old stallion the better. Strictly speaking, a stallion should not serve at all until mature, but if he has a vigorous constitution, he may be allowed to serve a few mares at two years old, but after a few services he should be taken away from the sight of mares for several months. A stallion that does not serve until mature usually lasts longer than when allowed to do much service before maturity.]

Stock Notes.

Mr. Robert Geary has just returned from Montana. He is about purchasing a carload of young bulls, a carload of horses, and three carloads of sheep. In the last shipment of stock he paid the United States customs fees amounting to nearly \$400.

Mr. W. Walker, of Ilderton, has just returned from England with an importation of Lincoln sheep. The wool from one of the yearlings measured 18 inches in length, and the fleece when shorn weighed 27 lbs. of clean wool; wool from the yearling ewes measured 16 inches. Mr. W. informed us that at the time he left England the crops were looking nearly twice as well as they did last year. They had plenty of rain, and not too much. He travelled through several of the counties. The drouth may have affected the crops since he left.

JERSEYS.—On the 1st of September, Mr. Valancey E. Fuller, of Oaklands, near Hamilton, Ont., will offer for sale the largest number of Jerseys ever disposed of in Canada. Mr. Fuller's herd has such a reputation both in Canada and the United States that this sale cannot fail to draw the largest gathering of Jersey men that has yet assembled in this country. Ladies who really desire the best cream, milk and butter, must have a Jersey. Notwithstanding all we have yet seen, the Jerseys hold their own in regard to quality, and for admirers of beauty in the bovine race, none surpass the beautiful Jersey and her calf. See advertisement in this issue.

Notices.

Messrs. Stevens & Burns, of London, Ont., claim to make a Traction that is now unsurpassed by any in the world.

The Prince Edward Island Exhibition and Fair will be held at Charlottetown, Queens County, on Wednesday and Thursday, October 5th and 6th, 1887.

Every young man and young woman desiring to become a book-keeper, short-hand writer or telegraph operator, should not fail to send for catalogue of the St. Catherine's Business College and become acquainted with the workings of one of the finest business schools of this entire country.

SUMMER EXCURSIONS.—At all principal railroad ticket offices will be found on sale, at low rates, during the tourist season, round-trip tickets, via the Burlington Route, C., B. & Q. R. R., to Portland, St. Paul, Minneapolis and all principal resorts in the Northwest; and also to Denver, Colorado Springs and Pueblo, Col. In addition, the Burlington Route runs at frequent dates in each month excursions to San Francisco, Los Angeles and San Diego. When ready to start, call on your nearest ticket agent or address Paul Morton, General Passenger and Ticket Agent C., B. & Q. R. R., Chicago, Ill.

THE DOMINION AND INDUSTRIAL EXHIBITION.—Our readers should bear in mind that all entries for the Dominion and Industrial Exhibition at Toronto in the live stock and manufacturing departments have to be made before the 13th of the present month. The prizes this year are the largest that have ever been offered at any Exhibition held in the Dominion and the number of entries will no doubt be correspondingly increased. The Exhibition Association and the Toronto City Council are expending \$35,000 in additional buildings this year to meet the increased demand for space occasioned by the combination of the Dominion with the Industrial Exhibition. His Excellency the Governor-General and Lady Lansdowne have promised to open the Exhibition on the 6th of September. Cheap railway arrangements have been promised the full two weeks; single fare for the round trip will be accepted every day and special cheap excursions will be run both weeks of the Fair. A full programme of all that is to take place will be published by the association in a few days. It promises to be the best show yet held by the Industrial Exhibition Association.

The Household.

How to Take Medicine.

Elizabeth R. Schofield tells how to take medicine as follows: Bitter tonics, such as quinine, should be taken half an hour before meals; iron, oils and acids, after meals, that they may be digested with the food. Iodide of potassium is always given after meals; it is said to be less liable than to disorder digestion.

Sleep a Preventive of Headache.

A writer in the Scientific American says: "Sleep, if taken at the right moment, will prevent an attack of nervous headache. If the subjects of such headaches will watch the symptoms of its coming, they can notice that it begins with a feeling of weariness or heaviness. This is the time a sleep of an hour, or even two, as nature guides, will eventually prevent the headache. If not taken just then, it will be too late; for, after the attack is fairly under way, it is impossible to get sleep till far into the night. It is so common in these days for doctors to forbid having their patients waked to take medicine if they are asleep when the hour comes around, that the people have learned the lesson pretty well, and they generally know that sleep is better for the sick than medicine. But it is not so well known that sleep is a wonderful preventive of disease—better than tonic regulators and stimulants."

Starving the Teeth.

"Teeth are just as easily starved to death as the stomach," said a lecturer before a Brooklyn audience the other night. "The fact is that you and your fathers have from generation to generation been industriously starving your teeth. In one way it is a blessing to have been born of poor parents. What food the poor give their children is of a variety that goes to make strong bones and teeth. It is the outside of all the grains of all cereal foods that contain the carbonate and phosphate of lime, and traces of other earthy salts, which nourish the bony tissues and build the frame up. If we do not furnish to the teeth of the young that pabulum they require, they cannot possibly be built up. It is the outside of corn, oats, wheat, barley and the like, or the bran so called, that we sift away and feed to the swine, that the teeth actually require for their proper nourishment. The wisdom of man has proven his folly, shown in every succeeding generation of teeth, which become more and more fragile and weak. These flouring mills are working destruction upon the teeth of every man, woman and child who partakes of their fine colted flour. They sift out the carbonates and the phosphates of lime, in order that they may provide that fine white flour which is proving a whitened sepulchre to teeth.

"Oatmeal is one of the best foods for supplying the teeth with nourishment. It makes the dentine, cementum and enamel strong, flint-like and able to resist all forms of decay. If you have children, never allow any white bread upon your table. Graham bread is made of whole wheat ground, not bolted, so that the bran, which contains the minute quantities of lime, is present. To make a good, wholesome, nourishing bread, take two bowls of wheatmeal and one bowl of white or bolted flour, and make by the usual process. Nothing is superior to Boston brown bread for bone and tooth building. This is made out

of ryemeal and cornmeal. Baked beans, too, have a considerable supply of these lime salts, and should be on your tables, hot or cold, at least three times a week. In brushing the teeth, always brush up and down, from the gum instead of across. Brush away from the gum and on the grinding surfaces of your teeth."—[Brooklyn Eagle.

One View of Sea Sickness.

A physician who for over six years has made a careful trial of all the so-called specifics for sea sickness, entertains little doubt that in a large majority of cases the imagination is the source of trouble. For instance, he has, on several occasions, seen ladies suffering from sea sickness before the ship had left its moorings in the docks, where there is not the slightest motion. Iced stimulants and the recumbent posture are the remedies he now employs.

Destroying Ants.

We know of no better way to get rid of ants than to trap them. This can be done by taking some bits of coarse sponge and sprinkling sugar in their cavities, and laying them near the ants' runs. The ants will visit the sponges in considerable numbers, and some lady member of the family, who will give the matter attention, should visit the sponges occasionally and pick them up quickly and drop them into a dish of hot water carried for the purpose. If this course is persisted in the ants will be caught and destroyed. Another way is to fill a few vials with sweet oil and sink them in the ground to the rim, leaving the mouth open. The ants like the oil and will sip it, but it destroys their capacity to breathe and they die of asphyxia. These two methods can be carried on at the same time.

Don't Despise Onions.

A mother writes: "Once a week invariably, and it was generally when we had cold meat minced, I gave the children a dinner which was hailed with delight and looked forward to; this was a dish of boiled onions. The little things knew not that they were taking the best of medicines for expelling what most children suffer from—worms. Mine were kept free by this remedy alone. Not only boiled onions for dinner, but chives also were they encouraged to eat with their bread and butter, and for this purpose they had tufts of chives in their little gardens. It was a medical man who taught me to eat boiled onions as a specific for a cold in the chest. He did not know at the time, till I told him, that they were good for anything else."

The above appeared in the Lancaster New Era, and having fallen under the eye of an experienced physician of that county, he writes as follows:—

"The above ought to be published in letters of gold and hung up beside the table, so that the children could read it and remind their parents that no family ought to be without onions the whole year round. Plant old onions in the fall, and they will come up at least three weeks earlier in the spring than by spring planting. Give children of all ages a few of them raw, as soon as they are fit to be eaten; do not miss treating them with a mess of raw onions three or four times a week. When they get too large, or too strong to be eaten raw, then boil or roast them. During unhealthy seasons, when diphtheria and like contagious diseases prevail, onions ought to

be eaten in the spring of the year at least once a week. Onions are invigorating and prophylactic beyond description. Further, I challenge the medical fraternity, or any mother, to point out a place where children have died from diphtheria or scarlatina, angina, etc., where onions were freely used."

Summer Drinks and Syrups.

Lemonade and orangeade should be made at least half an hour before using. Hand-crush the fruit in a wooden squeezer, though you have a dozen of ancestral silver, throw the skins and pulp into the juice, with plenty of sugar and pounded ice, cover and let stand till the ice has melted, strain through linen cheese-cloth two or three times till clear as crystal, then dilute just enough with filtered water, and set the pitcher in an ice-pail till wanted. Put cracked ice in tumblers of mousseline glass, and pour the champagne-colored fluid on it. Contrary to the general idea, the refined way of taking all iced drinks is through a long, bright straw, which saves the teeth from injury, gives the fullest flavor of every drop, and spares the sight of indiscreet beauty tilting her tumbler on her pretty nose, or Maximilian with a dewy moustache—banish the thought!

But we need not confine ourselves to lemons and oranges if we are temperance folk. The wide resources of modern house-keeping treat us to "jucent syrups, tinted with" pineapple, tamarind, pomegranate, mulberry, Kirchenwasser of cherries and all the home fruits. It is neither troublesome nor expensive to bottle syrups for the year's supply. A small domestic press of well-seasoned maple is very much needed, but any mellow fruit (and dead-ripe fruit is most desirable for syrups) can be crushed in a lemon-squeezer and strained through the linen strainer-cloth sold as cheese-cloth. I find it better than flannel for most uses, though the crystal clearness comes only by repeated straining, without squeezing, saving the pomace for jam. My mother's method for grape syrup answers just as well for cherries, white currants, strawberries, and all sub-acid fruits, which are pressed before cooking, cleared by straining well, and boiled slowly in a stoneware pan, adding a half-pint of crushed sugar to each quart of juice ten minutes before the hour's boiling is done. Cool before bottling, seal, and keep in a dark, cool place, an ice-closet, down the well, or in a pit dug in the cellar floor filled with sand.—American Magazine.

Boxing The Ears.

Boxing the ears is a too common form of punishment practised by irritable and ignorant persons, and it is almost always done in fits of sudden anger. I say done by irritable and ignorant persons, because it seems to me that no person of any information on the subject would allow their passion to get the better of their judgment in such a matter. The drum of the ear is of paper-like thinness; it may and has been, in numbers of cases, ruptured by a single slap on the side of the head, incurable deafness resulting. Says an eminent physician, "All strokes on the heads of children with an angry hand are brutal and criminal." In the same connection he adds that "a generous, wise and humane parent should allow a night to intervene between the commission of a fault on the part of a child and any decided punishment. The veriest thief should be allowed time, lest the law should be vindictive and wrathful. And shall a man or woman punish an unresisting child with angry inconsideration, with unreasoning wrath in the heart? It is monstrous."

