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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 cliques or parties, handsomely illustrated with original engravings, and furnishes the most profitable, practical and reliable information for farmers, dairymen, gardeners or stockmen, of any publication in Canada.

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THE FARMER'S ADVOCATE,
360 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.—It is not necessary for essayists to agree with our policy, so long as they give sound reasons for differing from us.

3.—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.

4.—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, the sum being decided by ourselves in each case, and the essay will appear in the same or in a succeeding issue.

Our prize of \$5.00 for the best original essay on *What Out-door Work should Farmers' Wives and Daughters Perform?* has been awarded to Miss J. D. Thomson, Brooklin, Ont. The essay appears in this issue.

A prize of \$5.00 will be given for the best original essay on *The Best Education for Farmers' Sons and Daughters who Remain on the Farm*. Essays to be handed in not later than June 15th.

A prize of \$5.00 will be given for the best original essay on *Agricultural Exhibitions as Educational Institutions for the Farmer and his Family*. Essays to be handed in not later than July 15th.

In W. Atlee Burpee & Co.'s Farm Annual for 1886, Philadelphia, the credit is awarded to Mr. Charles Hewitt, of Lunenburg, Nova Scotia, of having grown the largest squash on record, 292 lbs., exhibited at the Dominion Exhibition in St. John in 1883, and in 1885, in competition with the United States, of having won first and second prizes, \$25.00 and \$10.00 for mammoth squash with 262 lbs., and 223 lbs., and first of \$25.00 with 206½ lbs., for mammoth pumpkin.

Editorial.

On the Wing.

HOMEWARD BOUND.

S. S. Parisian, April 26.—How many homes can a person claim? We leave our adopted home, Canada, for our native home, Great Britain. Duties call us—we have left dear friends, we expect to meet dear friends.

We are now in mid-ocean, on Canada's staunchest steamship, plowing through the mighty billows at the rate of 14 miles an hour, propelled by the united strength of 6,200 horses, centered in the shaft that keeps the screw in ceaseless revolution. This power is given by the use of 110 tons of coal per day. Everything is going on smoothly and in the best possible order.

The vessel is 450 feet in length, 48 in breadth, 36 in depth from the upper to the lower deck. She is drawing 25 feet of water. We have on board 90 cabin, and 110 intermediate and steerage passengers; officers, stewards, engineers and men number 140. All the passengers speak in the highest terms of satisfaction of the vessel. For our own part, we feel much safer and feel less liable to accident here than when travelling by rail, stage, or even on foot on land; we believe that statistics will bear out this idea. The conveniences, comforts and safety of this steamer are considered unsurpassed by any that cross the Atlantic. Every precaution has been taken in the construction of this vessel to make her as secure from danger as possible, being constructed of steel and iron, and divided into ten water-tight compartments.

The cabin passengers consist of statesmen, merchant princes, pleasure and health seekers, and business persons, all having their aims and hopes in view. There are two gentlemen from Ontario under the employ of the Ontario Government, and two from Quebec under the employ of the Dominion Government, to represent Canadian interests at the Colonial Exhibition, the object of these gentlemen being to set forth Canada in as good a light as possible, to induce emigration and facilitate the introduction of capital to our country. We have had conversation with the majority of the passengers, and believe that the best emigration agent we have yet met with on board is a Scotch lady—a relative of Mr. Carr, and a friend of the Heesors and Millars, of Markham—that is, if her words are reiterated and believed as we believed her voluntary expressions.

She came to Canada four years ago to visit her sister, a Mrs. Carr, at Campbellville, about 50 miles from Winnipeg. She remained there four years, and speaks in the highest terms of

the progress of her brother-in-law, and of that part of the Dominion. She says in regard to the weather, much dreaded by the ignorant, that the winters are perfectly delightful—that she would defy any one to find a finer winter climate, steady, dry, invigorating. She hopes to return to that locality again. She says she has visited a brother living in the Pembina Mountains, in Dakota, but the land is not nearly so fertile as that at Campbellville, Manitoba, and that Manitoba presents very great and decided advantages to settlers in many ways over the adjoining States.

The Commissioner of Agriculture's Advisory Board.

The all-absorbing question of this season relates to our creamery industry, and we are pleased to learn that the matter has been taken up by the Middlesex Agricultural Council. Imbued with the importance of the undertaking, we took a flight to the Model Farm for the purpose of inducing the Advisory Board, who were then in session, to make certain recommendations to the Commissioner of Agriculture.

We also desired to inquire what assistance they could render the Ontario Creameries Association, or rather the committee of that association who have been appointed to examine into the respective merits of the different instruments used for testing milk and cream, it being necessary to have chemical analyses made of the milk used in the tests.

The Board had been in session about two days, and we wished to consult with them before they adjourned, as no service could be rendered to the Creameries Association unless immediate action were taken, and we anticipated that their recommendations to the Commissioner of Agriculture would have great weight in bringing about the desired results before the season became so far advanced that all opportunity for doing good were passed.

Upon our arrival the Board was about commencing its afternoon session, and we asked permission to listen to their deliberations. Our admission was refused with an air of imperious contempt; we were told that they purposed holding their sittings in secret, that theirs was a meeting of a Cabinet Council, so to speak, as it were, and that they did not propose opening their doors to every Tom, Dick and Harry who knocked for admission.

"Gentlemen," said we, "you will lose the confidence and respect of every honorable farmer in the Province. You are paid by the people's money to advise on questions pertaining to our agricultural interests, and the

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farmers have a right to demand that you conduct your deliberations with open doors."

Mr. Edward Jeffs proposed that our suggestions be heard, but he received no seconder, and we were told that the Board were perfectly capable of attending to their own business. The members of the Board are:—J. I. Hobson, (Chairman), John McMillan, Jas. Smith, Wm. Saunders, Edward Jeffs, Mr. Dowling, and A. Blue (Secretary and *ex-officio* member).

Gentlemen, we understand, have been chosen for their political prejudices; their special suitability for their work was a secondary consideration, it having been pre-arranged that four of the Board should be Reformers and three Conservatives. Mr. Saunders, being in England, could not attend the meeting. If he had been present, we would have expected a more pleasant reception; for in his public capacity as President of the Fruit Growers' Association and of the Entomological Society, we have always found him ready to impart any information that would be of advantage to the farmers, and we hope his great influence and intelligence will have weight on the Board.

This experience forcibly illustrates the necessity for representative boards to look after our agricultural interests in place of those appointed by the government. Is there one farmer in the whole Province who would vote for a man who advocated secrecy in the discussion of our agricultural affairs? How many farmers would vote for a representative who made our agricultural interests subservient to those of a political character? It will not do to say that collusion cannot exist so long as more than one party is represented on the Board, for a certain amount of brotherhood must exist before business can be transacted, and there may be no end to compromises made in order to prevent the exposure of the mismanagement of the Model Farm. But the exposure must come sooner or later, and if the fabric be not soon unveiled, it will collapse and fall to ruin by virtue of its own rottenness.

We have already pointed out the abuses which can be seen by the naked eye. Last year the government captured an agent for dairy implements, and appointed him "professor" of dairying. We exposed the pretensions of this man, and he has recently been dismissed. He is one of those of the secret order, having repeatedly refused to give information to those who sought it, and his management of the creamery business has been a disastrous failure. We have pointed out that most of the Model Farm experiments are worthless because they can not receive the sanction of professional investigators; and now, after spending thousands of dollars in fitting up a field for experimental purposes, there it stands a neglected waste—a monument to the incapacity and recklessness of its managers.

Before taking our departure we ascertained that the Board refused to appoint an assistant chemist, and that any analyses which we desired to have made in the forwarding of our creamery interests would receive the prompt attention of the chemist, without consulting with the Board or the Commissioner of Agriculture. Astounding revelations! By the action of the Board in refusing an assistant chemist, we infer that they are as ignorant of the wants of our dairy-men as they are of the first principles of dairying; and if such important matters are not

embraced in their duties, then where is the use of the Board? The present farm manager is a first-class practical farmer, knowing the special requirements of the Model Farm better than any board; he is, however, hampered by government contingencies which the Board may succeed in removing; but so far as the experimental work is concerned, without which the institution should not exist, we express the opinion that they are a pack of incapables, every old fogey of them, from the chairman all the way down to that overbearing little braggart, the *ex-officio* member, who basely, falsely, and maliciously accused us of assuming an antagonistic attitude for party purposes.

Farmers' Clubs

Middlesex Agricultural Council.

[This Council meets on the third Saturday of every month at 2 o'clock p.m., in the office of the FARMER'S ADVOCATE, 360 Richmond street. Correspondence on all questions discussed by the Council is respectfully solicited, and will be duly considered at the ensuing meeting. All communications should be addressed to W. A. Macdonald, Corresponding Secretary, London, Ont.]

The regular monthly meeting of this Council met on the 15th ult., President Leitch in the chair.

After routine, Mr. Frank Shore read the following paper on

OUR HERD BOOKS AND THEIR RELATION TO OUR STOCKMEN AND FARMERS:

As you have asked me to give my views on the Shorthorn Herd Book question, and as the ADVOCATE and the Middlesex Agricultural Council champion the interests of the farmers, I propose to look at the situation only from the farmers' standpoint.

It is a well known fact, from the cost of the different herd books and the scarcity of other necessary literature, it is impossible for every breeder and farmer interested in improved stock to become highly read up in all points that would constitute a good judge of pedigree. We therefore find this matter looked upon very much in the same light as the public look upon a bank note, which passes from hand to hand, those receiving and paying the note not seeking to know much about the standing of the bank by which it is issued, so far as the value of bank stock or volume of paying business done by the bank is concerned. All they care to know is that the paper is passable.

In the same way, we seldom find parties purchasing particular enough as to the quality of the immediate ancestry, but from want of knowledge are naturally very suspicious as to whether certain stock is unquestionably eligible for registration in the highest register; and therefore, for the last few years, in nine out of ten of the inquiries received in correspondence comes the question, Is this animal's pedigree recorded in the British American Herd Book? This shows how necessary it is to have the standard so that there can be no shadow of doubt as to the breeding of animals entered therein.

As you are well aware, Ontario has long been considered one of the best breeding grounds, not only from our freedom from all kinds of infectious diseases, but our climate serves to build up good constitutions, and there have always been buyers in abundance for all the horses and cattle we can breed, providing they are a suitable class, and our neighbors across the line have been amongst our best purchasers. But they have heretofore totally ignored our Shorthorn herd books, and every Shorthorn bred in Canada has to be re-entered in the American Herd Book before it is classed there as registered stock.

The reason of this is plain to be seen; for, while they have for years adopted the rule that no animal can be entered in their Herd Book, that does not trace in all lines to imported

stock, and have, as a matter of course, taken the English Herd Book as the first record for Shorthorn cattle, they have dubbed our Canadian Herd Book as a record for grades. This has affected animals bred in Canada in the following manner: Canadian breeders use the English Herd Book reference numbers to their imported bulls, while American breeders invariably use their own, and Canadian bred animals with all English Herd Book crosses are valued higher than precisely the same blood, where sires are all bred in Canada, and are therefore not admissible in the English Herd Book. Were our Herd Book placed on a higher standard than the English Herd Book, breeders in Canada would all refer to their own book.

This fact alone, in the past, has shown Canadian breeders the absolute necessity of adopting the highest standard that we may recover our lost position, which has worked more particularly against the smaller breeders who cannot possibly place such high priced imported sires at the head of their breeds. Especially just now does this recommend itself to us, as there is a fast increasing demand for the best quality, and growing taste for all kinds of improved farm stock. From every corner of the country come inquiries and buyers, as men are fast finding out that life is too short to begin and build up any class suitable to their wants, and they have therefore concluded to avail themselves of the advantages which the improvement made by successful breeders in the past have done, and try to continue the good work which these talented men have spent a lifetime in perfecting, and nothing will help us to retain all that has been handed down to us like a thoroughly reliable record.

The present rule, disqualifying as it does many cattle, and amongst them some good individuals, seems to be hard on those that are owners of such, but where do we find a good work that does not militate against the interests of some party or community?

DISCUSSION.

THE PRESIDENT—Pedigree is often misleading so far as milking qualities are concerned. Many of my worst milkers have come from pedigreed bulls. Milking properties are a question of feeding as well as breeding. From calfhood up, the animal should be fed with bulky food, so as to distend the stomach and make the cow roomy. She should be kept in a good growing condition, and all tendencies to put on fat should be overcome. There is no certainty of getting good milkers from pedigreed sires, even if the dams are noted for their milking qualities. I always look to the teat for my pedigree.

JAS. LITTLE—I have had good and bad milkers from pedigreed Shorthorn bulls upon good Shorthorn grade cows. There is no certainty in the business; I have tried it till I am tired. I believe in having beef and milk in the same breed, so that when you fail to get a good milker you succeed in getting a good beef. In this country we follow general purpose farming, and we should keep general purpose stock.

FRANK SHORE—I can also get a good supply of milk and a good beef carcass from the same cow. My herd is Shorthorns.

JAS. LITTLE—I have a common native cow weighing about 1,000 lbs., and she gives the same quantity of milk as a Shorthorn grade cow weighing 1,300 lbs., both eating the same quantity of food. The Shorthorn is certainly the best breed for general purpose farmers.

HENRY ANDERSON—Some years ago, I had excellent milk cows, and put them to a Galloway bull. I failed to get one good milker, and came near ruining the milking qualities of my herd. I also find that most of the Shorthorns are inferior milkers.

FRANK SHORE—All depends upon the feeding. I have always succeeded in getting good milkers when the cows were not overfed as calves. You can't get milk when the fat layers are on too thick. For prize purposes you must force a growth every day, to the detriment of the milking qualities.

HENRY ANDERSON—I don't believe in feeding grain to grade steers in winter. Those fed on good coarse food in winter thrive wonderfully on grass, while those fed on grain in winter seem to go back for a while unless they get grain on the grass.

FRANK SHORE—But we should feed for the English market, which brings a higher price than here by 2 to 3c. a pound live-weight, and in order to do so, we must feed grain in winter in order to get the animals into good condition by the first of July, which is the best time for shipment. During the following months, we meet with western competition. I have noticed this difference in price for several years past.