Family Circle.

BONNIE LASSIE.

WRITTEN FOR THE RURAL PRESS, BY HOONOS.

Then don't be sorrowful, darling, Don't be sorrowful, pray; For taking the year together, my dear, There isn't more night than day."

Stopping his plow, a sturdy young man turned toward the house from which came the sweet girlish voice. There stood the singer, vigorously wielding the broom, not more than 50 yards away. She soon discovered that she was being watched. Laughing and shaking her broom at him, she called: "You'd better be at work, Bobby boy," and then inconsistently ran to speak to him.

"Good morning, Lassie," said the plowman, coming to the fence to shake hands with her. "Good morning yourself," she answered saucily, tossing back her curls. "Father didn't tell us you were coming to work this morning. O dear! That will be one more to cook and wash dishes for. How long will it take to plow this field?" With a teasing look, as though she were not delighted to see him. Then, with a sudden change of tone, she told him of a book she had just been reading.

"Now go to work, naughty boy," she added; "I've got to. The idea of idling here when you have all that cornfield to plow!"

With a backward, saucy look, the girl ran smiling into the house, leaving Rob, with a bright smile on his face, to continue the interrupted plowing. The checked shirt and blue overalls did not hide Rob Raymond's manly, well-built form; and the wide hat, set far back on his head, exposed an honest, steadfast face, with earnest, hazel eyes, a firm but pleasant mouth just shadowed by a young mustache, and a square, determined chin. It was not a handsome face, but one would trust it instinctively.

Lassie's real name was Douglas, after her mother's favorite brother. Though disappointed that Lassie was "only a girl," she was determined to give her the name anyway. "We'll name her Douglas, anyhow, father," she said to her husband, "and call her Lassie."

And "Lassie" she was from that day, and the name well suited the saucy, willful, lively girl. Merry blue eyes, a nose inclined to be celestial, a sweet mouth whose constant smiles disclosed even white teeth, a dimpled chin, all framed by the pretty brown curls, made up a face which was called the "prettiest on the creek."

Lassie and Rob had been friends and lovers since babyhood. Their parents had crossed the plains together and settled about five miles apart in the beautiful valley drained by Mark West creek. Now Rob's parents were dead, and the four boys, of which he was youngest, were separated. One had gone to sea, another studied law, the eldest tilled the home farm, and Rob was laying by what money he could earn by working out, to buy land for himself some day.

"And then, Lassie," he used to say, "I'll build me a pretty little cottage, and I'll go to housekeeping, won't I?"

"I don't know, I'm sure," would answer the teasing girl. "Will you invite me to the wedding?" When Rob would cast a reproachful look at her, she would make a saucy face at him and run away. They were not engaged, and hardly knew they loved each other; yet whenever they thought of a home of their own they unconsciously thought of each other.

Lassie sang all the morning, that pleasant April day, as she helped the child get ready for school, churned the butter, made the beds and assisted her mother in preparing dinner. When her father and Rob came in from the field, she peeped out of the door and saw that Rob alone stooped over the sink, washing his hands. Seizing a dipper, she filled it from the bucket by the door and sent the water splashing over Rob's brown head. How she laughed as he sputtered and shook himself! At the familiar sound, Rob looked up and started after her. Lassie ran, but was soon overtaken and caught in a pair of strong arms. She hid her face, but with one brown hand Rob held both of hers and kissed her soft cheeks until they glowed.

"There!" he cried, letting her go at last, "take that for your sauciness! You can duck me again if you want to."

"No, I won't!" She pouted, stamped her foot, and seemed ready to cry. "You're a bad, hateful boy, Rob Raymond, and I don't like you one bit!" She marched into the house with great dignity, but was not much comforted by her father's laughing. "Served you just right, Lass." The spoiled child ran upstairs to smooth her ruffled curls and temper, and in a few minutes came down and ate dinner as though nothing had happened.

Such quarrels were frequent between the two. But as it was usually her fault if Rob kissed her, Lassie never stayed angry long. As she was only 16 and Rob 19, the old folks looked on them as children yet, and thought nothing of their quarreling and quarreling.

After supper, Rob came into the kitchen and offered to wipe the dishes for Lassie. "No indeed," laughed the girl; "I won't have a great lazy boy around to bother me. Mother, make him go 'way and behave himself."

Mother only laughed and left them together, well knowing that nothing would displease Lassie more than to have Rob leave.

"Ah, now, please let me stay," begged Rob, "I'll be real good. Mother McLane doesn't care if I stay."

With that he seized the dish towels and tucked them under his arm.

Lassie shrugged her shoulders and yielded, as she always did, at last.

"Oh, well," she said, in a resigned tone, "if you will stay, you will, and I can't help myself."

"Poor girl!" murmured Rob, "I'm awfully sorry for you. I say, Lassie," said the gallant dish-wiper, as they put away the last tin, "they're going to have a grand time at the picnic, Mayday."

"Is that so? Are you going, Bobby boy?" "If I can prevail on your majesty to accompany me," and Rob made her a most elegant bow. "Bonnie Lassie, will ye gang wi' me?"

Neither Rob nor Lassie was Scotch, but he often tried to tease her about her name.

"I dinna ken," answered the provoking girl. "You'd better bide a wee, till I ken my ain mind. And while you're about it, do talk 'United States,' as Frank says, Bobby boy."

"I will, when you quit calling me 'Bobby boy.' And I'll quit that when I get ready," with an emphatic nod of the willful head.

The silence that followed was impressive but short. "Say, Lass," began Rob, "you haven't said whether you'd go to the picnic with me."

"I don't know. Frank may want me to go with him."

"Bother Frank! Do you suppose he'd want to go with his sister? Not much. He'll take Laura Mathews."

"You take Laura," coaxed Lassie, "and I'll go with Frank. Or perhaps you'd rather take Jennie Bennetts."

"Don't you want to go with me, Lassie?" asked Rob, reproachfully.

"I heard that you said Jennie was the prettiest girl on the creek," said Lassie, irrelevantly.

"Nonsense! Why, you know that no one in all this valley is half so pretty as you—bonnie Lassie," tenderly.

"Don't be silly, Rob," said the girl, smiling and dimpling with pleasure; for the rumor that Rob cared more for Jennie than for her had hurt her more than she would confess.

They went out on the porch to wash their hands. The moon shone softly upon the field of growing grain that sloped in the light breeze; upon the brown earth in the cornfield where Rob had been plowing; upon the lovely hills which surrounded the valley; and upon the rugged height of St. Helena, which rises beyond the hills.

"How beautiful!" said Lassie, softly.

"Beautiful!" echoed Rob, letting his eyes wander from the moonlit scene to the girl's face, which shone spiritual and tender in the silvery light. He came nearer to her, irresistibly drawn by the sweet face. But that broke the spell, and with a laugh she flitted some water in his face and then turned to the roller towel which hung near.

"Lassie, will you go with me Mayday?" pleaded Rob.

And Lassie, with feigned reluctance, answered "yes," as she had intended to all the time.

Mayday dawned bright and clear, and Lassie was as happy as a lark. For the weather had been cloudy and threatening, and she had feared she would miss the annual gathering.

In her pretty blue lawn, the girl reminded one of the shy, delicate nemophilas which tint the meadows. Rob looked his admiration when he drooped up and found her in the garden, fastening a big bunch of pink roses in her belt. He begged for one bud, and being in an indulgent mood, Lassie pinned the prettiest one she could find on his coat. Years afterward she found this bud between the leaves of the little Bible Rob's mother had given him on her deathbed.

"There go the Wilsons," cried Lassie, waving her hand to a wagon-load of young folks, as she and Rob drove down the lane into the road.

"And there's Jennie with Charley White," said Rob, with a sly laugh.

Lassie blushed, and, to change the subject, asked if she might drive. Rob, who would have given her his head if she had asked for it, surrendered the reins at once.

"Ah, bonnie Lassie," he sighed softly, "how could you suppose I admired any one more than you?"

Lassie's cheek dimpled, and the relentless tease proceeded: "But Jennie is a pretty girl. Such soft brown eyes, such a straight nose, such a smooth chin, and such glossy black hair in those pretty braids!"

By this time, Lassie was pouting and frowning most alarmingly. Seeing she was almost ready to cry with vexation and wounded vanity, Rob relented. The hood of the buggy hid them effectually, so Rob put his arm around her.

"Lassie," he whispered, "brown eyes have no charm for me while blue eyes smile on me kindly. Ah, don't shake those pretty curls over your sweet face. Let me kiss that dimpled chin."

"Rob, Rob!" cried Lassie, struggling to free herself from his arms. But she was driving, so could not use her hands. "Let me go: some one will see us. Oh, let me go! I'll hate you if you kiss me here!"

refuge in fierceness to keep back the tears. "You wouldn't treat me so if you had any respect for me. It is perfectly contemptible of you to use brute force in that way to get a kiss."

"I didn't know you felt that way about it," said Rob more meekly, "or I'd have let you alone. But as for its being contemptible, I don't think it's contemptible to kiss a pretty girl any way you can."

"It is!" cried the indignant girl. "It is shameful to take advantage of inferior strength in any way."

"And you needn't think," continued Rob, not heeding the interruption, "that my kiss showed any disrespect for you. You looked so sweet and kissable that I couldn't help myself. I am but human, dear; and as for respect—why, Lassie, I respect you as I do the memory of my dear mother."

Mollified by this double compliment, Lassie consented to smile on him once more. As the truce was sealed by a hearty hand-clasp, they entered the picnic grounds.

Who has not been to a country picnic? The rosy-cheeked May queen, the songs and speeches by awkward boys and bashful girls, are familiar to all. The grove commanded a beautiful view of the valley with its oak-dotted grain fields, its vineyards and orchards, and its numerous comfortable farm-houses. Through this peaceful scene the creek could be traced by its fringe of living green; while far in the distance the view was bounded by lofty hills clad in a mantle of majestic redwoods.

But the young folks, after lunch, careless of the view, impatiently waited for the tuning of the fiddle. When the merry dance tune at last rang out in the pure, sweet air, there was a hurrying to and fro, hunting partners. Rob sought everywhere for Lassie, and at last found her demurely flirting with a bright-faced young man, quite a distance from the picnic place. He took that the first net was forming, and went with Rob with such seeming reluctance that his sunny face was disfigured with a frown.

The scowl soon deepened, for, strangely enough, Lassie couldn't manage to keep any other dance partner. It was always "Just engaged, Rob—so sorry!" with a smile which belied her words. At first Rob chose other partners, but after one or two rebuffs he withdrew from the platform and watched Lassie with gloomy face. Cruel Lassie! When she scattered her smiles as recklessly as though she did not know how priceless they were to Rob, did she know what a storm she was raising in that young man's breast? She must have suspected, for whenever she caught sight of the frowning brow of her escort, she redoubled her smiles and shy glances.

The afternoon passed swiftly, and at last she spoke to the youth at her side.

"I must go home! Where's Rob? Oh, there he is by that big tree! Will you please take me to him?"

Reaching Rob's side, she dismissed her cavalier with a bow and a smile which left him in the seventh heaven of bliss, and signified to Rob that she was ready to go home. Without a word he helped her into the buggy and drove off. Lassie commented on the picnic, on the lovely weather, and on the people, but received no answer. Giving a scornful little laugh at this, she began singing, in a low voice, for her own amusement. They were passing a house where the thoughtful owner had placed a cup and a pitcher of fresh water on the gatepost, when Lassie spoke again.

"Rob! stop here," she said. "I'm thirsty. Please get me a drink."

He obediently stopped, gave her the reins, sprang out and got the drink. When he returned and would have taken the reins again, Lassie gave him a saucy look, as she started the horse and then held the reins out of Rob's reach.

"No you shan't have them," she said, "until you can behave yourself. Smile at me—speak to me. Don't sit there like a ghost at a feast or a bump on a log. What is the matter, anyway?"

"You have treated me dreadfully to-day, Lassie," said Rob. "You had no right to flirt and dance with those fellows so much."

"And what right have you to say what I should do?" said Lassie, scornfully. "Here, take these reins," she added, dusting her fingers as though contact with anything belonging to him had soiled them.

"In the first place," answered Rob, "I was your escort, and—"

"That gave you no right to dictate to me," interrupted Lassie.

"It gave me a right to more consideration than I received," said Rob, hotly.

"And I had a right to repay you for your conduct this morning," retorted Lassie.

The silence which followed was at last broken by Rob.

"It was cruel of you, Lassie," he began in a quieter tone, "to treat me so. You know I love you. You know my life is worthless to me without you, and you ought not to torment me by flirting with those boys as you did."

"How was I to know you loved me, pray tell?" said Lassie, still angry. "I'm sure you never told me so before, and I'd never suspect it from your actions. I don't believe you ever did care for me or ever will, and I'm sure I don't want you to. You have no right to dictate to me, sir, and I'll have you understand that I'll dance and talk and flirt with anybody I choose to, and you'll have to stand it as best you can."

Lassie became more and more angry with every word she spoke. Pettled and indulged all her life, she did not know what it was to be crossed or scolded, especially by Rob, who had always been her willing slave.

His unusual sentimentality that morning had startled and annoyed her, and now to have him

scold her was more than she could endure patiently.

"Is that all you have to say, Lassie?" said Rob, with set mouth and a pained look in his eyes. "Has my life-long devotion no value for you?"

"Devotion!" sneered Lassie. "Why, Gilbert Wright treats me better than you do."

They drove up to her gate as she finished speaking. Rob sprang out and helped her to alight. Then he turned to her, and, with the reins in one hand, held out the other in friendship.

"If you really feel that way, Lassie," he said sadly, "we had better part now forever. I'll go away somewhere and leave you in peace. You'll regret the way you have treated me some time, and feel sorry to think you have scorned an honest man's love."

"I wish you would go away, but I have no such hope," said Lassie, turning away from the outstretched hand. "You bother me dreadfully. If you stay here much longer I'll hate you."

With one reproachful look, Rob sprang into the buggy and drove away. As she saw him disappearing in the distance, she somewhat repented of her hasty anger. But, believing she would see him soon and "make up," she walked into the house with a triumphant step, feeling that she had at last conquered him.

Days passed, and Lassie neither saw nor heard from Rob. She began to worry secretly over this first serious quarrel with him. Two weeks after the picnic her father handed her a note which he had brought from town.

"I met Rob in town," he said, "and he gave me this note—some invitation, I s'pose. He looked sorter glum. Hadn't saved up as much as he wanted for that house of his—eh, girl?" and he pinched Lassie's blushing cheek ere she turned to run upstairs to read her letter in private.

Lassie had thought much in the last two weeks. Rob's absence and silence had taught her how much she would miss him if he were permanently estranged. Her fingers trembled with eagerness as she opened the note. It was short, but contained enough to make Lassie sink into a chair and turn faint and white.

DARLING LASSIE: Though you cast me off, I can't help loving you, and for your sake I am going away. You said that you wished I would go, and that if I stayed you would hate me. I can't stay and see you love another, and it would be worse than death to have you hate me. I am going to China and then to Australa, with my brother, and I never intend to come home again. I hope I'll be drowned, as life is worthless to me without you. Good-by, my darling, and may God bless my bonnie Lassie. Yours for life and eternity. **ROB.**

Lassie hid her face in her hands and sobbed, after the first shock was over.

"O Rob! dear Rob!" she moaned. "I loved you after all. How can I bear to have you go away?"

But remembering that perhaps he hadn't gone yet, she hastened down and out to the barnyard, without waiting to dry her eyes. There she found her 14-year-old brother.

"Henry," she said, "saddle up Beauty right away and then come to me! Be quick!"

"What's the rush?" he asked. "Who is going where?"

"Don't ask questions now. I haven't time to answer. It's very important. Do be quick, dear Henry."

Having started him, she hurried back to her room, and with trembling fingers penned the following:

DEAREST ROB: Don't go. I didn't mean what I said. I do love you, dear. Stay, and come back to your penitent.

This she sent, by Henry, to Rob's home, and then waited in a fever of anxiety for his return. She flew to her mother, and on that faithful breast sobbed out the whole story of the quarrel about nothing and Rob's sudden determination to leave. Lassie was blamed and soothed in the same breath, and was almost calm when Henry returned.

"He went to San Francisco on the train this afternoon," said the breathless boy. "But his brother will send the letter after him. It may catch him in the city, or else it will follow him to China. Say, I'm hungry. Supper most ready?"

After the first shock and intense grief at Rob's departure with anger in his heart, Lassie's hope sprang up brave and strong. She haunted the post-office for a week, feeling, with the confidence of youth, that Providence must arrange matters so that Rob would get her letter before he left the city. When this hope was killed by hearing that the steamer had started with Rob the very afternoon he had reached the city, and when she knew that he could not return until her poor little note followed him to China, then she felt the full force of her loss.

She began to read the Marine News in the paper, and whenever a ship arrived from China, she would go to the postoffice with renewed hope. The white-haired old man who distributed the mail would hand out the letters with a deliberateness which drove her almost frantic.

"That's a paper for J. P. McLane, an' a magazine fer Douglas M. McLane, an' two letters fer Mrs. Matilda McLane, an' that's all."

"Surely there must be a letter for me this time," pleaded Lassie. "Look again, grandsire—perhaps you missed it. Please look again."

But none came for Lassie, and she, poor girl, would go back to her home and her work with a fresh pain in her heart.

"Mother," she said one day, as they sat sewing, "do you believe I really love Rob? I miss him and long for him all the time, but my appetite is still good. If I love him so, why don't I grow pale and thin?"

"My dear child," answered her mother, with a tender smile, "you have a healthy mind and body. It is not the truest love that makes one peak and pine. Love should make one braver and better, and I have rejoiced to see you keep on at your work with such courage."

"But in books, the nicest girls always grow pale, and their eyes grow large and sad when their lovers leave them," insisted Lassie; "but I am as plump and rosy as ever, and my eyes aren't a bit larger."

"Your outdoor, active life keeps your appetite up," said her mother, "so your health is uninjured, thank heaven. But I have noticed one or two effects of your love."

"What is that, mother?" asked the girl, eagerly.

"Since the first absorption of grief has passed away, you have been gentler with the children; you have tried to control your hasty temper, and have tried to be more thoughtful for me."

"O mother!" cried Lassie, with tears in her eyes, "has there been any difference? No one knows how hard I've tried."

"I know, dearie," said the mother, smoothing the curly head.

"I knew it was my fault Rob went away," murmured Lassie brokenly. "I knew I had been hasty—unkind. I felt I ought to be different—try to do better—so I wouldn't have cause to regret anything else as I do this. O mother! I feel, like Cain, that my punishment is greater than I can bear."

Lassie sobbed on her mother's breast and was comforted.

Two years passed away, and Mayday dawned fresh and clear once more. A year ago, Lassie had stayed at home and cried herself sick at the memory of that other day. But to-day, her mother persuaded her to go with them.

When the dancing began, a bronzed and bearded stranger took his station under a tree to watch the dancers. The one his eyes rested on oftener was bonnie Lassie. At the close of a dance she happened to glance toward him. Through the disguise of thick beard and brown skin which had hidden him from all others, Lassie knew her lover. Her cheek paled with deep emotion. Quietly leaving the dancers, she approached him with outstretched hands.

"Rob?" she murmured beseechingly.

He hesitated, flushed, and finally took her hand as though against his will. To break the embarrassing silence, he took refuge in a commonplace "I'm glad to see you enjoying yourself, Miss McLane."

But Lassie, unconscious of any one but Rob, still kept her eyes fixed on his with a tender, pleading look.

"You have never forgiven me! O Rob!" she said, with a half sob.

"The people are all staring at us," said Rob, with a man-like dread of scenes. "I have a buggy here. Will you go with me?"

Without a word, Lassie followed him. Neither spoke until they were out of sight and sound of the picnic. Then Rob, turning toward her, saw her sitting, pale and trembling, with tightly clasped hands and unshed tears dimming her sweet eyes. All the accumulated bitterness and resentment of two long years melted away at the sight of Lassie's grief. He drew her to him and kissed the quivering lips.

"Darling Lassie," he whispered, "I love you still—love you forever."

"O Rob!" sobbed Lassie, "I loved you all the time."

Everything was settled, then and there, and for awhile the horse chose its own road, while the reunited lovers enjoyed the bliss which comes but once. When the horse tried to cross a deep ditch, the young folks descended to earth once more and entered into explanations. Rob had never received Lassie's note, but had wandered from land to land, trying to forget her, till, drawn by the love which would not die, he had wandered home again, with money enough saved to buy a farm.

Two months later the McLane house was greatly excited, for it was Lassie's wedding-day. Rob refused to wait longer.

"I want to be sure of you," he said, teasingly, "before you get mad again."

"O Rob!" cried Lassie reproachfully, "I never, never get mad at you now."

Lassie and Rob were alone in the parlor, when Henry brought in a letter for Rob. It was Lassie's note which had followed him everywhere, reaching each place just too late. They read it together, and Lassie dropped a shining tear upon it, but smiled the next instant, for Rob took her in his arms and kissed her, saying:

"Never mind, dear. It is a wedding present from Uncle Sam. And in spite of its failure to reach me before, we are now united in happy love, my darling Bonnie Lassie."

Enclosed please find two dollars, to pay my subscription to the *ADVOCATE*. I have taken the paper for so many years I don't like to give it up now, because I can't read it as I did in years past, when I was engaged in farming. I farmed for thirty years and quit in 1874.—**JOHN PEARSON, Sebringville.**

Enclosed please find one dollar, annual subscription to *ADVOCATE* for year 1887. The *ADVOCATE* is without doubt the best publication of its kind in Canada, and I am sorry that the farmers in this vicinity do not consult their own interests more by subscribing *en masse*, as they should do. Eulogiums are unnecessary, but let me wish you every success in your task of conducting such a noble and elevating magazine as the *FARMER'S ADVOCATE*.—**WM. J. PRATTEN, Venlo Farm, Maple Grove P. O., Que.**

Minnie May's Dep't.