JAS LITTLE—I don't feed grain until about the first of February, and I continue it until the grass becomes luxuriant, diminishing the quantity gradually. My winter ration is cut oats, straw and hay, with corn, barley, and oats.

THE PRESIDENT—I can put more grass on the cars in the shape of cheese than you can in the shape of steers.

W. A. MACDONALD—I have figured in every conceivable way, and the more calculating I do the more I am convinced of the folly of keeping general purpose cows. I can find no substantial evidence in favor of the practice. The Shorthorn being a milker of doubtful reputation, it should be classified as a beeper. If you pay a high price for a pedigreed animal, you should know exactly what you are going to get, so that you can only make allowance for the beefing qualities of the Shorthorn. The talk of the present season is about the respective merits of the Jersey and the Holstein, so far as milking properties are concerned, but I am convinced that the Ayrshire has not received half the attention which her merits deserve. There is too great a tendency to mix up pedigree with individual merit. If the pedigree is superior, and the performance inferior, the animal is then much better without a pedigree, for the certainty of transmitting the inferior qualities then becomes greater. If we based our transactions entirely upon individual merit, no attention whatever being paid to pedigree, our farmers would succeed better in the end, both from an educational and a pecuniary standpoint; but so long as Americans make pedigree the standard, our breeders are justified in raising the standard of our Herd Book. This, however, raises the price of thoroughbred stock for our farmers without their gaining a corresponding benefit intrinsically, and inflated values are thereby established. A good animal concerns our farmers more than a pure one, although a pure-blood brings more money to the breeder. We should breed from the best dams as well as from the best sires, and in order to do so it is necessary to know the merits of the common as well as the pedigreed stock. The bull would not be "half the herd," if we knew as much about the herd as we did about the bull, and as the herd usually consists of common or grade stock, we must make merit serve the purpose of

pedigree. If some farmers' organization, say this Council, for example, would make a record of every unregistered cow that produced an average of not less than say 25 lbs. of milk daily for 9 months, with not less than 4 percent of butter fat, the nucleus of a momentous work would begin. I say "unregistered" because the business would then not interfere with our breeders who are doing a noble work in their own sphere, and who follow a different standard. By such registrations the price and value of the stock would rise, and the buyer would be profited as much as the seller. Such stock would in all probability produce their like, especially if the milking qualities could be traced to the dams and the grand dams. There should be three registration books, the first to record cows having the standard of butter-fat, the second having this standard and also the requisite quantity of milk, and the third should contain these standards with the cost of production added. The sphere of operation should first be confined to Middlesex County, where some member of this Council could supervise the tests say once a month, and the cost of production could be tested by bringing the competing stock together at our local exhibitions. The field of operation could be extended as fast as farmers' clubs could be amalgamated with this Council.

The President spoke on the question of having a separate registration book for the recording of unregistered stock, making individual merit the basis of qualification. He fully accorded with the views of the last speaker. He believed that the merit standard was the farmer's standpoint, and the Council was organized in the interests of the farmers. He could not see why this standard should provoke any opposition from the breeders. It was the correct principle and would receive scientific sanction, while the pedigree standard received no recognition from science in testing the breeds.

TESTING MILK AND CREAM.

The President drew attention to the fact that no definite conclusion was arrived at with reference to what was to be done with the test instruments which the Council had sent to Germany for. The season was now advancing, and something should be done as soon as the instruments arrived, which were expected in a week or two. He was pleased to learn that the Vice-President of the Council had been appointed by the Ontario Creameries Association on a committee to examine into the most practical method of testing milk and cream, and he believed the Council should do all in its power to aid the committee, for the investigation was one of extreme urgency at the present moment.

The Secretary read a letter from Mr. Valancey E. Fuller, Hamilton, stating that he was willing to do all he could to assist the committee.

W. A. MACDONALD—Mr. Fuller is a member of the committee. He has recently established a chemical laboratory at his own expense, and no man in Canada has such a good opportunity of aiding the cause of dairying. The other member is Mr. J. W. Robertson, the dairy expert at the Model Farm, who is equally enthusiastic in the same cause. Being the other member myself, I wish this Council to instruct me how to vote in case the committee should

dispute as to whether the analyses should be made by Mr. Fuller or by the Model Farm.

After a few remarks by several members, Mr. Henry Anderson moved that the Vice-President be instructed to vote to have the work of the committee done wherever the greatest facilities could be offered in the interests of dairying. The motion was carried unanimously.

CONSTITUTION AND BY-LAWS OF THE COUNCIL.

A committee consisting of Henry Anderson, Frank Shore and W. A. Macdonald was appointed to revise the Constitution and By-Laws with a view of having copies printed for distribution about the middle of September. The revising committee will meet instead of the Council at the next two sessions, and there will be no regular Council meeting until Sept. 18. It is the object of the Council to encourage farmers' clubs in other sections of the Dominion to amalgamate with the Middlesex Agricultural Council, and copies of Constitution and By-laws and other literature will be distributed free of charge.

The report of the analytical chemist of the U. S. Department of Agriculture, summing up the results of analyses of nearly all the cultivated grasses, says: "It is apparent, then, that in most cases the time of bloom, or thereabouts, is the fittest for cutting grasses in order to obtain the most nourishment and largest relatively profitable crops, and for the following reasons. The amount of water has diminished, and the shrinkage will therefore be less. The weight of the crop will be largest in proportion to the nutritive value of its constituents. The amount of nitrogen not present as albuminoids will be at its lowest point; fibre will not be so excessive as to prevent digestion; and the nutritive ratio will be more advantageous. If cut earlier, the shrinkage is larger, although the fibre is less, and albumen is a little larger. The palatability may be increased; but the total nutriment to the acre will not be so large, and the nutritive ratio will be more abnormal. The disadvantages of late cutting are evident in the increase of fibre, destroying the digestibility of the nutriment, and the falling-off of the albumen by conversion into amides. This is not made up by the larger crop cut."

Mr. John Hannah, a dairyman near Seaforth, has been testing the relative values of cream from the herds of his different patrons, and, taking 100 percent as a standard, he found that the cream varied from 81 to 135, which is as much as to say that if one patron receives 81 cents for a certain volume of cream, another should receive \$1.35 for the same volume, whereas, according to our usual custom, the sum of these amounts would have been equally divided, giving \$1.08 to each patron. He, however, pays for cream according to its value as ascertained by the Cherry test churn.

The sulphide of potash is highly praised in England as an efficient preventive against and remedy for mildew. It is used, according to the London Garden, in the strength of one-quarter or half ounce to a gallon of water, and is best applied by means of a spray nozzle. It is claimed that this solution does not injure the foliage in the least, and leaves no unsightly masses of yellow, as is the case with sulphur,

The Farm.

The Hired Man.

None of our essayists on the above subject—24 in number—have succeeded in conjecturing our main object in selecting the hired man as a theme for a prize essay. Mr. S. A. Leidman, the prize essayist, has covered the ground very well. He modestly informs us that he just thought he would see what a country boy could do with such a thing as an essay. Well, the "country boy" has made his mark the first go, and we hope his example will induce other country lads to follow his example. We frequently find that farmers' boys and girls surpass professional writers in handling practical questions, proving that there is a latent vitality of great power in this class of our community.

These are stormy times amongst the working classes of Europe and America, although, Canada has as yet escaped with comparative impunity. According to the strain of our essayists, all heartily sympathize with the views which Mr. Leidman has expressed with reference to the treatment of farm laborers, and we ourselves endorse his views. If all farmers would follow his advice, our farm laborers would be a happy and contented class of people, and there would be no danger of their organizing and striking for greater rights. We believe that farmers, as a rule, treat their laborers better than the "bosses" do in other industrial pursuits, there being an exhibition of greater social equality amongst employers and employes in the country than in our cities, which gives rise to greater contentment.

Our columns are welcome to hired men who wish to express themselves on the subject. Unquestionably, there are some hired men who are not fit companions for the families of some farmers; but it is not charitable to say that such men should not be tolerated about the premises. The dismissal of such men is a casting of the burden on your neighbor, who may possibly be less able to bear it. Should the farmer not take pride in attempting to elevate them up to his standard? The happiest family we ever saw embraced two hired men employed from year to year. The best dairy literature was placed into the hands of the one, and, instead of working those unsufferably long hours, he was given ample time to peruse it, and was consulted on all dairy matters. Field literature was placed into the hands of the other laborer, and he was consulted on all matters pertaining to his department. A stranger entering the house, and hearing discussions on the plans of operation, could not ascertain who was the "boss." This is as it should be; the hired men feel proud of the confidence reposed in their learning and judgment, and they are being trained to work farms on their own account. Why should the hired man not be taught to employ himself to the best interest of his employer, which conduct must ultimately redound to his own advantage?

In our observations and experience, the greatest grievances of the hired man are (1) the long hours, and (2) unsuitable diet. The long hours are chargeable to the system rather than to the farmer. The system could profitably be changed, distributing the work more evenly over all the seasons of the year, instead

of compressing it into a few months when very few hands can be had at any price. That the average farmers' summer diet is a disastrous failure cannot be controverted. If we advocated greater expense in this respect, we would be open to censure, but his diet can be made less expensive, less laborious in the methods of preparation, and at the same time more delicious, wholesome and nutritious. Substitute the various products of a model garden, aided by delicious small and large fruits, in various combinations, for the proverbial "bacon and potatoes." No laborer should expect that every farmer can have fresh meat at all times during the sultry months, and such is more a habit than a necessity. There are productions of the vegetable kingdom which contain a higher nutritive value than those of the animal, pound for pound, and their cost is very much less. Eggs and the various products of the dairy are concentrated animal foods, and should be utilized to a greater extent than ordinary custom demands.

Do Good Farmers Summer-Fallow?

The question of summer-fallowing has been debated for centuries amongst practical farmers, and many appear to be as far from a conclusion as ever. There are arguments for and against the practice; indeed, all depends upon circumstances, and as soon as the varying conditions become clear in the farmer's mind, he will have no difficulty in arriving at sound conclusions.

The main conditions are (1) the chemical and physical conditions of the soil; (2) its condition with regard to weeds; (3) the drainage; (4) the season; (5) the system of rotation.

The main objects usually are to clean the land and to prepare it for fall wheat. Now the good farmer controls many of those agencies by which weeds are propagated, and by thorough cultivation year by year, as well as by a skilful system of rotation, he obviates the necessity for summer-fallowing. With regard to preparing the soil for wheat, this should be the object of every other crop in the rotation, instead of putting it off till the last season. Soil is prepared for wheat by conserving the nitrogen—the active principle of humus—in the surface soil. The application of barnyard manure supplies this humus; but, instead of supplying it only once during the rotation, a small portion can be added mostly every year, chiefly by plowing under partially grown green crops, and by thorough tillage of root or corn crops during the season of growth, whereby ammonia is absorbed from the atmosphere. These remarks, however, only apply to soils which are deficient in vegetable matter or humus. Soils rich in decayed vegetable matter have great absorbent powers for water and ammonia, and owing to their dark color, they favor soil warmth, and so produce earlier crops.

Some farmers summer-fallow in order to give the field a rest. There is no use in giving anything a rest unless it recuperates. If a rested soil increases in fertility, this may be a cheap method of manuring, but let us again examine into the conditions. To say that a soil increases in fertility is very indefinite; for it may increase in some constituents of plant food and decrease in others. This brings us to the effects of tillage, especially the extra tillage

which the field gets while being summer-fallowed. The effects of tillage are not the same in every soil. Its effects on a clayey soil are to disintegrate the rocky particles, making the mineral plant-food more soluble, the vegetable matter in the soil becomes rapidly decomposed by frequent exposure, and the carbonic and humic acids which are given off aid in the disintegration of the particles of rock, the nitrogen or fertilizing element being retained in the form of nitrates; that is, nitric acid combined with some base, usually lime. The action of tillage on the organic matter, whereby the plant food becomes increased, only takes place at summer temperatures, a certain quantity of moisture also being required. It will now be seen that all kinds of plant food are greatly increased by summer-fallowing, but the question yet remains, Does all this nutritive material remain in the soil? If so, surely summer-fallowing must be an advantage, providing the plant food produced be not too great for the requirements of the coming crop. If the soil is rich in vegetable matter, it is easy to create an excess of nitric acid, which might be more exhaustive on the soil than the production of a crop; and if the soil is of a clayey character, the previous winter having been open and frosty, there may be an excess of mineral plant food produced; for frost is a greater liberator of the mineral constituents of plants than tillage. In a retentive soil, such as a clay or a clay loam, the mineral plant food is retained, and any excess unlocked by means of tillage will be held in reserve for succeeding crops; but by an unlucky provision of nature the nitric acid obtained from the vegetable matter will be washed away in a wet season. If the land is underdrained, part of the nitric acid will sink into the subsoil, and will come useful for deep rooted plants, say fall wheat, and part will be washed into the drains, as has often been found by analysis of the drainage water. If the land is not drained, especially when it is undulating so that the water will run off freely, the situation is still worse, for the water which washes over the surface will carry the nitric acid with it, possibly away down to the sea. It will now be readily seen that in sandy soils, where the mineral plant food is scanty, and cannot be appreciably increased by tillage, manures must be cautiously applied in order that they may not be wasted before the growing crop is rank enough to appropriate them. In a dry season, however, all the constituents of plant food will be retained in the soil, and in a retentive soil all but the nitrogen will be retained even in a wet season. No excess of plant food can be produced by tillage so long as there is no waste in the soil, and all the constituents are properly balanced for the requirements of the crop.