MY DEAR NIECES.—The largest life is best nourished by a cheerful, tranquil enjoyment of each day that is given us, and how many of us have missed—or are missing—our best days in the vain hope that some time in the future we shall be happy—when the sky will be rainbow colored, and our paths flower strewn? Now, dear girls, just as likely as not many of you are unsatisfied dreamers, regarding your duties and surroundings as petty and distasteful, imagining that happiness lies just beyond your narrow horizon. When do you expect to be happy? When you have successfully passed this or that examination, or are in homes of your own? I am afraid the same haunting, unsatisfied spirit, if cherished now, will accompany you through life, darkening your brightest hours. Cultivate a cheerful, restful spirit, which is a gift of God to be sought and found. Your homes are very much what you agree to make them. Look around you. Lay hold of the duties lying nearest. Now is your heyday of youth. Don't waste its precious hours in vain repinings. Your trials are really for the most part imaginary. Self-pity, like self-love, is debasing. Think of your duty to your parents; how long they have toiled and waited for this crowning glory—the loving sympathy of children. A home without girls has been likened to a garden without roses; but what if the roses lack fragrance, and are too thickly set with thorns? Be greedy for the love of these turbulent young brothers, so that in years to come they will gratefully remember your loving influence. Proper pleasures and amusements are all very well, but it is not necessary that packing lunch baskets and laundering white dresses should occupy all your waking thoughts. Think of mother. She may not wish to join your picnic or garden parties, but a quiet visit to a sister or friend would be refreshing. See that she is becomingly dressed. Don't appropriate all the pretty gloves and ties. Oh! when will you appreciate the unselfish love of these untiring mothers? Never, I fear, until the same cares and duties rest on your own shoulders. Now, indeed, are your "good days." Let your conduct be such, that when in coming years you make a pilgrimage to the haunts hallowed by the memory of parents and brothers, dead and scattered, no self-upbraidings or remorse shall mingle with your musings on days of the past—gone forever.

MINNIE MAY.

Work Basket.

THE FIREPLACE IN SUMMER.—Much attention is now given to the treatment of the fireplace and mantel in both winter and summer, this portion of the room having begun to take on somewhat of the prominence and importance attached to it in the olden times, when it was the chief center of attraction in the home. Valances and chimney-curtains, fireplace screens of many kinds, hearth vases of large proportions and many other devices, have come into vogue within a few years for its concealment where unsightly, or its added ornamentation when of good and pleasant design. In the times of our grandmothers ornamental flouncings of tissue-paper, cut in lace-like patterns and decorated with bunches of artificial roses, concealed the empty grate or fireplace in the summer, or in some cases, and much more tasteful, boughs of green leaves

and jars of grasses and rushes filled it in with pleasant effect; or in lieu of these was the gaily-papered fireboard, showing marine pictures, gaudy flowers, or impossible landscapes or figure subjects. To-day these are entirely out of date, and the housewife, in their stead, hangs an embroidered or painted curtain before the empty grate, or stands in front of it a pretty screen in the shape of a single panel mounted on feet, or a two-leaved standing folding screen, a huge Japanese fan of brilliant coloring, or, perhaps, a yellow or scarlet Japanese umbrella.

If one has a divan or sofa without a back, a handsome effect will be given by hanging a richly-colored—say a garnet or olive-green—chimney-curtain from under the shelf of the mantel, letting it fall to the seat of the sofa, and then making two large, square cushions to stand up against it. In this case, the mantel-shelf should have a scarf, fringed heavily all along the front ends, a few inches of the scarf being allowed to hang down the front, so as to conceal the shelf, and the scarf to have long fringed ends, say about a foot and a half long. A long mirror, standing lengthwise on the mantel, gives a very pleasing background to mantel ornaments, and adds a touch of picturesqueness not to be obtained so easily by any other treatment. The frame may be of the plainest, a good glass being the chief requisite, and secure fastenings to the wall.

FINISH FOR LAMBREQUINS.—Gather acorns when they begin to fall, take off the stems, leaving the cup on. Then take thread, make a knot on the end and with a needle put it through the acorn, then cut the thread several inches from the acorn so that you will have thread to sew them to whatever you wish to use them for. Then gild them and they are ready for use and are very pretty, especially for points.

MIKADO LACE.—Make a chain of twenty-four stitches. First row. Three double crochet in fourth stitch, chain two, three double crochet in same stitch, chain four, one double crochet in tenth stitch from first shell, chain three, one double crochet in same stitch, chain four, one shell in last stitch of chain, chain three, turn. Second row. Shell in shell of first row, chain three, eight double crochet in three chain, shell in center of next shell, chain five, turn. Third row. Shell in shell, chain two, one double crochet between each of the eight double crochet, with one chain between, chain two, shell in shell, chain three, turn. Fourth row. Shell in shell, three double crochet between each double crochet in last row, shell in shell, then put eight double crochet with chain one between in chain five at end of second row, catch with single crochet in end of first row. Fifth row. One double crochet, chain three, one single crochet, all between the double crochet of last row, chain two, shell in shell, chain four, one double crochet between third and fourth groups of third double crochet in last row, chain three, one double crochet in same place, chain four, shell in shell, chain three, turn. Repeat from second row. Shell means three double crochet, chain two, three double crochet in same stitch. This lace is two and a half inches wide, and is very pretty. Insertion is made to match like the heading.

Recipes.

PICKLED PEACHES.—Seven pounds of peaches, two pounds of sugar, one quart of vinegar. Boil peaches in water until soft, then make syrup of

the vinegar and sugar, stick the peaches with cloves, and pour the boiling syrup over them and cover tightly. Plums may be done the same way.

FRUIT TRIFLE.—Put raspberries and strawberries together with any other fruit into a dish, cover with sugar. Next put a layer of macaroons, pour over them a nice custard which should be cold, place on the top the whites of three eggs beaten to a froth with some white sugar, and serve.

SWEET PICKLE APPLES.—Take one teacup vinegar and two of sugar, and make a syrup of them, adding cinnamon and cloves. Pare and cover sweet apples, drop them in the syrup and let them cook until tender, not soft. Put in a jar and pour the syrup over them. They are ready to eat as soon as cold, and will keep any length of time.

BET SALAD.—Place boiled beets in steamer over kettle of water until warm, then slice and cover with following dressing: Two quart bowl of sliced beets, three tablespoons melted butter, salt, pepper and mustard to season rather sharply, and seven tablespoons of vinegar. Cover bowl while warm and place in cellar or refrigerator to cool quickly as possible. A very nice salad.

CRACKERS AND CHEESE.—Toast crackers until crisp by placing in a hot oven, then over each place tablespoon of following cheese mixture: Melt one quarter pound cheese, add one-half teaspoon pepper, one teaspoon made mustard, one-fourth teacup butter, scant, one teacup sweet milk, one-half teaspoon salt. Heat very hot, and keep hot until served.

SWEET ONION PICKLE.—Take two quarts of small onions (red are good), soak in salt and water over night, sweeten vinegar enough to cover them, put in one tablespoon whole allspice, put all on the fire, let boil two or three minutes, put in air-tight cans.

GINGER ALE.—One cup brown sugar, one tablespoon ground ginger, one tablespoon essence wintergreen, one-half yeast cake, two quarts water; mix well together, stand in warm place three or four hours, bottle, and put on ice; when cold ready for use.

BAKED APPLE PUDDING.—Take four tart apples, sliced or chopped, put them in well buttered pudding dish, make a batter with a pint of sweet milk, a pint of flour, a pinch of salt, one teaspoonful of baking powder and two well beaten eggs; pour over the apples and bake. SAUCE: A half pint of water, let it boil, add a nice lump of butter, a little salt, half a cup of sugar, a little wet corn starch to thicken it like cream, a little yellow rind of a lemon and some of the juice; boil all together, and serve.

SAUCE FOR FISH.—The yolks of three eggs, one teaspoonful of vinegar, quarter of a pound of butter, a little salt. Stir over a slow fire until it thickens.

PEOPLE OF UNEXCEPTIONABLE TASTE.—The man who pronounces your dinner absolutely faultless. The photographer who says you are really one of the finest subjects he ever had. The visitor who remarks that your boy is the handsomest little fellow he ever saw, and that he bears a striking resemblance to you. The acquaintance who regrets that he has not your exquisite artistic taste. The individual who always laughs vociferously at your puns. The tailor who says it is a pleasure to make a suit for a man with a figure like yours. The lady whom you overhear whisper to a friend that you are the handsomest man that she knows.

A Reminiscence.

(Written by one of our Young Nieces.)

I sit me down to ponder
O'er days now long gone by,
As o'er infant scenes I wander,
A picture greets my eye:
On the palace walls of Childhood
'Tis by memory fondly traced,
And all through the long, dim future
'Twill never be effaced.

Nor could Bonheur's brush portray it,
Though of her art a queen;
Ah! no, 'tis only Fancy
Can well depict the scene.
A lovely summer even,
A placid azure sky,
The air embalmed with perfume,
The song birds flitting by.

A quiet, shady valley
On one side meets the view,
Where violets and wild iris
Add beauty by their blue.
On turning round, I now behold
Large fields of verdant green,
Two ranges of hills and a shallow rill
Which slowly winds between.

Dividing these two side-views
I see a road-way ridge,
Where the little chattering rivulet
Is spanned by a homely bridge:
Beneath its old gray timbers
The robin builds her nest,
And here 'neath this rustic canopy
She lulls her babes to rest.

A moment all is silent,
But the silence does not stay,
For soon the vale re-echoes
With voices glad and gay—
As the rippling, childish laughter
Falls more clearly on the ear,
Gaily tripping down the hillside,
Three little maids appear.

Their sunshades serve them little,
They hang around each neck,
And naught save wind-blown tresses
The little heads bedeck.
They perch upon the fence top,
And off come shoes and hose,
And three little sprites demurely
Show thirty little toes.

And now, prepared for playing,
They reach the bridge's ledge,
And leap with shouts of laughter
To the very water's edge.
Then up the little sleeves go,
And roguish little three
Say, " 'Tis we would our work begin,
And get ourselves some tea."

Nano prepares mud-pies to bake,
With sweet, unfeigned obedience;
While Puss declares some butter she'll make
Out of the same ingredients;
Josie, to help e'er willing,
Sallies forth with an apron-dish,
And boldly fords the streamlet
To try to catch some fish.

On, on toil the busy workers,
With ardor still undamped,
And soon are pies and butter
With tiny loe-marks stamped.
Now the repast is ready,
But they do not hungry feel,
So they say, their disapproval
Of their cooking to conceal.

Then these pigmy speculators
To this sage decision come:
"Our wares we'll sell to some passer-by
And get our teas at home"
All weary with their labor,
They welcome the glad call
Of mother, from the hill-top,
"Come home ere the dew-drops fall."

And now before mamma they stand,
Who each delinquent eyed,
And though a smile she can't repress,
Deemeth it wise to chide.
"Why did you bring your cousins there,
My naughty little daughter?
See the sad plight your clothes are in
From playing in the water."

Then sighing, thinks of her own bright youth
And pats each glossy head,
Saying, "Go and take your suppers now,
And run away to bed."
When sleep the tired lids have closed,
She kisses each snowy brow,
And murmurs, "Heaven keep our pets
As free from guile as now."

Then marvel not tho' gems of art
Adorn the rich man's hall,
Such scenes as this to the writer's heart
Are dearer than them all.
And would you know what happened
To these merry little elfs?
Two of them live in Almonte yet,
The other is myself—
NANO'S COUNTRY COUSIN.

Pakenham, June, 1887.

A Weeping Bridegroom.

The following description of an amusing bit of experience is given in "Reminiscences of a Soldier." A dinner-party was given to Colonel Stuart, just before his marriage, by some bachelor friends. In the hotel where the young men assembled a number of clergymen of the Presbytery of Aberdeen, then in session in the city, were staying.

Bent upon having a good time, the young fellows irreverently played what was termed the "cayenne trick" upon some of the worthy ministers. Colonel Stuart had sent to London for a new suit of clothes in which to be married. He wore the suit on this evening that he might do honor to his friends. We let him tell the rest of the story:—

"After the dinner I left Aberdeen and went to England to be married. My father-in-law was so well known in the town in which he lived that the roads to the church were crowded on the day of the ceremony, and the church itself was crammed. I took my place with my intended bride by the altar, and the ceremony proceeded. The clergyman got about half through, when having occasion to use my pocket-handkerchief, I put my hand into my pocket, pulled it out, and applied it to my nose. You can judge what my sensations were when I felt my eyes full of cayenne-pepper, the irritation of which was almost intolerable.

"On the night of the dinner-party at Aberdeen I had placed the paper of cayenne, with which we had committed the atrocities on the reverend gentlemen, into the pocket of my dress-coat, and had thought no more about it. On the morning of my marriage I put a clean silk handkerchief in that pocket, not remembering what I had placed there before. The cayenne had got loose from the paper, and consequently, when I applied the handkerchief to my nose, the miserable stuff flew into my eyes, and for a few moments caused most excruciating torments. Water ran down my cheeks in streams, and I dare not apply the handkerchief again, for fear of getting another dose. Meantime the audience was staring at me, and I heard whispers:—"Poor young man! how affected he is!" and other sympathetic remarks to the same effect. I thought the ceremony would never be over, and when it was finished the clergyman who married me came up, and, shaking my hand, said:—

"My young friend, I am sorry to see you so affected on this joyous occasion."

"Forgetting everything except my agony, I replied:—"Affected! not a bit! It's the cayenne-pepper that I had in my pocket!"

"I may as well add that I suffered for two or three days in a way I cannot describe, leaving some bitter recollections connected with the happiest day of my life, and as a punishment, I suppose, for our trick upon the unoffending clergymen."

MIXTURE FOR CLEANING GREASE SPOTS.—Equal parts of strong ammonia water, ether and alcohol form a valuable cleaning compound. Pass a piece of blotting paper under the grease spot, moisten a sponge, first with water to render it "greedy," then with the mixture, and rub with it the spot. In a moment it is dissolved, saponified, and absorbed by the sponge and blotter.—[Scientific American.

LEMON SAUCE.—The juice of one lemon, a half-cup of sugar, mix with a tablespoonful of flour, add a pint of boiling water and boil five minutes. Serve with nutmeg if desired.



Fern Culture.

Ferns are easily cultivated if a few practical details are observed. Growing in their native habitats, they are, for the most part, found in shady positions, where during their growing period they have an abundance of moisture at their roots; therefore, under cultivation, a shady window is for most kinds more suitable than a sunny one, and during their season of growth a good supply of water at the roots is demanded. While it is necessary for their success to have an abundance of water, they are at the same time very impatient of a stagnant soil, and to prevent any thing of the kind occurring, perfect drainage is indispensable. Not only is drainage a necessity in the cultivation of ferns, but it is also needed in the cultivation of all kinds of window and greenhouse plants after they have attained a certain size. No plants do I know, except aquatics, that succeed in a soil from which the water does not pass off freely. Plants growing in pots six inches in diameter and over, should have good drainage. This may be done by placing over the hole in the bottom of the pot a piece of broken pot, over this place more of the same material in small pieces. Instead of this, pieces of charcoal answer very well. Fill about one-fourth of the pot in this manner, and over the top place some moss or other rough material, to prevent the soil from mixing with the drainage, and thereby preventing the water from passing freely off.

The most suitable soil for ferns is a mixture of garden loam and black soil found in the woods, about equal parts of each, then with a good sprinkling of sharp sand through the whole, giving more if the loam is clayey and less if sandy.—[Vick's Magazine.

Very handsome frames for photographs, engravings, etc., may be had by gumming vines, berries or grains on ordinary pine frames, and gilding them with several coats of best gold paint. The effect is similar to modeling. Handsome panels are made the same way. Oak leaves and acorns may be bronzed or gilded with charming effect. The smaller pine cones and tassels may be used. The colored bronzes are very pretty when used for this work. The pine cone tassels as ornaments for valences or scarfs are unique and beautiful when bronzed or gilded. They are fastened with a small wire loop, also gilded. Acorns the same way. Carmine and green are the most showy of the colored bronzes.

Indian red is one of the best colors for a background of bronzes.

Being overworked is unpleasant and injurious to body and soul. But do we consider how beneficial is a sufficient amount of labor to keep our thoughts active and our muscles and nerves at a lively tension? How disastrous it would be for mankind if the necessity for exertion were removed. The vital forces would speedily decline, and people would not be the progressive, wide-awake beings they are now. Work is a blessing in disguise. It is acknowledged by scientists to be a preservative of life. Take a constant worker and an idler. Which looks the youngest and freshest? It will not be the one who has lounged through life without an object, except passing his time away, but the one who is striving every day to accomplish some allotted task, and who finds the hours all too short for what he would like to do with them. Work is stimulating to body and brain. It wards off a tendency to disease, raises us out of ourselves, and gives us something to live for. We cannot afford to live in idleness if we value our personal appearance, our health of mind and body, and the duration of our time upon earth.

What to Teach Your Daughter.

Teach her that one hundred cents make a dollar.

Teach her how to arrange the parlor and library.

Teach her to say "No," and mean it, or "Yes," and stick to it.

Teach her how to wear a calico dress and do it like a queen.

Teach her to sew on buttons, darn stockings and mend gloves.

Teach her to dress for comfort and health as well as appearance.

Teach her to make her sleeping room the neatest room in the house.

Teach her that tight lacing is uncomely, as well as very injurious to health.

Teach her how to cultivate flowers, and make and keep the kitchen garden.

Teach her to regard morals and habits, and not money, in selecting her associates.

Teach her to observe the old rule: "A place for everything and everything in its place."

Teach her the important truism, that the more she lives within her income, the more she will save, and the farther she will get away from the poor house.

Teach her that a good, steady, church-going mechanic, farmer, clerk or teacher without a cent, is worth more than forty loafers or non-producers in broad cloth.

Blouse waists are going to be very fashionable this season, not only for children, but for ladies.

White woolen dresses will be greatly in favor this summer, and there never has been a more delightful variety of cream white goods than the present season shows.

Always eat your food slowly, masticate well; sit down to your meals in good humor, as you go to bed, smiling and peaceful. Keep good natured, and never indulge in anger. This is the way to insure good digestion, sound sleep and long life. A violent passion racks the constitution as severely as a typhus fever.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES,—Since I last wrote to you you have, no doubt, had a very busy time. The "billowy bays of grass" and "seas of golden waves" have disappeared, and already the landscape whispers of autumn. As you have gathered the sheaves, have thoughts of another great and glorious harvest come to you—a harvest of which earth is the sowing-time and eternity the reaping-time—a harvest when the wheat shall be separated from the tares by the great Husbandman!

In my last letter to you I promised to speak of the objections that are raised—or rather the reasons that are given by boys and girls of the farm for not reading more. The second reason we often hear is that boys and girls are so busy that they have no time. My nieces and nephews, really have you not time? Be honest with yourselves in answering my question. Does not the time that you fritter away in a week in idle conversation or careless lounging amount to hours? I would not deny you healthful exercise. I am speaking now of hours spent carelessly and aimlessly by boys and girls who are endowed with soul faculties which should lead them to higher things. Some of my boys spend their leisure hours at the "corner"—some of my girls in idle gossip. There is, indeed, a class of people who never rise above the dead level of living to "eat, drink and be merry;" honest enough in their way, and good enough neighbors, whose intellectual palates feast sumptuously on the "common place of common things," and who never have a longing—never an aspiration for higher pleasures; but to those of you who are interested in these pages, such a life leaves an unrest, a disquietude, an unsatisfied feeling in regard to the way in which you spend your time. You know you could build better if you only would. My dear boys and girls, will you not "act in the living present?"

Objection No. 1, I think, could be easily overcome. I know in comparatively few farmers' homes is there a good supply of reading matter, and more particularly is the lack noticeable in just such works as I spoke of before—the best works of standard authors. There are but few boys and girls who by self-denial of some pleasure, or some article of dress, may not secure enough money to buy, from time to time, a paper edition of some good work. I know a well-bound book is more desirable, still the paper edition answers the purpose well enough. If, however, your parents are neither able nor willing to help you in this matter, ask the teacher in your section or the minister in your neighborhood for the loan of books. If you are in earnest, either of these worthy the name of teacher or minister will be glad to assist you. If you are willing to improve, you will be surprised to find how many hands will be stretched out to help you. There can be no sweeter consciousness than to know that one has been helpful to another in the onward, upward struggle; the knowledge is, indeed, in itself an exceeding great reward. I wonder sometimes that some of those who have the spiritual or intellectual oversight of young lives can be so careless of, and unsympathetic with, the aspirations of unfolding minds.

In order that the sentiment I have written may bear practical fruit, will my nieces and nephews act on the following suggestion; I

would ask you during the month of August to read Longfellow's "Evangeline," and as you read it make quotations. I shall read it, too, and in September we shall compare quotations. Who will join our ADVOCATE circle and read the masterpiece of America's greatest poet with UNCLE TOM?

Puzzles.

1.—HOUR GLASS.

Diagram. 1. A picture taken by sunlight on metal. 2. Motives. 3. An aromatic tree. 4. To leave behind. 5. To mature. 6. A small spot. 7. A vowel. 8. A girl's name. 9. An American prima donna. 10. Takes. 11. To unload. 12. A narrow frame let down through the bottom of a small vessel. 13. In conformity to syntax.

Diagonals—Down left, irregularly; down right, The quality of being important; central, A second appointment. FAIRBROTHER.

2.—SQUARE PUZZLE.

Diagram. 1. From 1 to 2.—A very rich man. 2. From 1 to 3.—An inhabitant of a mountain. 3. From 1 to 4.—A curse. 4. From 2 to 4.—To cry out. 5. From 2 to 3.—What some do at election time. 6. From 3 to 4.—Submission. A. HAWKINS.