We think these explanations are in sympathy with the practice of our best farmers, and they do not give much encouragement to the advocates of summer-fallowing. However, when a field is excessively dirty, the practice is a good one, even if some elements of fertility are lost; for, by repeated cultivation at different depths, weed seeds are brought to the surface by every operation, where they germinate and are destroyed, the land thus being cleaned at once, and many years of annoyance are spared. Under ordinary circumstances it is folly to lose a year's crop by means of the summer-fallow

and the practice of applying all the manure of the rotation to the fallow is not that of an intelligent husbandman. It is preferable to plow under an occasional crop of clover, in whole or in part, thereby enriching the surface from the subsoil and the atmosphere, and if the soil is lacking in any special constituent, it can be most cheaply supplied in the form of a commercial fertilizer. Green manuring is fast gaining favor on light soils and on other soils lacking in vegetable matter. The practice is sound both in science and in common sense. If a clover field is plowed under at the right time, say in July, there will be no loss of plant food, and fall wheat may be sown with excellent prospects for a good crop.

Experiments with Potatoes Potato Rot—Profits and Losses on Fertilizers.

(A Lecture delivered by W. A. Macdonald before the Middlesex Agricultural Council.)
No. V.

The weightiest questions yet remain to be considered. Should the potato be grown for the farmer's table, for the trough, or for the market? Indeed, these are pertinent questions in the raising of all farm crops, and I should not consider my experiments complete without giving my reasons for using the potato in preference to other farm crops to analyze my soil.

I wish to say a word about the nutritive value of the potato, and lest you should accuse me of going beyond my legitimate sphere, I will quote the words of the ablest living authority in physiology and dietetics. Prof. W. Mathieu Williams, the author of an able treatise on "The Chemistry of Cookery," says: "If I were the autocratic Czar of Ireland, my first step towards the regeneration of the Irish people would be the introduction, acclimatization, and dissemination of the Colorado beetle, in order to produce a complete and permanent potato famine."

This is bold language from so great an authority, and your curiosity will be aroused to know why this should be thus. I would not dwell on this part of the subject had I not heard that, owing to the high prices, the farmers of Middlesex county were so stingy that they were selling all their potatoes and eating other vegetables in their stead. Physiologists and hygienists have done more for the human race than all other scientists combined, doctors not excluded, and yet we are so wedded to fashion in our dietetic habits that we choose fashionable misery in preference to unfashionable happiness. We suffer more from errors in diet than from all other ills combined. We speak of feeding the refuse of our crops to our domestic animals, whereas, in truth, we eat the refuse ourselves—and that, too, for the most part, in the form of what is familiarly called the "staff of life."

The statement of the authority above quoted is easily comprehended. In examining the composition of the potato, we find that it contains only 25 percent of dry matter, about nine tenths of which is starch. I have said that the potato feeds largely on the potash salts in the soil. We should therefore expect the potato to be valuable as an article of food on account of this alkali, but these are lost in the ordinary process of cooking. It is true that baked or steamed potatoes would sustain life

for a considerable length of time; but in the fashionable method of preparation, they must be regarded as useful merely for the percentage of starch they contain, the quantity of albuminoid or flesh-forming material being scarcely worthy of consideration. If the object is merely to fill up the system and give it bulk, then eat potatoes by all means, and the more mealy the potato, the better it will serve this purpose.

True, the system requires a certain quantity of starch; but our "staff of life," especially that made from the "new process" flour, as well as many other articles of diet, is also excessively starchy, and the balance of our rations is too sugary or fatty; that is, our food is too carbonaceous, and lacks in the substances which build muscle and bone. It is now plain to be seen that the potato was meant to be sold, not to be eaten or fed to your stock, and you should raise no more for your own use than will hide you from the disgrace of being called unfashionable in your dietetic habits.

Why, then, all this experimenting with potatoes? There have been more investigators in the potato field than in all other vegetable fields combined. The reason why is because the craze has taken this turn; but I want to tell you the reason why I selected the potato to inform me what constituents were most lacking in my soil. You are all aware that the composition of crops changes with the character of the soil and the nature of the manures applied.

It is the nature of some plants to change in this manner more than others. Now it is plain that if a certain crop feeds readily on almost any constituent that is applied to the soil, it is more difficult to ascertain the natural deficiencies of that soil than if the crop were invariable in its composition. According to the evidence of the most reliable authorities, the potato varies less in its chemical composition than any other crop, and an excess of any given constituent applied to the soil will not find its way into the potato less readily. If potash is deficient in the soil, many plants will feed on other alkalies, such as lime and soda, in its stead; but this power of appropriation does not seem to be great in the potato. This quality in the potato fits it admirably for testing the deficient constituents of all soils, and the process is a simpler and more satisfactory one than that of chemical analysis. Whatever little value potatoes possess should be attached to their mineral constituents, so that farmers should consume those which have received the greatest quantity of mineral fertilizers.

(CONCLUDED.)

Farm Drainage.

No. X.

Cost of Draining.—It is evident that no inflexible rules can be laid down with reference to the cost, and, itemize as we may, some of our figures would be liable to objections in some quarters. Some men do twice as much work as others for the same money; some men are engaged by the day, some by the month, and some by the year, the wages varying very materially in each case.

In the different classes of soils there is not so much variation. For instance, in a clay soil the drains are not usually so deep as in a lighter soil, so that digging stiff ground 3 feet deep would cost about the same as digging a looser ground say 3½ feet deep. So it is also with reference to distances apart; deep drains at wide intervals would cost about the same

amount of work as shallow drains at closer intervals. But the labor of filling up the ditches and the cost of the tiles would vary somewhat, and there would be a saving of tiles in favor of the less compact soils and deeper drains, making the cost per acre less, although the cost per rod might be the same as in the stiffer soils. If the proper draining tools are used, making the bottom of the ditch no wider than the thickness of the tile, the cost will be less in all soils. When the cost of filling threatens to be great, it is a good plan to use a team and scraper, working the horses on one side of the ditch and the scraper on the other side.

Let us suppose that the man is hired by the month, which will make the cost a medium between a daily and a yearly engagement. Let him get \$18 per month, and add \$10 for board; total \$28. So long as in-door employment can be reserved for rainy days, no change in this amount need be made on account of wet weather. Under favorable circumstances, the soil not being too stony or too wet, a ditcher should dig about eight rods per day, but let us count the average six rods. This will make the cost of cutting 18 cents per rod. Laying the tile and filling the drain will cost about 6 cents per rod. The following are the lowest prices for which tiles can be manufactured and sold at a reasonable profit:

2½ inch tile	\$ 9 00 per thousand
3 " "	10 00 " "
4 " "	15 00 " "
5 " "	25 00 " "
6 " "	35 00 " "

Taking 3-inch tile as the average size used, the cost of tile per rod will be say 16 cents, leaving some allowance for breakages. These figures make a total of 40 cents per rod. This may be regarded as near the minimum cost. Let us now endeavor to arrive at the cost per acre. Let us suppose that the soil is a loam, the distance of the drains apart being say 75 feet. There are 160 square rods, or 43,560 square feet, in an acre, so that if the ditch will drain 75 feet wide, the length will have to be 581 feet, or the equivalent of this number of feet if there is more than one drain. This number of feet is equal to 35 rods, which, at 40 cents a rod, will amount to \$14—the cost of draining an acre.

There are other items of cost which we cannot include in this computation. We have made no allowance for hauling the tile, this cost being so variable in different localities. If the farmer can do the hauling in the winter, when himself and the team would otherwise be idle, the cost would not be much. We have also made no allowance for skilled labor; for, as we have already pointed out, the leveling should be skilfully done by the farmer himself, in which case no skilled labor will be required. The cost of leveling, mapping out, etc., must therefore also be added to the above bill. No farmer should be far astray in computing \$20 to \$25, including all contingencies, as the cost per acre for draining his land, and extreme cases should scarcely exceed \$30. By the use of ditching machines, this cost can be considerably reduced.

By thorough under drainage, a large percentage of our farms would increase their productions at least 10 bushels of wheat per acre, or the equivalent thereof in other crops, so that it will now be seen that drainage will pay its cost in about two years, and instances are known in which the cost has been returned in one year; yet it is well known that a drain does not begin to return its highest dividends for several years after its completion.

PRIZE ESSAY.

What Out-Door Work Should Farmers' Wives and Daughters Perform?

BY MISS J. D. THOMSON, BROOKLIN, ONT.

This question is one which admits of a variety of answers. Where help is abundant and household duties light, while outside work presses and the available masculine force is slender, it may be right for the women of the household to take upon themselves occasionally or permanently, any part of the work which their time and physical strength will enable them to undertake. Such work as milking, caring for poultry, and perhaps the garden, should be regulated by the relative amount of work in proportion to the workers necessarily falling respectively to the male and female members of the family. In cases of emergency most women would be willing to help anywhere and everywhere in their power for the general benefit. But in the circumstances in which a majority of our farmers' wives and daughters are placed, the answer to our question should be, emphatically, NONE. Where is a woman who in her single person, or with only one assistant, is expected to be cook, laundress, housemaid, dairymaid, nurse, seamstress, and a few other occupations thrown in, to get time for out-door labor? If, by a miraculous combination of strength and administrative ability, she could find any time, ought she to employ it? Most decidedly not. A farmer's wife is not merely a combined machine for the performance of the multifarious duties already mentioned—she is a woman. She is not only a housekeeper, but a home-maker, who, apart from the needs of her own higher nature, is constantly called upon for sympathy, for counsel, for the solution of problems in education and family government, for practical wisdom in every department of family life. Do these things come to her by instinct, and has she an inexhaustible reservoir for their supply? If any man thinks so, let him try to fill his wife's place for a week. What time or strength has a woman left to be "mother," who is an embodiment of perpetual motion for about fifteen hours a day, and not a few farmers' wives would say that their "hours" were over rather than under that number.

In regard only to the physical labor required in a farm house, many men have the most erroneous ideas. We all know the result when "John Grumlie" undertook to demonstrate what an easy life his wife had. And a large number of women would echo Mrs. John's answer to her distracted husband when he wished to return to his own domains,—quoth she: "I'm well content, you may keep it the rest of your life." It is a common remark among women who have done both out and in-door labor, that the former is much less exhausting than the latter. I knew a large family of daughters who were accustomed to do a great deal of out-door work. It was quite common for them to quarrel (not unamiably) over who should remain in the house. They found the out-door work so much easier; all wanted to go out. There were no nervous glances at the clock as it was nearing the dinner hour; no mental calculations of how it was possible to get all that *must* be done into the time there was to do it. They had only to

work with reasonable diligence for a certain number of hours, and their work was done. But what woman in a farm house, and with the average amount of help, can ever say that her work is done? It is new every morning,—and yet most exasperatingly old. It goes on with the ceaseless regularity of a tread-mill, often with about the same effect on the worker.

"Seam and gusset and band,
Band and gusset and seam,
Till over the buttons I fall asleep,
And sew them on in a dream."

Will not some present-day Hood give us a song of the farm-house? It might run in this style:

Breakfast and dinner and tea,
Milk and butter and cream,
Dishes and clothes and floors to scrub,
And leisure a long-lost dream.

Even the lines already quoted have been literally true in not a few cases. Does not the nearest approach to rest while awake which many a farmer's wife knows, come to her when sewing, and is not her recreation too often found in her mending basket? How long will she bear the strain of life under such conditions as these? "I might have done a little more," said a young wife to a friend, "but I remembered I was the baby's mother, and I went to bed."

If that sensible example was followed, in stead of going to bed only when it is impossible to do even a little more, and the whole of life regulated on that principle, we would find fewer farmers' wives in our lunatic asylums, or filling premature graves.

I have already referred to milking as debatable work. Many consider it not at all debatable, and would answer positively in the affirmative as to woman's duty to perform it. It is certainly out-of-door quite as much as feeding the cattle. Where can one pair of hands in a house find time to do it? Their owner should be otherwise engaged at the proper hour for that. But there is one person who should most resolutely refuse to milk—the mother of young children. How many accidents have occurred to such children, resulting in death or life-long deformity, through their being left alone while their mother was engaged elsewhere, in some so-called duty. What duty can supersede that she owes to her children? None. When the farmer has more work than he can himself perform, he does one of two things. He secures sufficient help, or he cuts down the work. Let his wife do as he does; insist upon her right to do it, if necessary, and not try the false and wicked economy of saving everything but her own strength.

In the cases we have had in view it has been pre-supposed that the necessity exists for the closest economy. No considerations of mere money-making or saving, without that necessity, can justify a woman in using her spare time for work properly belonging to men. If she can possibly get such time, let her use it rather in making her dwelling place home like, and herself a more intelligent and agreeable companion for those dependent upon her. Let her children look back to their home when they may be far away from it, as the brightest and most attractive, as well as the happiest place they have ever known, and she will raise an all but impassable barrier between them and evil. It is not too much to say that in the bare

and in every way cheerless and uncomfortable condition of many farm houses, and the uncultured ways of their inmates, may be found the reason many a bright boy has left the farm for a life which seemed to promise more of happiness in the city, and who has found to his cost that the promise was only in seeming.

It may be thought by some that the picture given of woman's life on a farm is too highly colored. Those who know farm life well will say it is drawn only too faithfully. It is not for a moment asserted that that picture is a truthful one of farmers' homes as a whole. There are many of these, and I am glad to believe that their number is fast increasing, that will compare favorably in every important respect with any home in the land. But in these homes the wives and daughters are expected to do very little out-door labor.

Wet lands should be drained because we cannot unlock the fertility of the soil unless air takes the place of the water, says Prof. Scott, in the Agr. Gazette. The primary objects of land drainage are—to carry off stagnant water; to give a ready escape to the excess of what falls in rain; and to arrest the ascent of water from below, whether by springs or by capillary action; so as to render the land sufficiently dry for cultivation or grazing purposes, and at the same time regulate the supply of moisture to the growing plants. We drain to let water into the soil, as much as to take it out—not merely to carry off the surplus water, but to make the fertilizing rain filter through the soil. Amongst other effects, draining improves the texture of soil by making it more porous, drier, looser, and more friable; it makes land more easily worked; it raises the temperature of the soil; it enables a greater variety of crops to be grown; it gives an earlier seed-time and an earlier harvest; and it makes manure more effectual. And even this does not exhaust the practical advantages of draining wet lands.

An American writer, whose long connection with agricultural matters gives him a broad and correct view of them, remarks that "the influence of the best agricultural journals on improved practice, thoughts, and opinions, is far superior to all that which emanates from national departments and State boards, to say nothing of the ruffraff of the so-called agricultural experiment station. Further, that nothing else so surely marks success and usefulness as the correspondence in the columns of these papers, which is at once a proof of the value, credit, and influence of any journal."