3.—CURTAILMENT.

Astronomers can clearly prove My whole is ever on the move, The word curtailed, beyond dispute A joker's toll will constitute, curtailed again, and then I ween A form or model will be seen. HENRY REEVE.

4.—LADDER PUZZLE.

Diagram. Initials—The same. Final—An enterprise. 1st rung—Challenged. 2nd rung—Means to strengthen. 3rd rung—To send in. 4th rung—Subsequent. ARTHUR T. REEVE.

5.—CHARADE.

Away far up in the mountains stands a hovel old and gray, In it, with careworn visage a lonely first doth stay; Second enough, a better habitation he might have, But crouches 'neath this leaking roof like hermit in a cave; He knows not daughter's tender care, nor kiss of loving wife, Ah, well may they who know him say, "Total is his life." ADA ARMAND.

6.—TOP PUZZLE.

Diagram. 1.—An animal. 2.—A unit. 3.—To obtain. 4.—Kindness. 5.—To tell. 6.—Imaginary. 7.—To affirm. 8.—A consonant. Primals—The worship of idols. Centrals—Flavored cream concealed. FAIRBROTHER.

7.—FLOWERS ENIGMATICALLY EXPRESSED.

(a)—An entertainment and a boy's name. (b)—A pipe and a girl's name. (c)—Frozen vapor and to tumble. (d)—An evergreen tree and a joint. (e)—A sweetmeat and a cluster of hair. (f)—A disease and not many. (g)—To spoil, a vowel, a mineral. (h)—Neat, a vowel, and an exclamation. HENRY REEVE.

8.—CHARADE.

As through the grove I wandered, Down towards the dell, I saw a large number of FIRST, Looking fat and well. For they were gently grazing, All the TOTAL from the green, So not one little flower Was left to be seen.

And I was gently singing, And as happy as could be, When an insect lit upon my SECOND, And stung it, don't you see? L. F. REDMOND.

9.—HIDDEN BIRDS.

The cow lost her bell, Hannah awkwardly upset the pail, He went from Dover to Boston, The widow rendered her assistance, Seth rushed over the meadow, Success crowned their efforts. LIZZIE C. WATT.

10.—CHARADE.

My first gives life and joy, and makes The feathered songsters vocal; Without my next we should not have a habitation, Of usefulness my whole can boast, To sailors on a rock bound coast. ARTHUR T. REEVE.

Answers to July Puzzles.

1- J L 3- A P E ut nel CRY b r b TOP i rate ANT I P O D E S l r PR O P A G A T E e m m e t E G R E G I O U S e y C A T S T Y S E E

Names of Those who Sent Correct Answers to July Puzzles.

Mary Morrison, Henry Reeve, Robert Wilson, Adolphus B. Pickett, A. Hawkins, Arthur T. Reeve, Ada Armand, Hugh Barrett, Helen Connell, Wm. B. Anderson, Tillie Herrett, Emma Dennee, Drusilla A. Fairbrother, Henry Willson, Russell Ross, Alice Lester, Frances Wollbone, Nellie Collins, Emily Bright, Maud Wheland, Flora Harrison, Lily Easton, Sophie Newington, Fred Moore, Byron Webber.

He Got the Wrong Box.

A Winnipeg man recently went for a day's fishing to Rat Portage, says the Winnipeg Call, but had no particular reason to congratulate himself on the size of his catch. Returning to the station he caught sight of a box of fish belonging to another gentleman, a friend of his, and which was destined for Winnipeg. In a few moments he had labelled the box to his own address here in the city. Shortly afterwards the real owner came along, and spying the label on his box, at once grasped the situation and cast about for means of retribution. An idea speedily occurred to him, and obtaining another box about the same size as the former, he filled it with about one hundred-weight of stones, stitching up in canvas, and removing the label which had been placed on his box by his friend, affixed it to the box containing the stones. The fish box he duly addressed to the Queen's hotel, where both were staying. In due time both cases reached their destination. The charges on the one addressed to the first man amounted to about \$3, but these were cheerfully paid, in anticipation of a grand potful of fish. The charge on the genuine article amounted to fifty cents. The story got out and there is one man in Winnipeg who will buy his own fish when he goes fishing.

HOW TO MANAGE IT.—Little Dot: "Mamma, can I get married to Dick when I grow up?" Mamma: "Why, I suppose so, pet, if you want to." "I think it will be a good plan." "Why?" "Cause we can get all our quarreling over while we's little."

For the Advocate.

The Twins.

It would be impossible, in a short sketch, to give any idea of the character or appearance of Dinnie Shelly. In person he was tall, with a sort of droop of head and shoulders, large, benevolent, blue eyes, and a very high bald forehead; altogether he had rather a patriarchal appearance. Soon after his arrival in Canada, he had the misfortune of losing his wife—Kittie—a gentle little woman, an affliction which Dinnie, to his dying day, never ceased to deplore, always speaking of her with the greatest reverence as, "The woman that's dead," "Grace be with her."

A little girl, Catherine, was the only fruit of this marriage, a shy, loving child, with dark gray eyes, and brown hair lying in rings on a forehead fair as a lily. Dinnie, like most widowers, affirmed that everything was going to "wreck and ruin," without a woman in the house, and accordingly set about finding a second help-mate; but when a man is no longer young, and without much worldly goods to back up his suit, he is not expected to be very fastidious, and so Dinnie was fain to content himself with a widow—a woman every way Kittie's inferior—who had one son, Tom. It was evident from the first that little, delicate, gentle Kitty was no favorite with her stepmother, whose willing slave she became. It was as gall to her to see Dinnie pet the child, or hear him say she was growing like her mother; with all the spite of a petty nature, she would badger and persecute the timid little creature, till Dinnie often threatened, well as he loved her, to give Catherine to some family as their adopted child, but no good home offering, things went on as before. Dinnie's house stood just on the roadside, and the few stony acres stretching in the rear barely yielded a support to the fast increasing family—for "little ones went forth like a flock," and

each returning summer saw a board ingeniously placed across the door, for the purpose of imprisoning a toddler just essaying to use his legs. Dinnie was a general favorite, and took a fatherly interest in all the young people of the neighborhood, scolding them heartily if he thought they deserved it, and keeping an eye on them generally. If any of the neighbors were from home of a night, Dinnie would go over unasked and see to things, and "keep the children from playing hurly," as he phrased it. In winter a job of threshing was always ready for him, and in any hurry of work his presence was indispensable.

The boys made it a rule to assemble and harvest Dinnie's scanty crop, feeling themselves amply repaid by his hearty "long life to you, boys." Just across the road from Dinnie's, was the farm of a Mr. Blair, a wealthy bachelor. This gentleman was often prostrated with attacks of rheumatic gout, yet the farm work went on with the regularity of clock work, for Mr. Blair possessed what the Yankees call faculty, as well as money, and a warm heart, notwithstanding his gruff, crusty manner. Seldom did any one visit him, and he appeared quite satisfied that people should stay away; happy with a book and

The last straw is said to break the camel's back, and Dinnie felt that the last straw had been added to his burden when one day, as he was digging in Mr. Blair's garden, a messenger came to tell him that he had two more mouths to feed—a boy and girl had arrived at the little house by the roadside, and the board had never been taken down at all, as little Johnny was just beginning to walk. Sticking the spade in the soil, he commenced mopping his face with the big blue handkerchief which he always carried in the crown of his hat, and in a crest fallen way took his way homeward. Yes, there they were, sure enough—one in each end of the cradle, presided over by Susy Lucas, a widow neighbor.

"There they are," said Susy, "two as fine children as heart could wish. You ought to be a proud man this day, Dinnie."

"Och, Shusy, one of them would ha' been enough—with a blessing," returned Dinnie, as he sat regarding the new arrivals with a look of resignation.

"And who's to care them, and I killed out and out with the others," complained Mrs. Shelly from behind the bed curtains.

Catherine was hanging delighted over the cradle. To think that any one could be otherwise than pleased, roused her.

"I'll mind them my own self," she said indignantly, "Yes, indeed, I'll take them out with Johnny, and they shan't trouble anyone."

"Well, well, you are a good little thing anyway," said Susy; "go, take Johnny out with you while I get your father's dinner, for fraid he'd maul them and I not lookin'. He's as med up with them as yourself indeed." Katie took up her brother and went over to tell her friend, Mr. Blair, the good news.

"Come in, come in, Kittie," he said, as she stood shyly in the door; "and put that boy down. I wonder you aren't dead, child, lugging that great fellow."

"Oh, I'm not tired at all, Mr. Blair," said Kittie, whose delicately flushed cheeks belied the assertion, "and I'll have to do more than ever now. For what do you think, we have two more babies at our house, a wee boy and girl."

"No, Kittie—well, if that isn't too bad. I'm sure you would be better without them, child. Don't you wish they had staid away."

"Oh, no, indeed, and I'm sorry father and mother don't seem more pleased; but it'll soon be different when they can play like Johnnie here, and I mean to mind them myself; and now may I rub your foot?" and the gentle little woman



SUSY LUCAS PRESENTING THE TWINS TO MR. BLAIR.

carefully unbandaged and tenderly chafed the painful member with liniment.

"Does it do any good?" she asked wistfully. "Your little soft hand always makes it easier, little Kit."

"Well, then, I'll come every day," she said pleasantly, "and Mr. Blair," she said shyly, "wouldn't you like to see the babies, because your lonesome, you know, and they're so nice."

Mr. Blair laughed, but there was something in the serious eyes that rebuked him.

"Well, yes, Kittie, I believe I really would like to see them," he said, smiling.

"Well, then, I'll coax Mrs. Lucas to bring them over; she's minding them now," and Kittie went home delighted.

One fine morning when the twins were a week old, Kitty presented herself, carrying Johnnie, as usual, and followed by all the others in clean frocks and pinafores, and Susy Lucas in stuff gown and a black ribbon round her cap, bringing up the rear with a baby on each arm.

"All the others wanted to come, Mr. Blair," whispered Kittie. "I thought you wouldn't mind; and now put your foot on this stool and look at the babies; aren't they nice? The wee boy's face is just like the pale sweet william in your garden."

"Well, what if we call him William, Kittie, and the girl Mary?" said Mr. Blair, thinking of another Mary who had been dear to him, and whose loss had left his life empty.

"Oh, such pretty names for them! I'm sure father will like them," and Kittie held Johnnie on her shoulder, and the others crowded round in high glee.

"They're fine childer intirely," said Susy, "but they're a heavy handful for a poor man, sir."

Mr. Blair's head was full of queer plans that day.

"Go, Kittie," he said, "and bring your father here."

In a few minutes Dinnie entered, smiling, ready for a siege of friendly banter, but Mr. Blair was serious.

"Didn't you tell me Dinnie, that Griffith wanted to buy your place?"

"I did indeed."

"Then let him have it, and you rent mine just as it stands; I won't be hard on you. You see I have property in the State of Ohio, and I have a sister there; and when a man is getting old, he likes to be near his own. But first, you must promise to give me my little nurse, Kittie, here, or it's no bargain; I want her for my own daughter; the fact is, I can't have her killed with these twins. You can make your home with Mrs. Shelly. Mrs. Lucas, I'll see that you are recompensed, and help her to rear them."