The cows kept at the Munster Model Farm and Dairy School, Cork, are a useful, milky looking herd, of no special breed, but most of them showing a good deal of the Shorthorn, and some of them an unmistakable cross of the Ayrshire. Each cow's milk is weighed at every meal, and a register kept; this shows that in the year 1884 36 cows averaged 690 gallons of 10 lbs. to the gallon; in 1885, 29 cows averaged 725 gallons. The milk of cows sold during the year and replaced by others is not included. In 1884 one cow gave 1,050 gallons. In 1885 the top figure was 1,037; in the same year six cows gave over 800 gallons each, four gave over 900.

In England an authenticated case of butter having kept sweet and fresh for nearly eight years is reported.

Stock.

A Chatty Letter from the States.

[From our Chicago Correspondent.]

The whole country has for some time been very much disturbed over the difficulties between capital and labor. The live stock trade seemed to feel the effects of the disturbance quite as much as any other branch of business. The railways were, for a time, unable to guarantee the free movement of freight, live or dead, and there was a feeling of "shakiness," which had a very bad effect upon the interests of those who were trying to attract investors. The trouble has, now at least, temporarily quieted, and the normal feeling of confidence has been restored.

Whatever the interruptions of trade, "the people must eat," and since the people of this country are great meat eaters, it would take a pretty serious state of affairs indeed to demoralize the live stock trade, or rather the demand for meats. Over-production is about all that can very badly unsettle the stock raising business, though of course it takes its ups and downs the same as other branches of industry.

A few months ago there were very serious fears of the supplies of live stock throughout the country exceeding the demand, but now the outlook is regarded as being decidedly more hopeful. The markets of late have not been supplied with as much stock as at the corresponding time last year, and the total offerings of live stock for the expired part of the year is considerably less in the aggregate than during 1885. The only question now is upon the demand. So far it is certainly no less, and while there is less of a foreign war stimulus than for a year or two past, the legitimate consumptive demand seems to be steadily gathering strength. At any rate, those who are in the business of raising live stock, and are conducting it on sound business principles, need have no fear but what it will prove, in the long run, quite as profitable as any occupation.

The dependence of the American cattle raiser on corn to fatten his cattle is very great, and often places him at a disadvantage, if he did but know it. The four fine cattle with which J. J. Hill, of St. Paul, won his laurels at Chicago over 600 corn-fed competitors, never knew the taste of corn. Mr. Hill, in a recent address, stated that he had secured a Scotch feeder at \$2,500 per year, and found that he could make premium cattle without depending upon corn.

It will be a long time, however, before root culture in the west assumes any important consideration. Wheat raising has, in a measure, been overdone, and it may so happen with corn after a while, as the corn belt of the States is very rapidly widening.

Nebraska has for two years been sending us corn-fed cattle, hogs and sheep every month in the year, and now Texas is being "heard from" in the same manner.

The imitation butter making seems to be gaining strength. The proposed taxation of 10c. per lb. will most likely be defeated. The claim is made that every creamery in the country uses "oleo" oil, and that about the only way to get real butter is to keep a cow and make it yourself. A Chicago restaurant made quite a hit by introducing churns and

making their own butter on the premises. It costs them about 75c. per lb., but pays at that, as it draws custom. Even the fellows who are making money on bogus butter do not wish to eat it.

The May sales of fine cattle at Dexter Park, Chicago, were fairly well attended, but buyers were found to be unusually discriminating. The Canadian Herefords and Polled Angus and the New York Shorthorns sold the best. M. H. Cochrane & Son, of Hillhurst, made a very successful sale, which resulted as follows:—Ten Hereford bulls were sold at an average of \$215.50; 14 cows and heifers averaged \$360; 8 Polled-Angus bulls averaged \$313.62; 22 Angus cows and heifers averaged \$347.50. In view of the general condition of business affairs of the country, the result of this sale was a highly gratifying one. The Hereford bulls sold at \$100 to \$525; Hereford cows at \$200 to \$575; Polled-Angus bulls at \$105 to \$450; Polled-Angus cows at \$175 to \$800. These prices showed that buyers wanted something good, and were willing to pay good prices for really prime stock.

H. Y. Attrill and Wm. Murray, of New York, 23 head of fine Shorthorns at an average of \$591. John Hope, of Bow Park, bought Grand Duchess of Ridgewood 2nd at \$2,800, and J. J. Hill, of St. Paul, bought the Grand Duchess of Ridgewood 3rd at \$3,250. The Grand Duke of Ridgewood 69,965 sold at \$1,000 to J. H. Lafferty, Norwood, Ill.

T. W. Harvey, of Turlington, Neb., sold his entire here of 35 Shorthorns at \$40 to \$430 for bulls, and \$85 to \$455 for cows and heifers.

The Michigan Hereford Breeders' Association sold 12 cows at \$50 to \$300, averaging \$236.66, and 8 bulls at \$125 to \$300, averaging \$240. This sale was only a partial success, a number of the best cattle being withdrawn because of low bids or lack of bids.

It is a noticeable fact that in the sales which make the highest averages the cattle are carefully groomed, are not too fat, but always in good condition, and the choicest animals are taken into the ring first. It is suicidal to lead into the ring two or three animals which nobody wants and which are knocked off at low prices to the tune of spiritless bidding. There is nothing like a good start. "Well begun is half done." Where bidding is sharp at the outset it seldom lags. The first sale or two gives the spirit of the occasion and is the key note to the whole.

Feeding for Lean Meat.

Not long ago we published a report of Professor Sanborn's tests, from which he concluded that food makes a profound change in the composition of the animal; that the pig is most susceptible to the molding influence of food, so that we can elect the type of meat we want. Sir J. B. Lawes writes to the *Live Stock* (London) *Journal* to say that in the Rothamsted experiments the more nitrogenous foods tended to growth rather than fatness, which coincides with Professor Sanborn's investigations. In commenting on the fact that corn-fed pork contained two pounds of fat to one of lean, Professor Sanborn wrote: "No wonder that American wealth is disgusted with American hog grease as a daily food, and year by year steadily consumes less and less of it." Taking this for a text, Sir John preaches the following instructive

little sermon: "There can be no doubt that the wealthy Americans can obtain their supply of fat in the more palatable form of butter; but butter is a very costly substance and the enormous trade which has sprung up in butter substitutes shows how great is the requirement of the human stomach for some form of fat. Farmers would be only too glad to sell their pigs in a less fat state if the public taste would allow them to do so. It requires between two and three pounds of starch or five or six pounds of corn to produce one pound of fat; and, although a fattening animal increases in weight, it also increases in dry matter from the fat-displacing water. The farmer could produce a leaner quality of pork at less cost; at present, however, the demand for fat pork and bacon is not likely to alter. The pig is the best and cheapest fat-making machine which exists, and although Professor Sanborn speaks rather contemptuously of 'hog grease,' this does not alter the fact that when it is required the cereal grains are the most suitable food for obtaining it, and as we pointed out when writing on the subject thirty years ago, these grains contain the proper balance of nitrogenous to non-nitrogenous compounds. But except in the case of pigs, the animals on the farm receive the bulk of their food in the form of roots, grass, hay and straw, and the more concentrated foods only form a small portion of the bulk, while the most economical ration, that is to say, one where neither nitrogenous nor non-nitrogenous substances are wasted, has yet to be ascertained." [Philadelphia Press.]

Pork as Food.

The prejudice against the flesh of swine as human food is as old as history. If it has any foundation in nature besides the filthy manner in which the hog is generally kept, it is because the hog is more subject to disease, or at least to a certain class of diseases, than other domestic animals. Its omnivorous appetite makes it liable to certain diseases from which the exclusively vegetable-eating animals are comparatively, if not entirely, exempt.

The two evils most complained of are tape-worm and trichina—both parasitic. Both of these are developed in the animal tissues, and it is very doubtful if they ever afflict animals that do not eat animal food, or in some way get animal products into their stomachs and intestinal canals.

The tape-worm, when encysted in the tissues of the hog, has the name of measles—though wholly unlike measles in the human species—and pork containing these encysted worms is known as "measly pork." When taken into the human stomach, they are liable to develop there in the form of the loathsome creature known as tape-worm. This is not necessarily fatal, but very annoying. In modern times, it is successfully removed by the skillful physician without pain or injury to the patient.

Trichina is a parasite much more to be dreaded even than the tape-worm. It is liable to infect the human system in such numbers as not only to be very painful, but fatal, and we believe there is no known remedy. It is encysted in the flesh of the animal, in a dormant state, like the tape-worm. When the trichina enters the human stomach, it attaches itself to the mucous membrane and there awakens to all the activity of breeding thousands, if not mil-

lions, of its kind. These young trichinae at once start out to find a place in which to encyst themselves for a dormant rest and await a resurrection by having the flesh in which they are imbedded eaten by some animal, brute or human, when they will repeat the role of their progenitors.

It is when passing from the stomach and intestines to the muscles that the trichinae give such pain, and frequently cause death. Pushing their way through the tissues, they cause great irritation and inflammation, resulting in death when the effects become unendurable. While in this active state of migration, seeking a home, they are as liable to be found in one class of tissues as in another. Hence, lard that has not been exposed to a heat of at least 212 degs. Fahr., is just as likely to contain them, if the animal was killed when the trichinae were in a state of activity, as in any other part or product of the hog.

The only way to avoid the evil and suffering from tape-worms and trichinae is to either wholly abstain from eating pork, or to be sure that it is thoroughly cooked, so as to destroy the vitality of the encysted parasite. The muscle of the hog makes exceedingly palatable food, and many enjoy eating the fat. In spite of all the terrors and drawbacks, pork is a common and popular article of food. So long as animal flesh continues to be eaten by man, we presume pork will be eaten. As there is no cure for one of the diseases imparted by it, the safety of the public health demands that hogs be kept in a cleanly manner, fed only on vegetable food and such animal products as belong to the dairy, and that the meat—of all kinds, as for that matter—shall be sufficiently cooked to destroy all animal life. Nothing less than subjecting every particle of it to a heat of at least 212 degrees will do it.—[National Live-Stock Journal.

Cost of Producing Milk.

It will be seen in our report of the Ontario Creameries Association that it costs Mr. Graham \$1.20 per 100-lbs. to produce milk from his cows, counting the cost of the food in his own barn, while Mr. Carpenter, buying all his food on the market, produced the same quantity of milk for half the money. This discrepancy shows the necessity for careful investigation, and the mode of procedure must be both business-like and scientific.

Many farmers are prone to believe that any mode of investigation which they cannot comprehend is scientific and must therefore be rejected. It is evident that this standard cannot be adopted, for what would be scientific to one farmer would be quite practical to his neighbor. The scientific method of investigation is the taking of all the known conditions into consideration without reference to the parties who may or may not comprehend them, and we think this is the only practical standard which can be adopted.

In the cases above cited, could the difference be in the individual merits of the cows, the quantity or the quality of the food consumed, or in the system of feeding? Possibly the costly milk was very superior in quality, while the other cows were bred for quantity at the expense of quality. Should there be any material difference in this respect, surely an im-

petus for paying according to quality should be given.

Accurate experiments have recently been made at the Amherst (Mass.) Experiment Station, three Ayrshire grades—average weight 872 lbs.—having been chosen for the purpose; the ration consisting of 4 quarts (6½ lbs.) cornmeal at \$28 per ton, and all the hay they could eat, viz., an average of 16½ lbs. per day at \$15 per ton. The average age of the cows was nearly 5 years. The milk produced averaged 16½ lbs (about 7½ quarts) per day. The average cost for food was 21 3 cents daily, making the cost of milk \$1.30 per 100 lbs., or about 2.7 cents per quart (wine measure).

These figures correspond very closely to those of other experiments of a similar kind, and prove that Mr. Carpenter is nearer the mark than Mr. Graham; for the price of the food in the Amherst experiments was nearly double the prices here, and the quantity of the milk produced there was 7½ quarts per day against 10 quarts here; but in these comparisons we must presume that the length of time since calving was the same in all cases. If Mr. Graham finds that his cows consume more than 15 cents worth of food per day, the quicker he changes his herd the better, unless he increases the average quantity of milk from his cows.

Mr. Graham makes another unpardonable blunder. He says one man can attend 50 head of cattle, winter and summer, and he places the value of the manure against the cost of attendance. This can be figured in several ways; but first let us ascertain what value this estimate will give to the manure, providing he pays his man say \$12 per month in winter, adding \$10 for board; total \$22 per month to be placed against the value of the manure of 50 cows. Counting six winter months, we get $22 \times 6 = \$132$ as the wages paid for this length of time. It is a low estimate to count one ton per month as the quantity of manure dropped by each cow, counting both the solid and the liquid excrements. This would make $1 \times 6 \times 50 = 300$ tons as the quantity of manure dropped by 50 cows in six months, which, according to Mr. Graham's estimate, is worth \$132, or 44 cents per ton.

Farmers may differ in opinion as to the value of a ton of manure, but this cannot affect the standard by which we must be guided. Numberless analyses have been made of barnyard manure; but we shall take the latest which have come to our hands. At the Cornell Experiment Station, an analysis of a mixture of cattle and horse manure has been made, a large number of samples having been cut out of the manure heap and mixed together. The following table gives the results, the percentage of moisture being 72.95 percent:

TABLE SHOWING THE ANALYSIS AND VALUE OF A TON OF BARNYARD MANURE.

Nitrogen.....	15.6	$\times 15 =$	\$2 34
Phosphoric Acid.....	8.0	$\times 7 =$	56
Potash.....	16.8	$\times 4 =$	71
Total.....			\$3 61

That is to say, a ton contains 15.6 lbs. of nitrogen, which, at 15 cents a pound, amounts to \$2.34, and so on with the other figures, making the total value per ton, \$3.61, or, for Mr. Graham's 300 tons, \$1,083, instead of \$132, as estimated by him. This is common barnyard manure as taken from well-fed stock. But Mr.

Graham may justly take exception to this method of calculation. When manure is well fermented, large quantities of carbonic acid are given off, which have no direct fertilizing value; the heap becomes more concentrated and may be more valuable than the direct excrements from the cow, weight for weight, even when there is an admixture of considerable quantities of straw, and it is quite probable that, even when some waste occurs, a ton of barnyard manure may be more valuable than the same quantity by weight of solid and liquid excrements, taken in the proportions as dropped from the cow. Let us, however, make a calculation.

A well fed cow will void about 4 tons of liquid and 10 tons of solid excrement in a year. A ton of the former will contain 16 lbs. of nitrogen, the same quantity of potash, and 9 lbs. of phosphoric acid, which, at the prices above quoted, viz., 15 cents per lb. for the nitrogen, 7 cents for the phosphoric acid, and 4½ cents for the potash, would amount to \$3.71 per ton. It has been estimated that the quantity of solid excrement dropped by a cow is equal in value to the liquid excrement, so that, in round numbers, a cow will drop in a year \$40 worth of manure, or \$20 for the 6 months. For 50 cows, the value of the manure would therefore be $50 \times 20 = \$1,000$, against \$132 as estimated by Mr. Graham. Reducing these figures to the value of the manure dropped by one cow in a day, we get 11 1-10 cents. This is not far from the average of well-fed cows; for we have seen estimates as high as 16 cents per day, and as Mr. Graham's cows are highly fed, and it may be fairly presumed that a man of his experience and intelligence takes good care of the manure, he should not consider this estimate appreciably high.

But he may urge that these figures are too scientific, and not at all practical. We answer: Science has no control whatever over commercial prices. Nitrogen, for example, brings 15 cents a pound because farmers persistently pay that price for it, and neither science nor law can prevent their doing so. All science can do is to say this: If you pay such and such prices for the constituents of commercial fertilizers, then the same constituents in your barnyard manure are worth just so much." Indeed, farmers say that barnyard manure is worth more than any other kind, and if they mean by this a pound of available nitrogen, phosphoric acid or potash is worth more in the manure heap than in the bought fertilizer, than barnyard manure must be worth more than the figures we have given. No difference, however, has been discovered either by science or by practice, and a pound of the same constituent has the same value no matter where it is found, if it is equally soluble and available.

The agricultural value is an entirely different thing. A bag of fertilizer will have about the same commercial value as a ton of ordinary manure, say \$2 or \$3, but one farmer will make nothing out of the investment, while another will make several hundred percent.

People in general have but little idea of the magnitude of the London wool market. In a single week recently the following arrivals were reported:—1,803 bales from Cossack, 5,802 Melbourne, 380 Bussorah, 4,704 Napier, 8,562 Adelaide, 18 Victoria, 1,418 Wellington, 668 Port Chalmers, 812 Dunedin, 6,130 Sidney, 10,056 Newcastle, 32 Kurrachee, 4,732 Lyttelton, 2,526 Auckland, 711 Port Pirie, 1,289 Port Germain, 3,039 Port Augusta, 2,633 Oamaru, 4,013 Lisbon, 303 Marseilles, 2,800 Brisbane, 1,694 Rockhampton, 654 Townsville, 34 Thursday Island, 3 Lusa, 19 Bagdad, 73 Ostend, 35 Bordeaux, and 985 bales from Natal. Total 65,928 bales.

Alton Hall Stock Farm.

This farm is situated about four miles from Guelph, in the county of Wellington, which is considered one of the best in Ontario for thoroughbred stock.

We herewith furnish our readers with an illustration of some of the choicest Galloways in Canada. The bull McLeod 2nd (1876) [553] is at the head of the herd. This noble animal was bred by the Duke of Buccleugh, sired by Stanley of Drumlanrig (1346); dam, Harriet 4th of Drumlanrig (2622); both sire and dam were very successful prize winners. McLeod has taken seven first prizes, six silver medals and one gold medal at the Provincial and Industrial Exhibitions. He is a finely proportioned animal,

took the 1st prize and silver medal at London, 1885.

Milligan [1153] by McLeod, dam Nellie of Cornwall, is a fine, stylish, smooth-coated yearling bull, and one which we expect will carry off the honors at the fall exhibitions. He took 1st at the Provincial and Industrial, 1885.

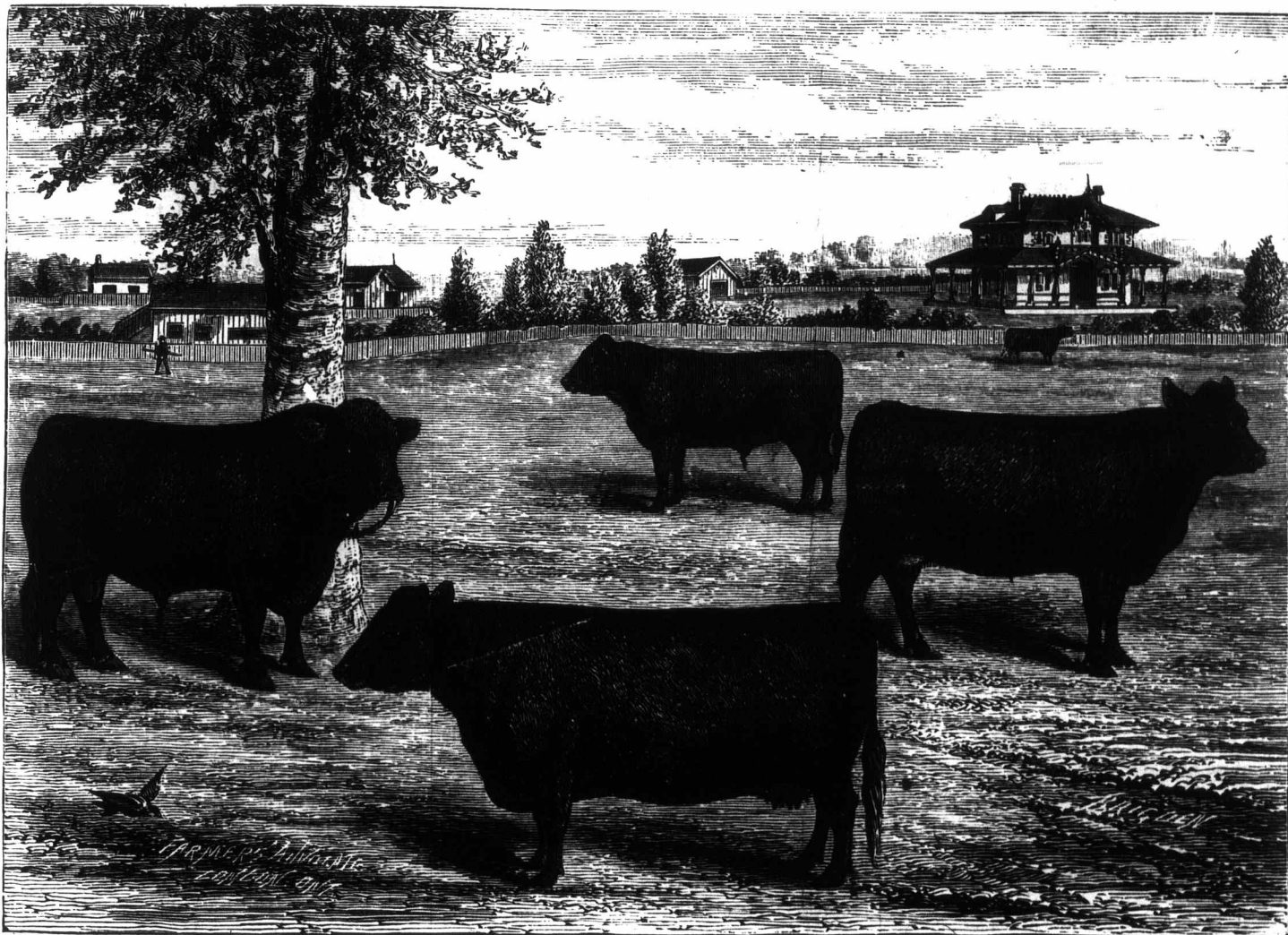
The young calf in the back ground is also from Nellie.

This breed is noted for their hardiness and superior quality of beef; being slow maturers the beef is far superior to that of any other breed generally known in this country. They are not noted for giving a great quantity of milk, yet the quality is much superior to many other breeds. They are admirably adapted for the ranches in the west.

Never feed a horse with hay from a rack located above his head, as a draught beats down which is injurious, and the dust is liable to injure the eyes.

A horse should not be overworked, for, like man, he gets tired, and to keep in good condition, he should have rest and good bedding.

Sometimes a horse will not eat his usual food. A mash of oatmeal, milk warm, is about the best food to give a horse under such circumstances. And then a horse should have grass. It is his natural food. A continual diet of hay hardens the coating of his stomach. The food is not digested. Carbonic acid gas is generated, and the horse dies in agony, swelling up, suffering from what is commonly known as colic. Then, again, horses need well ventilated stables free from draught or damp. The floor should be smooth and nearly level. It should be well drained and light, for a sudden change from darkness to light is try



GROUP OF PRIZE GALLOWAYS AND RESIDENCE OF H. SORBY, ESQ., GOUROCK P. O., NEAR GUELPH.

weighing about 2,000 lbs.; is very gentle and a valuable stock getter.

Maggie 2nd of Killimingan (3877) [571] is the cow in the foreground. She was bred by Joseph Nelson, sired by Scottish Chief (1040). She is the dam of the celebrated cow Duchess of Drumlanrig, winner of many prizes at the Highland Society and other shows. Maggie has taken a number of 1st prizes in Canada.

Second cow—Mina [783], bred by Mr. Thos. McCrae, of Guelph, is a noble specimen of the breed; very strong, and a most valuable breeder. She has taken four first prizes at Toronto, Ottawa and London.

Nellie of Cornwall (3885) [581] is also an imported cow, bred by A. Milligan. She is a handsome animal, also a valuable breeder. She

This herd, at the present time, numbers forty head. At the time of our visit, the 12th of May, we found about half the herd out at pasture. This stock had been out three weeks, and had not been fed with anything since they were turned out. As many of the young animals are from McLeod, Mr. Sorby is importing another bull this season to place at the head of the herd. Mr. S. is also a breeder of Berkshire pigs, and has, at the present time, about thirty head, many of which are imported.

Useful Hints for Horse Owners.

Horses are very delicate and liable to many ailments, and persons owning them, who are not very familiar with their nature and requirements, will find the following suggestions, condensed from an article in the Cincinnati Enquirer, useful:

ing to the eyes, and a damp offensive odor is injurious. Then, again, the bedding and litter should be carefully separated from that which is foul. They should be well shaken up and dried, and the stall should be thoroughly cleansed; and when the stable is empty, let in plenty of fresh air.

A horse's stall should be large enough to allow him to lie down comfortably in any position. A tired horse will be glad to lie down with his legs stretched out if he has room; but if you can't give him a loose box, then a light halter block should be used, and care taken to arrange the halter so that it may travel freely to allow the head to come easily to the litter, for rest and sleep are as necessary as food and water.

If a horse comes to the stable wet, he should be rubbed dry before the blanket is put on. If he is standing about in the cold, it should be put on. The legs should be rubbed, and the hoofs always examined for stones.

The Dairy.

The Best Dairy Breeds.

The most important point to be decided this month is the changes to be made in your dairy herd. No discussion need take place with reference to your beef herd, this being now a dead issue. We have insisted over and over again that you should select bulls from one of the three leading beef breeds, but you should studiously avoid those which have been pampered for prizes and awards, no matter how long a pedigree they may have.

With reference to our dairy breeds, advice is not so easily given. Although there are many excellent milkers amongst the Shorthorns, they should not be classed as a dairy breed, but for those who still adhere to general purpose cows, this breed is their only choice. The great majority of intelligent and close-calculating dairymen, who have no special interest in any breed, repudiate the general purpose cow, and we have more than once exposed the folly of attempting to combine milk and beef in the same animal. A cow may be a good beefeater and at the same time a good milker, but this only proves that she would be an extraordinary animal if she were bred and fed exclusively for one object—either beef or milk. Those who make a specialty of dairying should particularly evade the general purpose cow.

Amongst the dairying classes, those worthy of special mention are the Jerseys, the Holsteins, the Ayrshires and our Natives. If you ask us which of these is the best for our conditions and circumstances, we frankly tell you that we don't know; and we insist, moreover, that nobody else knows. Interested parties are too ready to give advice, and it should be received with extreme caution. In countries where milk brings a price based upon its quality, any given breed would not have the same value as here, where all grades of milk are sold at the same price; and therefore the first question for us to decide is, Shall we continue this practice? The answer to this question will decide the breed which you should patronize.

It is quite probable that in the near future standards will be adopted whereby farmers who send their milk or cream to the creamery will receive pay according to quality; but our cheese makers, notwithstanding their Government grant, are lagging far behind the times. We recently heard a prominent cheese-maker say that if he paid farmers for their milk according to its quality, his business would be ruined. That is as much as to say that a large number of farmers would not send their milk to the factory unless they received a share of their neighbors' profits. The fact is, our cheese-men commenced at the wrong end of their business, and they did not realize this fact until recently. They have found that they must commence with the farmer, and that they cannot make honest cheese without honest milk. This may give an impetus for paying according to quality.

At present there is a war raging between the Jersey and the Holstein men. The discussions are of no practical use, as they confuse more than they educate, but the champions of these breeds have seized an opportunity for booming up their herds, and it is quite likely that, as usual, many innocent farmers will suffer the

consequences. We have been quoted as saying that, "Of all the dairy breeds the Holstein is the best for general purposes." It is true we have said so, but we have also said that we don't want general purpose breeds. We do not make this statement in disparagement of the Holstein; we only mean that, of all dairy breeds, the Holstein has the greatest tendency to put on flesh, and as this flesh is not of a fatty nature, it is a benefit to the breed as milkers, and in reality the flesh is much more wholesome and nutritious than that of over-fed beef animals.

Between the Holstein and the Jersey, certain facts are placed beyond all possibility of dispute. We have before us a large number of analyses of the milk of these breeds; we have figured up the averages, with the following results:

ANALYSES OF JERSEY AND HOLSTEIN MILK.