Susy, who was a "lone woman" earning a living by nursing the sick, gratefully answered, "hear that now," and Dinnie mopped his face with the blue handkerchief, and said solemnly, "long life to you, sir." Dinnie's boys would soon be able to help him, and Catherine being assured that Mrs. Lucas would devote all her time to the precious babies, agreed to accompany her adopted father to the States, where she was kindly received by his friends.

Mr. Blair gave her an excellent education, and felt well repaid by her devotion and love. William and Mary grew up like wayside blossoms—not in the little cabin by the roadside—but in Mr. Blair's comfortable farm house, and when Dinnie, now a prosperous farmer, would indulge in a romp with them, he would exclaim, in gleeful wonder: "And was it I that begrudged you the bite and the welcome, you darlings; sure if I only knew the blessing you'd bring, Allannas, I wouldn't have cared a taste, if instead of two you had been four."

BULLER.

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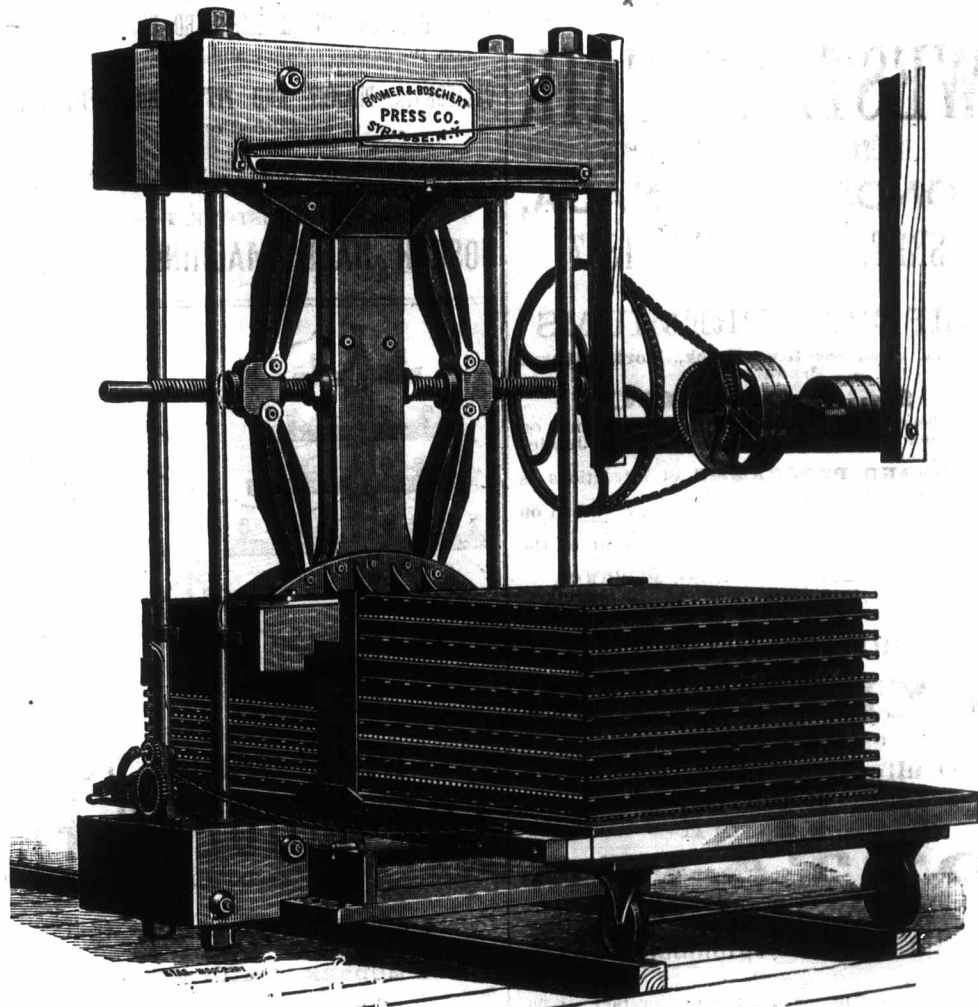
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WESTERN FAIR

INDUSTRIAL and ART EXHIBITION,
LONDON, CANADA,
SEPT. 19th to 24th, 1887.

LIBERAL PREMIUMS

will be given for Live Stock, Horticultural Products, Etc.

\$60,000.00

have been expended in erecting new buildings on the Queen's Park for the forthcoming Jubilee Exhibition.

A GRAND PROGRAMME of attractions is being prepared by the Committee.

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This exhibition will be the great event of the season. Wait for it.

A. W. PORTE, GEO. McBROOM,
President. Secretary.

42nd PROVINCIAL EXHIBITION

UNDER THE AUSPICES OF THE
Agriculture and Arts Association
of Ontario.

—TO BE HELD AT—
OTTAWA

—ON THE—
19th to 24th September, 1887.

Entries must be made with the Secretary, at Toronto, on or before the undermentioned dates, viz.:
Horses, Cattle, Sheep, Swine, Poultry and Agricultural Implements, on or before Saturday, August 20th.

Grain, Field Roots and other Farm Products, Machinery and Manufactures generally, on or before Saturday, August 27th.

Horticultural Products, Ladies' Work, Fine Arts, etc., on or before Saturday, September 3rd.

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

HENRY WADE,
259-b Secretary Agriculture and Arts Association.

Read "Advantages of Fall Plowing," by HENRY STEWART, free to farmers who name this paper. Address, DUANE H. NASH, Millington, New Jersey. 260-b

2nd-HAND MACHINERY. Descriptive Catalogue sent free on application.
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—1887—
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The Oshawa Mowers.

They surpass all other mowers in workmanship, quality of material, excellence of construction, and performance of work.

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The best threshing machines in America. They do the largest amount of work, and thresh cleaner than any other machines can do the work. In excellence of construction they are unequalled. They are the best made in Canada, and are only equalled by their namesakes in the United States.

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The best in the market for horse-powers.

Champion Reapers

of well-established repute. Only a few remaining.

WOODBURY, OR DINGEE, IMPROVED HORSE-POWERS,

now the easiest running and best in the world, also the

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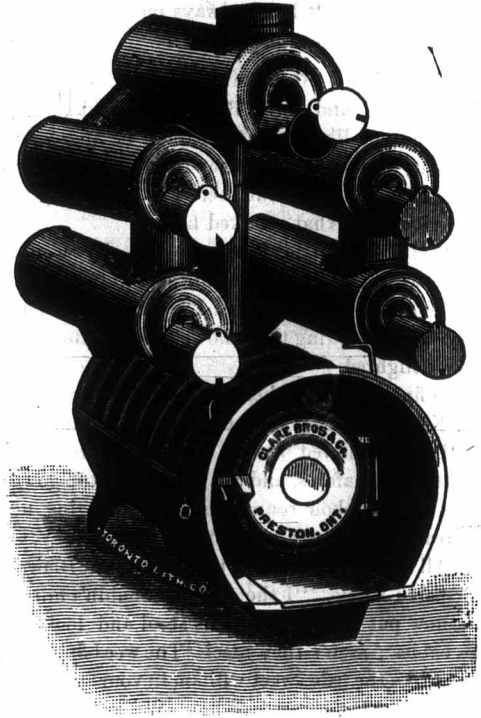
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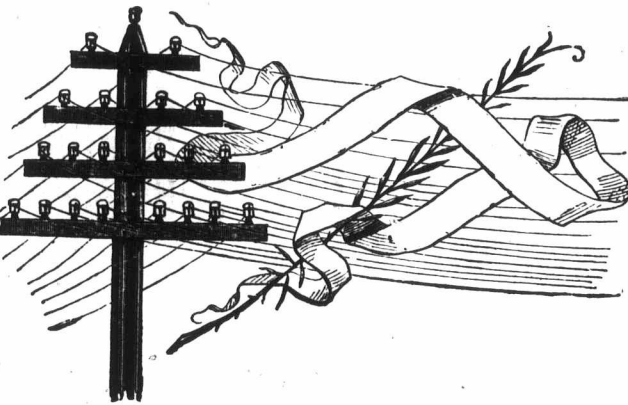
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This furnace, made in eight sizes, is unequalled for Efficiency, Economy, Ease of Management and Durability. Is corrugated and made very heavy. The Drums are of Sheet Steel. Will save first cost within a few years, as the roughest kind of wood may be utilized. This is the only furnace made that can be cleaned out at any time satisfactorily. Its heating capacity is enormous, there being more radiating surface than in any other wood burning furnace made. Write for illustrated catalogue of the largest and best variety of Hot Air Furnaces and Registers manufactured in Canada.

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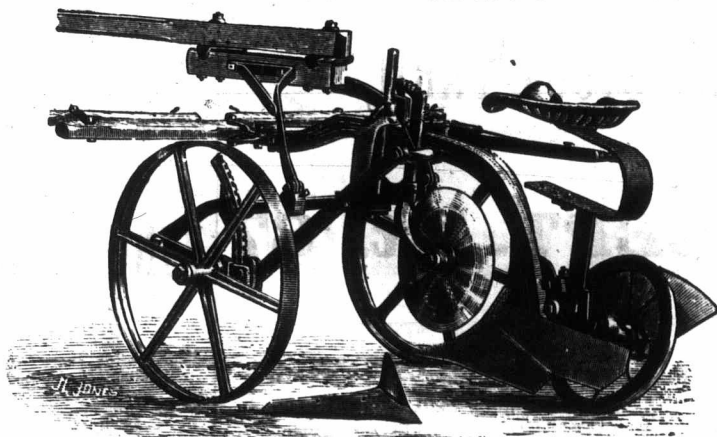
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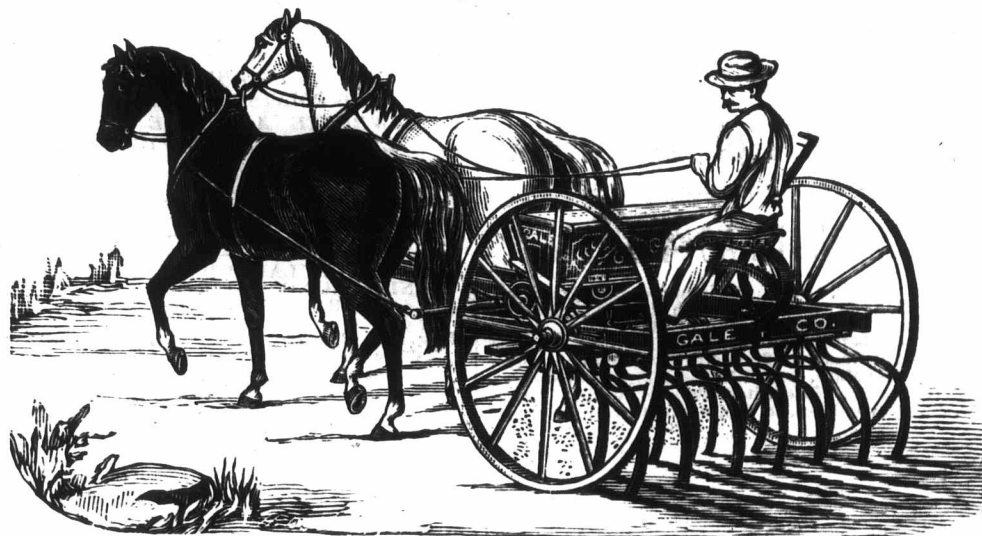
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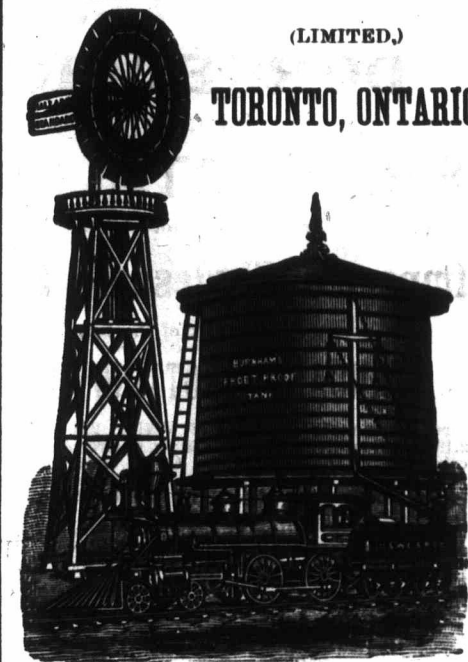
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Geared Windmills for driving machinery, pumping water, &c., from 1 to 40 horsepower. Send for Descriptive Catalogue. 265-y