Breed.	Water.	Fat.	Solids not fat.	Total Solids.
Jerseys	85.4	5.9	8.7	14.6
Holsteins	88.1	3.4	8.5	11.9

These are the averages of thousands of analyses made in different parts of the world by chemists who have no personal interest in breeds or breeders, and it may be regarded as an established fact that the Jersey milk is considerably richer, both in fat and in other solids, than that of the Holstein. With regard to the quantity, however, no reliable averages can be given; for most of the tests recorded have been made by boomers, and we have only maximum results which are of doubtful accuracy. It may be regarded as proven, however, that the Holsteins are deeper milkers than the Jerseys, but how much deeper cannot be safely affirmed, and little or nothing is known about the comparative cost of production. We therefore cry for more facts and less "braggadocio." The Jersey men stake their reputation on the quality of their milk, and the Holstein men are just as vociferous in demanding quantity as the standard, admitting the inferior quality. If any of these men will unite with us, taking the farmers' interests as the standard of their investigations, we will undertake to do them more good in six months than they can do in five years with all their booming.

The percentage of fat is the true standard of milk, and the best cow is the one that will turn an acre of food into the most butter fat. The problem is one of compound proportion, which any school boy can work out. Let us illustrate by the following statement, by which the relation between cause and effect may be seen at a glance:

Cause:	Effect:	Cause:	Effect:
12 cents.	3500 lbs.	15 cents.	X lbs.
	5.9 fat.		3.4 fat.

This statement may be read as follows: If a cow eating 12 cents worth of food per day produces 3,500 lbs. of milk in a year, containing 5.9 percent of fat, how many pounds, per year, containing 3.4 percent of fat, should a cow produce, which consumes 15 cents worth of food per day? By working out the value of X in the above ratios, we get 7,592 lbs. (nearly) as the value of the unknown quantity. In the same manner we may substitute X for any of the above quantities and find its value. It will be observed that we used the figures contained in the table of analysis, and we have supposed

that the Jersey, consuming 12 cents worth of food in a day, produces 3,500 lbs. of milk in a year, and the problem proves that if a Holstein, consuming 15 cents worth per day, produces 7,592 lbs. of milk, containing 3.4 percent of fat, her value will be precisely equal to that of the Jersey.

A distinction must be drawn between scientific accuracy, and a result which is sufficiently accurate for all practical purposes. We have not yet the time or the means to be scientifically accurate, and we must approach this standard step by step. All we are at present concerned in is to know that our existing dairying system is not accurate enough for practical purposes; neither is our boom method for testing the respective merits of our dairy breeds. For greater accuracy we should, for cheese making purposes, have included the percentage of solids other than fat in the above problem, but for our present purposes it is sufficient to know that milk rich in fat is also rich in other solids, so that very little injustice would be done by adopting the fat standard for all purposes. For scientific accuracy, the quality of the butter, the skim milk, and the butter milk, as well as the quantity and the quality of the manure, should be considered, but these are not practical questions at the present time.

In the Ayrshires and in our Natives, there is considerable variation both in the quantity and the quality of their milk. Although we have spoken so much of the Holstein and the Jersey, we are not yet prepared to recommend them as being superior, taking all our circumstances and conditions into consideration, to the Ayrshires or our Natives. All this talking and blustering add no more to their genuine qualities than the length of their pedigrees. It is well known that some of our Natives are equal to any breed, and yet there is engrafted in the skulls and gizzards of some miserable, grovelling hucksters, who would barter their immortal souls, if they had any, a debased, vile, and treacherous principle, whereby, instead of encouraging free, fair and open investigation, they seek to exterminate our Native stock from the face of the earth in order that its merits shall not become known.

Any farmer who fails to improve the dairy herd which he has cannot do so by the introduction of pedigreed stock; it would be utterly folly for him to attempt it. Entire dependence upon a piece of paper giving the genealogy of an improved bull is the very worst sort of "book farming;" the farmer must be able to judge the intrinsic merits as well. If a farmer has say ten cows, he would probably improve them more rapidly by weeding out one or two of the worst every year, keeping a bull from the best, than by introducing pedigreed blood; but the highest improvement can only be attained by weeding out the worst and at the same time introducing the best. Until the battle of the breeds is fought and honorably won, our advice to the farmer is, BREED UP YOUR NATIVE BEST.

The centrifugal separator produces better skim-milk for calves than the skim from the ordinary method of separation. Although separated milk contains less butter fat, its extra freshness and sweetness more than compensates for the extra percentage of fat in ordinary skim milk. Milk is constantly depreciating in value from the moment it is drawn, and much of it, even after only 12 hours standing, is scarcely fit for raising calves.

How to Set Milk for Profit.

In our columns we rarely permit discussion on questions which have been settled by universally recognized authorities. Such discussions serve no practical ends; for we often find men who insist that their few experiments, or their long experience, should be placed against those who make a profession of investigating similar matters, and devote their whole time and attention to the business.

In our last issue, however, we find Mr. Moyer advocating deep setting in submerged cans, while on the same page we find Prof. Arnold discussing the merits of the different systems of setting. Mr. Moyer says: "Don't use shallow pans." Although Mr. Moyer is a practical butter-maker of many years experience, yet we think he would do greater justice to the cause which he so ardently espouses if he studied the results of other investigators and put them to the test, instead of following his own ideas so closely. No investigator has ever been able to prove that the shallow pan must go. It is true that shallow pans take up more room, and require more time in washing, scouring, etc.; but so far as quantity or quality of butter is concerned, it yet remains to be proved that the shallow pan, on the whole, is an inferior method. Deep setting and submerging are only justifiable when the air is impure, and the temperature low; in a pure air the shallower the setting the better, for the air purifies, ripens, and flavors the resulting butter. The depth of setting should vary with the condition and the temperature of the air; the lower the temperature, the deeper the setting.

The most extensive experiments in the different methods of raising cream have been conducted in Denmark. The following table gives the averages of a large number of tests:

POUNDS OF BUTTER FROM 100 LBS. OF MILK:

	Ice 10 hours.	Ice 24 hours.	Water at 50° Fahr. 34 hours.	Low pans 34 hours.	Centrifugal.	Churning the milk.
Summer tests.	3.37	3.62	3.12	3.63	4.06	3.73
Whole year.	3.18	3.46	2.80	3.41	3.92	3.66
Newly calved cows.	3.40	3.67	3.00	3.79	4.18	3.87
Old calved cows.	1.52	1.92	2.10	3.48	4.41	3.96
Averages.	2.87	3.17	2.76	3.58	4.14	3.82

From the above tests it will be seen that the highest results have been obtained from the centrifugal separator, being 4.14 lbs. of butter from 100 lbs. of milk, and that shallow setting for 34 hours comes next to it—except the churning of the milk. It will also be observed that deep setting in water at about our average summer temperature (50° Fahr.) produced the very worst results. A striking feature of the above table is the great difference between the butter producing properties of the milk from newly calved cows compared with milk from cows that have not recently calved.

If such have been the results from accurately conducted experiments in Denmark, we see nothing in our conditions which would materially affect these tests, and if Mr. Moyer had attempted to disprove these experiments, instead of making a few tests to attempt to prove his own theories, he might have done something to advance our dairy interests.

Prospects of our Creamery Industry.

It could not be expected that any mutual sympathy would spring up between our co-operative cheese and butter industries. They are separate sciences, and, as a rule, separate investigators are exploring their hidden mysteries. The meetings of the Ontario Dairymen's Association have been visited by a few creamery-men; and when extensive programmes were presented, consisting of papers read by the ablest dairymen in Canada and the United States, precious time was lost in the discussion of creamery questions, and the creamery-men derived no benefit, from a business point of view, in listening to discussions on cheese-making. We are therefore pleased to see that a separate organization has been formed, which will give a fresh impetus to co-operative butter-making. The President, Mr. John Hannah, of Seaforth, is well worthy of the position he occupies, and the other officers are able and enthusiastic men.

Our readers know well that we have fought many a fierce battle against organizations supported by Government moneys, believing that these expenditures created an artificial stimulus, and that they tended to make the organizations tools to the political party which gave them life. Time and again, however, have we offered to co-operate with them, providing they promised to make party interests subservient to those of our farmers, and the result has been a constant warfare between them and us.

For the purpose of endeavoring to co-operate with the Ontario Creameries Association, we recently attended their first annual convention held in Toronto. We were surprised to find that our voice was heard, and that our suggestions received the greatest respect. The Middlesex Agricultural Council, with whom we are in sympathy in the promotion of our true agricultural interests, recognizing the present importance of our creamery industry, have appointed an expert, and intend devoting a portion of their funds in the investigation of urgent matters pertaining to our creamery interests. The Creameries Association have manfully come forward to their aid, and Mr. J. W. Robertson, the recently appointed professor of dairying at the Model Farm, has expressed his willingness in aiding to the extent of his authority. Mr. Robertson has been identified with our dairying interests for a number of years; he thoroughly comprehends and appreciates our dairying wants, and, as manager of the Model Farm creamery, we expect that practical good will result from his investigations. He faithfully promises that nothing shall be done in secret, and if the evil influences which surround him do not dampen his ardor for open and truthful investigation, the farmers of Canada may expect substantial results. He has, however, already been hampered by the refusal of the Advisory Board to recommend an assistant, and it is hoped that the Commissioner of Agriculture will ignore their advice. If we are to have public expenditures, let them be employed where they will do the most good.

The success of our creamery business is not yet positively assured. There is still some doubt that a practical and uniform method can be found for paying patrons according to the

value of their cream or milk; but this question, it is hoped, will soon be solved by the committee of experts appointed by the Ontario Creameries Association. They are starting from correct principles, and if they do not gorge themselves and precipitate a boom by an excess of legislative grants, it is quite probable that success will be assured. One prominent member of the Association assured us that the paltry Government grant of \$500, accompanied by stringent legislative enactments, was more a hinderance than a benefit, and he thought that an Association composed of men nerved by the spirit of individual enterprise would accomplish more beneficial results.

We wish the Association every success, and they may count on our sympathy and support so long as they persevere in the noble spirit which animated their initial proceedings.

Fancy Butter-making.

Have the milk of a healthy and properly-fed butter cow drawn in the most cleanly manner. Carefully strain it, and however set, run the temperature below sixty degrees, but not below forty. Skim just as the milk is the least acid; expose the cream to a pure atmosphere and moderately churn as soon as the cream turns slightly sour, so as to produce even concussion in all parts of the cream. Wash down the cream when it assumes a granular appearance, and stop churning when the butter has collected in granules the size of wheat kernels. Draw off the butter-milk and rinse in pure water below sixty degrees. Then float the butter in weak brine, to coagulate the caseine and albumen into a soluble form in about half an hour. Then thoroughly rinse in pure water. Stir enough purified salt to suit your market, and work just enough to thoroughly incorporate the salt and consolidate the butter. Pack directly (or give a second working after standing a few hours) in style to suit your patrons, or in 50lb. tubs, thoroughly saturated with brine. Rub purified salt on the inside of the tub, leaving a sprinkling on the bottom. Cover with a muslin cloth and a layer of salt, and make the package as nearly air-tight as possible. Store in a sweet, cool place. The good quality of the butter is guaranteed.—*Farmer and Dairyman.*

It would be well for people before engaging in the sale or consumption of bogus butter as it is now made, to know of what it is composed. There are sixty different articles named by seventeen patentees in their several patents. Among them are sugar of lead, bisulphate of lime, borax, salicylic acid, benzoic acid, orris root, cotton seed oil, bicarbonate of soda, glycerine, caprylic acid, alum, capaic acid, sulphite of soda, cow's udder, sulphuric acid, pepsin, tallow, lard, salt, corn starch, butyric ether, caustic potash, castor oil, chalk, slippery elm bark caul, oil of sesame, oil of sunflower seeds, olive oil, turnip seed oil, broma chlor-alum, chlorate of potash, oil of sweet almonds, oil of peanuts, peroxide of maganese, stomach of pigs, sheep or calf, nitrate of soda, mustard seed oil, nitric acid, dry blood albumen, sugar, butyric acid, bicarbonate of potash, caustic soda, dead animals, etc. But these articles are innocent compared with some things that are used. It is notorious that what is called butterine is now generally made in soap factories.

Is Canada to Enjoy Bogus Butter and Butterine Frauds?

A few weeks ago a bill was introduced into the Canadian House of Commons imposing an import duty of 10 cents a pound and 8 cents a pound excise duty on a kind of stuff dignified by the name of butterine, but also enjoys many other high-toned names. It was the purpose of our paternal Government to license its manufacture in the Dominion; but we are pleased to find that the pressure brought upon the Government was so great that it recently passed a bill prohibiting its manufacture and importation.

On behalf of our farmers and dairymen, it was our intention, and that of the Middlesex Agricultural Council, to assist in the pressure, and we accordingly prepared the following illustrations, but there is now no further use for our services. Nobody can read the times without seeing the folly of licensing an evil; it should be annihilated in its very incipiency. The bogus butter manufacturers of the United States have amassed millions of dollars, and they have expressed their determination to expend half a million to send lobbyists to Washington to prevent legislation detrimental to their interests. These millions come out of the pockets of the farmers, as the sale for cows and butter becomes materially reduced, and the consumers lose every cent which they invest in the enjoyment of this luxury. It is hard to distinguish it from the genuine article, and it has been known to be sold in Montreal for 22 cents a pound, being imported as genuine butter. The more restrictions imposed on the manufacture, the more filthy the stuff becomes, and Canada may yet be over-run with the polluted filth.

Some of the leading American papers, notably the "Western Rural," has been showing it up in its true light. Prof. Nachtrieb has been examining various samples with the microscope, and the following is taken from his report to the dairy commission of Minnesota:

"The examination of these samples was by no means exhaustive, and they would probably yield much more than the accompanying figures indicate. The best and cleanest looking sample had a butter odor and taste, and would readily pass for butter. It had a very small variety of living organisms, but a great many spores which, under favorable conditions, I have no doubt would have germinated. It also contained masses of dead mould, bits of cellulose wood, various colored particles, shreds of hair, bristles, etc. The other two samples teemed with life and yielded microscopic preparations of the moulds and bacteria that would have gladdened the heart of the student of biology. The microscope revealed the fact that the greatest variety of life existed in the inner portion of these samples, and that the outer portions contained the greatest quantity of active bacteria. The animals found in the butterine belong to the type of protozoa. Doubtful portions of worms were also noticed. Many of the protozoa, under favorable conditions, pass into an encysted stage or develop spores within protected capsules, and in these conditions lie dormant till the environment is again favorable, and it can hardly be doubted that some of the many spores found in these butterines were merely in a dormant state. The great number and variety of organisms found in the samples

indicate the use of foul water and a criminally filthy process in making it. There cannot be the slightest doubt that the person who eats so promiscuous and so lively a mixture as the butterine examined is running great risk morally as well as physically. The peace and happiness of future generations are greatly involved in the life of the present generation. By indulging in our home articles of food filled with spores and seeds of the various classes of the lower organisms, we are increasing the dangers of parasitism. Spores that now are harmless, may, by gradual adaption through more or less circuitous routes, become inimical to the health and happiness of countless millions."

Figure 1 represents a small portion of a network of moulds that were in good growing condition; figure 2 represents a portion of mould

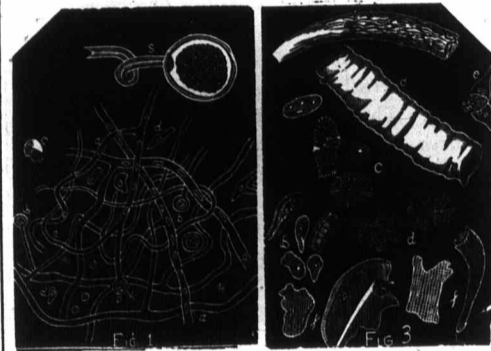


FIG. 1.—A very small portion of a fungus slightly magnified. *aa*—Stems and branches of the plant. *b*—Spore capsules of the fungus. *c*—Bursting spore capsules. *d*—Budding spores; one sending off 3 branches and another 2. *e*—Spore capsules slightly magnified.



FIG. 3.—A case of an animal related to Balantidium. *b*—Some low animals. *c*—Crystallized lard. *d*—Pigment cells from the skins of some animal. *e*—Broken capsules and spores. *ff*—A few of the other various foreign bodies.

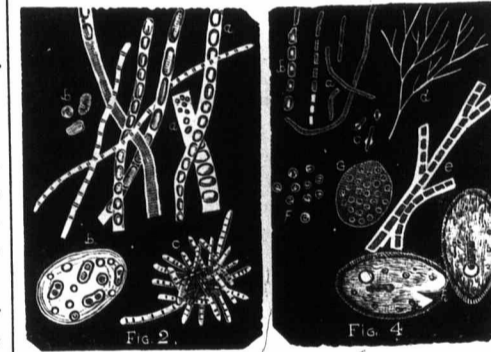


FIG. 2.—Crenothrix. *a*—Portion of a vegetative and spore forming mass. *b*—Spores imbedded in protective gelatinous mass. *c*—Small colony of filaments budded from a collection of spores. Natural habitat, foul water.



FIG. 4.—Forms of the bacillus always found in hay infusions. *b*—Spores forming. *c*—Spores budding into bacilli. *d*—Cladotrix, slightly magnified. *e*—Portion of a highly magnified isolated form. *f*—Micrococcus imbedded in a gelatinous mass. *h*—Balantidium coli, back and side view; *le* shows mouth, natural habitat, rectum of swine.

whose natural place of growth is foul water; figure 3 illustrates some of the various things found in greater or less abundance in the butterine; figure 4 illustrates two of the bacilli, one of which (*a b c*) is found in all hay infusions, and the other (*d e*) in pond water containing decomposing organisms. *f g* represents micrococci. Micrococci occur wherever there is decomposition of organic matter. Some of those intimately related to specific diseases are the micrococci of smallpox, erysipelas and diphtheria. *h* is a small animal, balantidium coli, of which a tolerably good specimen was found. This animal was found nearly thirty years ago in the fecal evacuation of two hospital patients suffering from chronic diarrhoea. Whether *B coli* was the cause or the accompaniment of the disease could not be decided by the limited number of observations. Later they were discovered in great abundance in the rectum of the hog. *H* represents the mouth.

Meeting of the Ontario Creameries Association.

The first annual convention of the Ontario Creameries Association was held in the Walker House, Toronto, on the 5th and 6th ult.

The following officers were elected:—

President, John Hannah, Seaforth.
Vice-President, M. Moyer, Georgetown.
Directors: No. 1 Division (Stormont, Dundas, Glengarry, Prescott and Cornwall), A. Broder, M.P.P.; No. 2 (Lanark, Renfrew, Carleton, Ottawa, Russell, R. J. Graham, Belleville; No. 3 (Frontenac, Grenville, Leeds, Kingston and Brockville), D. Derbyshire, Brockville; No. 4 (Hastings, Addington, Lenox and Prince Edward), John Sprague, Ameliasburg; No. 5 (Durham, Northumberland, Peterborough and Victoria, including Haliburton), J. Garret, Bethany; No. 6 (York, Ontario, Peel, Cardwell and Toronto), Thos. Johnston, Toronto; No. 7 (Hamilton, Wentworth, Wellington, Waterloo, Halton and Dufferin), V. E. Fuller, Hamilton; No. 8 (Lincoln, Niagara, Welland, Haldimand and Monck), William Rolston, Caledonia; No. 9 (Elgin, Brant, Oxford and Norfolk), M. Pusey, Selkirk; No. 10 (Huron, Grey and Bruce), George Browning, Formosa; No. 11 (Perth, Middlesex and London), E. Miller, Parkhill; No. 12 (Essex, Kent and Lambton), Peter Graham, Lambton; No. 13 (Algoma, Simcoe, Muskoka and Parry Sound), J. T. Brill, Guelph.
Auditors: P. A. Carpenter, Collingwood, and James E. Ballie, Toronto.
The Directors will appoint a Secretary-Treasurer.

THE PRESIDENT, in his opening address, explained the circumstances which led to their incorporation by Act of the last Ontario Legislature. He stated that the creamery men had failed to receive a hearing at the meetings of the Dairymen's Association, and that it was necessary for them to have an association of their own. The dairymen being supported by legislative grants, the creamery men applied for Government aid; a sum of \$500 was granted in the bill of incorporation, and they received in addition a private grant of \$50 from Mr. Valancey E. Fuller, Hamilton.

JAS. CHEESEMAN, Montreal, read a paper on Economical Dairying. He said the average quantity of milk per cow per season in Great Britain was 4,500 lbs., while Eastern Ontario only produced 2,700 lbs., and Western Ontario 3,000 lbs. He insisted upon the necessity of increasing these figures; also the per acre per annum capacity of our pastures. He recommended the continuation of tests at exhibitions, somewhat similar to those conducted at London and Toronto last year. He presented tables showing how these tests could be improved on with regard to accuracy.

R. J. GRAHAM, Belleville, said it cost him \$1.20 per 100 lbs. to produce milk. His cows were Shorthorn and Ayrshire Grades, and Natives. In his experience, all the other cows were far behind our Natives in the production of milk. He based his calculations on the following prices: Hay, \$8 per ton; pea-meal, \$20; bran, \$12; middlings, \$14; sugar beets, 8 cts. per bushel. He calculated the manure as balancing the cost of attendance. It took two acres of good clover to keep one cow during the summer months. The average quantity of milk per cow was 10 quarts per day. He said one man could attend 50 cows, winter or summer. He allowed 10 cows for one milker, milking at the rate of 10 cows per hour.

P. A. CARPENTER, Collingwood, who kept accurate accounts with two cows, a Native and a Shorthorn Grade, paying \$10 a ton for hay, \$12 for bran, and 2½ cents a pound for linseed meal, said he produced 10 quarts of milk per head per day on an outlay of 15 cents on each cow daily. His ration was 18 lbs. hay, 8 lbs. bran, and ½ a pound of linseed meal, being a cost of 1½ cents per quart—an equivalent of

60 cents per 100 lbs.—just half of Mr. Graham's cost of production.

M. MOYER read a paper on handling milk and cream. He said there was the same difficulty in getting cream to the creamery in a right condition, as in getting milk to the cheese factory. A small quantity of bad milk would spoil a whole mass of cheese; so with the cream—it did not take much to spoil a whole batch of butter. Farmers, as a rule, were cleanly people, but there was usually about one in ten who did the whole mischief, being careless, dishonest and dirty—doing everything by guess and acknowledging no system. He spent a good deal of time in standing by them and showing them how to do the setting and skimming. He advocated deep setting and submerging in water. The cans should be set in running water where possible, either by a running spring, or by a trough near the pump. The colder the water, the more cream, and it would rise quicker. The milk should always be set as quickly as possible after milking. Some milks creamed much easier than others. The milk did not need airing, providing the cow was in a healthy condition, and her food contained nothing deleterious.

GEO. BROWNING, Formosa, described his method of testing the cream and churning. He could not do without the Cherry Test Churn, for he had found that the same quantity of cream from different patrons produced from 4 to 12 ounces of butter, and each patron should be paid according to the quantity of butter made from his cream. This variation made the patrons more careful in skimming. A collector could detect when there was too much milk left in the cream, and then was the time to do the testing.

J. W. ROBERTSON read a paper on the production and treatment of milk. He said clover produced the best and most butter. They knew more about butter-making than about feeding, and the latter was the right place to commence to learn. Bran, peas and corn mixed were the best butter-producing foods, if fed in the right quantities and relative proportions. A cow should never be allowed to go back in her milking. Draining the pasture field was helpful in making richer milk, and a superior quality of butter. It resisted drought, made the herbage better and sweeter, and made the butter firmer and of a better flavor. By fencing the pasture field off into small areas, there would be a gain in the quantity and the quality of the yield, the exercise of the cows not being excessive, and there would be more and better food. The water should be pure and abundant. The cows should be milked with dry hands, and the udder should be brushed or washed clean. The strainer should be cleansed by hot water and brush for the purpose of effectually destroying the germs which have proved to be a source of fermentation and disease. Cows should not be milked at the dung pile, but a separate enclosure should be provided and kept clean. Cream rose more rapidly now than in the fall, the butter globules being larger, and fall butter was more solid. There should be some means of removing the sewage from the factories; some of them could be scented two miles distant. The best plan was to dig open trenches with underground drains about a foot deeper, allowing the liquid to filter through the soil,

thus utilizing the sewage as a fertilizer. Maple floors were better than cement; the former could be washed, while the latter broke away gradually in small particles. Pine gave off an offensive odor when damp.

Some discussion here arose as to the relative merits of the different kinds of floors for butter factories, in which bricks were generally condemned; but no floor in use seemed to give general satisfaction.

R. J. GRAHAM read a paper on permanent pastures, with which he had grand success. He recommended the following formula for a low-lying, sandy loam field: Timothy, 7 lbs.; Orchard Grass, 4; Meadow Fescue, 2; Red Top, 4; Kentucky Blue, 2; Italian Rye, 2; Perennial Rye, 2; Creeping Bent, 1; Tall Oat, 2; total number of grass seed per acre, 26 lbs. Red Clover, 1 lb.; Lucerne, 4 lbs.; Yellow Clover, 1; Alsike, 1; White Dutch, 3; total lbs. of clover per acre, 10; grand total, 36 lbs. per acre.

W. A. MACDONALD, London, read a paper on testing cream and milk, in which he doubted that the Cherry Churn was the most practical test, taking both accuracy and quickness into consideration. The percentage of fat was the true standard, and he thought this could be more easily ascertained than the butter standard; but an examination into all the existing tests should be made.

A motion was made to the effect that Messrs. W. A. Macdonald, Valancey E. Fuller, and J. W. Robertson be appointed as a special committee of the Association to examine into the different methods of testing milk and cream, and report at the next meeting. The motion was carried unanimously.

Mr. Primrose McConnell, an English dairy lecturer, says: "There are two systems of butter-making—one from sweet and the other from sour cream—both of which have much in their favor. By the former method the cream is used fresh, and it is possible to milk a cow, separate the cream, and churn into butter in less than an hour, the product having the finest delicate flavor and the best keeping qualities. In the other system the cream is kept for several days to allow a certain amount of acidity to develop, this being sometimes further aided by the addition of a little buttermilk. The cream is churned easier with this latter arrangement, and the butter is of a stronger flavor, but will not keep so long." Mr. McConnell also says that sweet cream should be churned at a slightly lower temperature than sour cream, and that the range of churning temperature should be 55° Fahr. in the summer to 65° in winter.

The quince grows well over a large part of the Province of Ontario, but as its value for preserving and flavoring is generally unappreciated or almost unknown, this fruit is not extensively cultivated, despite the high price obtained for it. It has been commonly supposed, says the Secretary of the Maine Pomological Society, that the quince required a low, damp situation. Hence it has been planted in out-of-the-way places and neglected. It succeeds better in a rich, mellow, deep soil, even if quite dry, than in one of opposite character. But a soil moderately moist, if well drained, is better still. The land should be kept in cultivation and receive a liberal top-dressing of manure every year. Mulching liberally will, to some extent, supply the place both of cultivation and manure, or be useful as an auxiliary to either or both.

Veterinary.

Medicines for Farm Stock.

Prof. Brown, Veterinary, in the *Journal of the Royal Agricultural Society of England*, tells the farmers how to make up a convenient "medicine-chest" for the domestic treatment of animals. The following is his list of remedies, with the doses, arranged in alphabetical order:

Aconite, Tincture (Fleming's).—Action sedative. Allays fever, and externally relieves irritation. Dose: horse and ox, 10 to 30 drops; sheep, 5 drops. Add water in proportion of a tablespoonful to each drop of tincture. For a lotion, use a tablespoonful of the tincture to a pint of water.