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THOROUGHbred STOCK
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—ON—
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THE JERSEYS INCLUDE

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We will offer for sale a draft of

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Sire, Warlock (1387) brother of Viking, 2.20¼; g. sire, Belmont (64), sire of Wedgewood, 2.19; Netwood, 2.18¾, and twelve others in 2.30; g. g. sire, Alexander's Abdallah (15), sire of Goldsmith Maid, 2.14, and four others better than 2.30. Dam, Grace Galloway; she by Happy Medium (400), sire of Maxy Cobb, 2.13¾; Busy Medium, 2.20¼; Brigadier, 2.24¼, and twenty-three others better than 2.30; he by Rysdyk's Hambletonian (10), sire of Dexter, 2.17¼; Nettie, 2.18; Orange Girl, 2.20; Gazelle, 2.21, and thirty-five others better than 2.30. dam Princess. Grace Galloway's dam, County House Mare, dam of Nettie, 2.18; she by Seeley's American Star (14), sire of four better than 2.30. Warlock's dam, Waterwitch, dam of Viking, 2.20¼; Mambrino Gift, 2.20; Scotland, 2.22¼; Wavelet (trial) 2.38¼; she by Pilot, jr. (12), sire of three in 2.30, and of the dams of Maud S., 2.8¾, Jay-Eye-See, 2.10.

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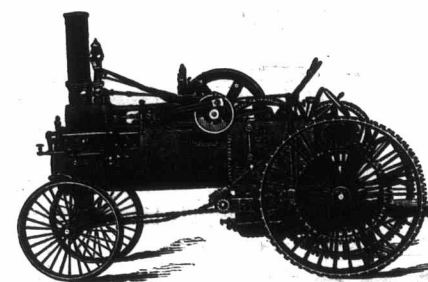
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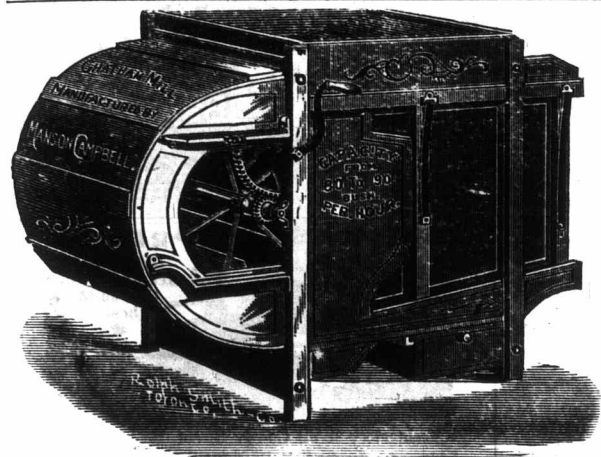


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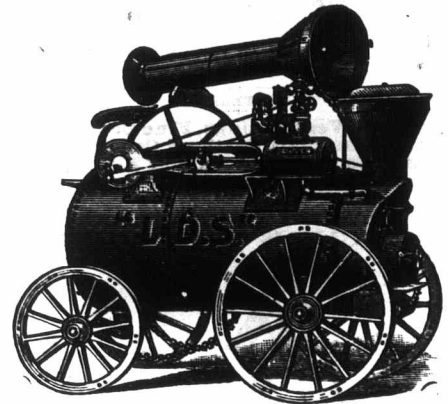
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 On it there is a good log house, stable and well; 45
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Also, south-east 1/4 of Sec. 15, Tp. 7, Range 15, west
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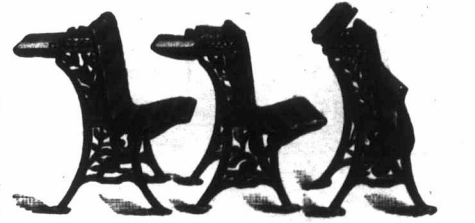
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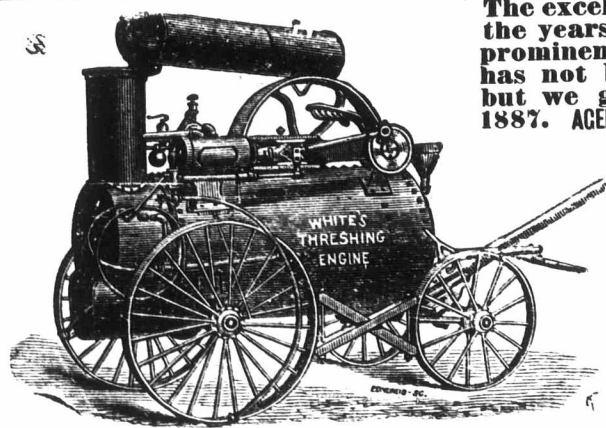
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It is licensed by all Insurance Co's and has proved itself to be the most durable.

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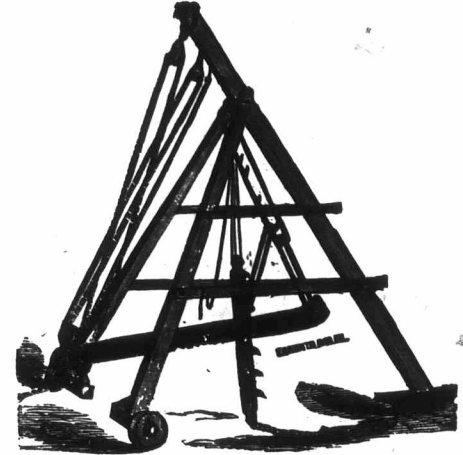
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It leaves no holes to fill up, or any stumps or snags in the ground.

Send for circular of testimonials and particulars about it before purchasing an inferior machine.

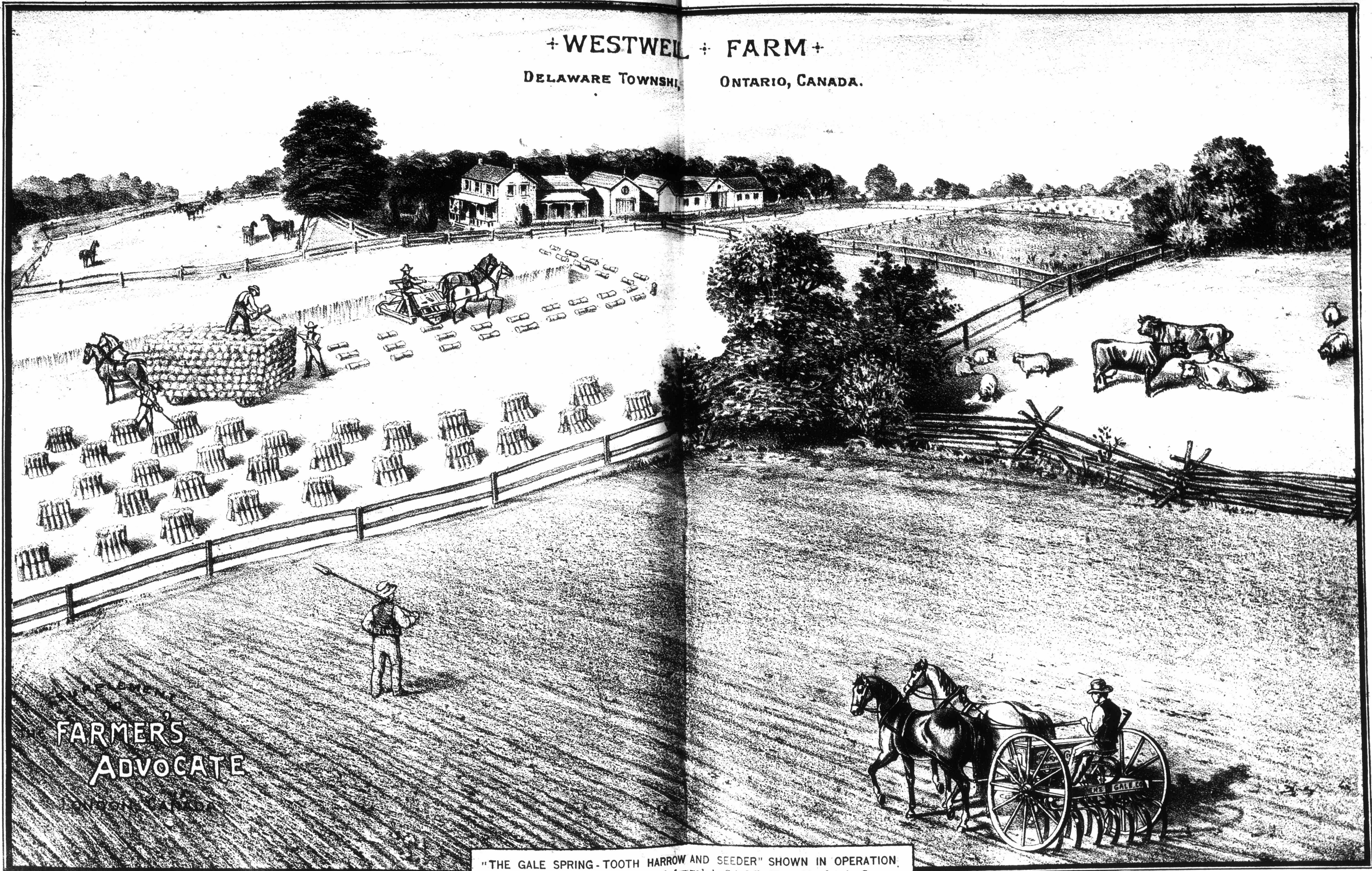
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