Alcohol, in the form of whiskey or brandy or strong ale, is useful for cases in which the system requires to be temporarily raised from a state of depression. Doses: horse or ox, whiskey or brandy, 4 to 8 tablespoonfuls; sheep, 1 to 3 tablespoonfuls. Strong ale, horse or ox, 1 pint; sheep, $\frac{1}{2}$ pint. Repeated two or three times a day.

Aloes.—A purgative for horse or ox. The ordinary aloetic mass and the solution should be kept at hand. Both preparations must be obtained from a druggist. Doses: horses, 4 to 6 drachms of the aloetic mass as an ordinary purgative; or, $\frac{1}{2}$ pint of the solution. Usually given in combination with linseed-oil in cases of continued constipation.

Ammonia Liniment.—Made by adding a strong solution of ammonia and oil of turpentine, $\frac{1}{2}$ part, to soap-liniment. A pint bottle of it, carefully stoppered, should be kept at hand. The liniment is useful as an application for sore throat and for all cases in which an external stimulant is necessary. Must be applied with the hand, and well rubbed into the skin.

Areca-Nut.—A useful worm medicine. The nuts should be kept in a stoppered bottle, in a dry place. When required for use, the quantity should be grated by means of a nutmeg-grater. Doses: horse or ox, $\frac{1}{2}$ ounce to 1 ounce of the grated nut, mixed with the food (corn and bran); sheep, 2 drachms; dog, $\frac{1}{2}$ to 1 drachm.

Calves' Cordial.—A form of chalk-mixture for calves and sheep. To be prepared by a chemist as follows: Prepared chalk, 2 ounces; powdered catechu, 1 ounce; ginger, $\frac{1}{2}$ ounce; opium, 1 drachm; peppermint-water, 1 pint. Dose: calves, 2 to 4 tablespoonfuls; sheep, 1 to 2 tablespoonfuls.

Carbolic Acid.—A powerful caustic and antiseptic, ordinarily used, in combination with 50 to 100 parts of water, as an antiseptic lotion to unhealthy wounds, and for disinfection purposes.

Carbolized Cotton and Gauze.—To be obtained of the druggist. Valuable antiseptic applications to wounds.

Castor-Oil, also Linseed-Oil.—Purgative. Doses: horse or ox, 1 to 2 pints; sheep, 4 tablespoonfuls.

Colic Mixture.—Equal parts of laudanum and sweet spirit of nitre, and $\frac{1}{2}$ part of chloric ether. A half pint bottle of it to be kept at hand. Dose: horse or ox, 2 to 4 tablespoonfuls in 3 parts of a pint of water.

Electuary.—A soft mass compounded with honey or treacle. Must be prepared by a druggist as follows: Camphor, 2 ounces; pow-

dered myrrh, licorice-root, and nitre, of each 8 ounces; extract of belladonna, 2 ounces; treacle, enough to make a soft paste. Dose: horse or ox, a portion of the size of half a walnut, to be put at the back of the mouth two or three times a day with a piece of stick. Useful in colds, sore throat, and influenza.

Ginger.—Stimulant. Forms an essential part of all cordial powders for exciting appetite. May be given with strong ale in cases of prostration from overwork or disease. Dose: horse or ox, 1 to 2 teaspoonfuls of the powder in a pint of ale; sheep, one-fourth of the quantity.

Mercurial Ointment (blue).—To be purchased ready for use. Valuable to promote the growth of hair, and in some forms of skin-disease. Only small quantities may be applied.

Mercurial Ointment (red).—Binioidide of mercury. A good form for blisters in cases of splint, or after sprain of tendons.

Nitre (Nitrate of Potash).—Diuretic and fever medicine. Dose: horse or ox, 2 tablespoonfuls daily in drinking-water, or half the quantity in the food; sheep, 1 teaspoonful in the food.

Salts (Epsom or Glauber).—Common purgatives for cattle and sheep. Dose: ox, 12 to 16 ounces dissolved in a wine bottle of hot water (a tablespoonful of ginger may be added); sheep, 4 to 6 ounces.

Salicylic Acid.—A valuable antiseptic, effective in the treatment of foot-and-mouth disease. Dose: 4 tablespoonfuls of the acid are to be put in an earthen vessel, and dissolved in a quart of boiling water; hot water is then to be added to make a gallon. This solution is to be used to syringe the feet, and lave the mouth and nostrils, and also to wash the udder, and finally to sprinkle over the litter. Half a pint of the solution may be added to the gallon of drinking-water every day. The dry acid (powder) may be sprinkled on the feet after they have been syringed with the solution.

Santonine.—Used to expel worms; one of the most effective agents for this purpose. Dose: horse, 15 grains, with 3 drachms of aloes; to be given in the morning before feeding, and repeated after two days.

Sulphur (Flowers of Sulphur).—A very valuable alterative. Dose: horse or ox, a tablespoonful, with a teaspoonful of nitre, to be given in the food once a day; sheep, quarter of the quantity. Sulphur mixed with any common oil forms an excellent dressing for mange or surfeit in animals.

Turpentine, Oil of.—Stimulant to the skin. Internally used to expel worms. Useful in "husk in calves." Dose: a tablespoonful daily in half a pint of a mixture of milk and eggs; lambs, one-quarter of the quantity.

Vaseline.—Emollient to the skin. Effective in irritation of the surface, chapped heels, mud-fever, especially if mixed with $\frac{1}{2}$ part of trisnitrate of bismuth or carbonate of lead (white lead), or oxide of zinc.

Zinc, Chloride of.—Mixed with 50 to 100 parts of water, it may be used for the purposes for which carbolic acid is employed.

When several hens are carrying chicks in the same yard they will be liable to quarrel and destroy the chicks. A hen will injure a strange chick, and for that reason care should be taken to have a coop and run for each hen. A dozen hens carrying chicks are more troublesome than a brooder, as it is much easier to care for several hundred chicks in a few brooders than to separately attend to a large number of hens.

Garden and Orchard.

Papers for Amateur Fruit Growers.

IX.

[By L. Woolverton, Grimsby, Ont.]

STRAWBERRIES AND CHERRIES.

June is the month of strawberries—first of the fruits of the season; it is, at the same time, one of the most welcome. With what exclamations of joy the first ripe berry is discovered, and how eagerly the second is searched for among the secretive leaves!

For many years the strawberry has held the first place for profit among small fruits, and especially since the introduction of the Wilson; and, notwithstanding the very productive Cuthbert raspberry, it is an open question whether the strawberry, properly cultivated and properly marketed, does not still take the lead.

The gathering of the strawberries must not be done by careless hands. Who could be expected to pay the same price for a bruised, mussy basketful as for bright, clean, fresh-looking fruit, and yet this is just how one-half the strawberries appear when offered for sale, or, worse than this, sometimes a few bright specimens on top cover a mass of rubbish beneath. Every berry should be nipped off with a half-inch of stem by the thumb nail. Each picker should have a carrier holding six baskets, and should use one of them for sandy or over ripe specimens; the rest, when filled, should be ready for shipping with turning out and re-packing.

The packer in the shanty will then only need to keep an account with each picker, inspect their work, and turn down the stem ends of the berries on the top of each basket before setting it in the crate.

The marketing is the next consideration. Of course, when it is possible, the grower will carry his own berries to market and sell them himself, thus saving all expense; but the most of us are so unfortunate as to be necessarily put to the expense of both express charges and commission for sales, which eats a great hole in our already too small profits.

In shipping berries by express, it is not best to use too large a crate. Fifty-four quarts are too many to be put in a single package, because express agents will not handle a heavy parcel carefully. I referred in my last to the basket crate, manufactured at Grimsby. It holds twenty-four quart baskets, and has a handle by which it can be easily and gently lifted about.

The crates are best addressed with a stencil plate, by which the name and address of both consignor and consignee may be quickly put on each cover; in this way there will be no chance for packages to go astray, while with cards tacked on, or tags fastened to the handles, a parcel sometimes misses its destination through loss of its address.

Cherry picking will begin during the month of June in those southern sections of Canada in which the finer varieties of English Heart cherries are grown. The Dukes and Morellos are a little later, but of these so many excellent kinds are being introduced that quite a new impulse is being given this industry. Among the prominent varieties of these latter are the

Olivet, Montmorency, Louis Phillips and Early Richmond.

For several years the cherry crop has been very light indeed, along the south shore of Lake Ontario, and in other parts of Canada also; but the beautiful masses of white bloom which decorates every tree just now (11th May) give promise of an immense crop this season.

Picking cherries for market is rather a formidable task, especially if the crop is light. For this work good ladders, and small picking baskets holding four or five quarts each, are essential, and the baskets should be furnished with hooks made of strong wire, for attaching them to the limbs and to the rounds of the ladders.

I was formerly accustomed to employ boys for this work, but they needed so much help in the way of moving ladders, and so much oversight, that I have of late employed men instead where available. A good trusty man will carefully gather, on an average, fifty or sixty quarts per day, and this cost of say two cents per quart is about as cheap as one can expect to have the work properly done. Pickers need to be instructed not to handle the cherry itself, because the slightest bruise or the loss of the stem soon begets decay; but the stems only should be gripped, and so the fruit gently removed to the basket.

The twelve quart peach basket is a very useful package for shipping cherries. In packing, great care is necessary to remove all bruised or decayed specimens, as the rot will rapidly spread from one to another, and soon spoil the whole contents of a basket.

Cultivating and Manuring Orchards.

There are few operations in farming but have both advantages and disadvantages, and this is especially true in the treatment of orchards; no inflexible rule can be laid down to suit all conditions. Trees are plants, like all other farm crops, and if the soil containing the one should be cultivated and manured, what reason can there be for making an exception in the case of the other? It takes exactly the same plant food to build a tree and form an apple as it does to manufacture any other farm crop; and yet many farmers expect to keep on cropping the orchard, and get the trees and fruit thrown in for nothing; they think they should not plow without planting. If the trees are farther apart than the stalks in a corn crop, it is just for the same reason that corn is set farther apart than wheat, the difference being merely a matter of degree, and every crop should have space consistent with its root and foliage dimensions and with the quantity of heat and light to be admitted from the sun. A crop of grain or grass may be grown in an orchard just on the same principle as radishes may be sown between rows of cabbage; if the soil is rich and clean, both will flourish so long as the cabbage leaves do not overshadow the radish plants.

The thought of turning an orchard into a summer fallow every year is sufficient to make many farmers shake their heads, contending that they neither have the time nor the means for such work, and then when the thought of manuring occurs to them, it is enough to put them into a rage; the manure, of course, is all required for the summer-fallow, there being

none left even for the garden. Orcharding can be conducted on the intensive scale as well as other branches of farming; not that the trees can be planted closer together than usual, but the productive capacity of each tree can be doubled. To grow a large, woody tree producing very little fruit, is like growing a large-framed, voracious cow which gives a small flow of milk of inferior quality; it is much cheaper to grow a small cow that gives a large flow of milk—or, still better, a large cow that gives a very large yield of milk.

In the hands of the skillful orchardist, the apple-tree can be trained to suit his purpose. If the soil is rich, naturally or by liberal manuring, the young trees will bear an overgrowth of wood, to the detriment of their fruit bearing qualities. This tendency is more noticeable in other farm crops; take a field, for instance, that has a surplus of vegetable matter, or barnyard manure, and it will be observed that the crop grows stalky, and the fruit, though sometimes bulky, is inferior in quality. The best and cheapest remedy for this condition is constant cropping with a liberal application of mineral manures, such as ashes and mineral superphosphate. In such cases an orchard should be cropped, and if the excess of vegetable matter is on the surface, the root pruning caused by plowing will not be so injurious as in other cases, for many of the root fibres near the surface, by being destroyed, will not take up such large quantities of nitrogen, and the roots will seek the mineral food below. Soils that have a great depth of vegetable matter should never be used for orchards, and when an excess of humus is near the surface, with a clayey, well-drained subsoil, the orchard may then be more or less cropped, providing it be properly manured; but deep-rooted crops should be avoided.

But this condition is the exception rather than the rule. Of the other methods of treatments we have (1) cultivation without cropping, and (2) seeding down. In poor soils, there should be constant cultivation and liberal manuring without cropping. The objection to this method is that the surface roots are being constantly disturbed or broken. This difficulty may be more or less overcome. If the land is plowed in spring, the broken roots will be repaired before active growth commences, very little damage being done, and the cultivation during the remainder of the season will consist in merely scuffling to keep down the weeds. The main advantages to be gained by thorough cultivation are (1) the increase of soil moisture, and (2) the increase of fertility caused by tillage and the absorption of nutritive material from the atmosphere—both of which are required in a poor soil. Other methods of increasing the fertility may also be required, of which we have (1) barnyard manure, (2) green manuring, and (3) commercial fertilizers. Of the first nothing need be said, but in the second a word of caution is necessary. Clover, which is the best green manure for all other purposes, is unsuitable for orchards. The roots go down deep into the ground, and take up the nutriment which should have been left for the deep roots of the tree, and another disadvantage is, you can't plow the land early in the spring, when it should be plowed; if clover is used at all, it should be mown in June, and left scattered on the ground as a mulch, being careful

not to leave any near the trunks of the trees. Rye sown in the fall should be used for green manuring, as it is a shallow rooter, and may be turned under early in the spring.

With reference to commercial fertilizers, a knowledge of the first principles of agriculture is required before they can be used with profit. We have the richest phosphate mines in the world, and we are convinced that if the first principles of agriculture were generally understood, every pound of the thousands of tons which are being annually exported would find its way to our farms, instead of going to enrich the farmers of other countries; and not a single ounce of ashes would leave the farms on which they have been produced; in fact, we would be importers of fertilizers, instead of exporters.

Seeding down should only take place when the soil is rich or when liberal top-dressings are applied. The chief objections are (1) the deep clover roots, as before mentioned, and (2) the liability of the ground becoming sod-bound, preventing the admission of air and choking up the feeding roots of the trees. This may be prevented to some extent by keeping out heavy stock, admitting only calves, sheep and pigs. But the breaking up of the sod plays havoc with the roots of the trees, and they are encouraged to go down into the cold, hard earth, producing late crops of fruit, usually of an inferior quality. But in some situations, there is a point gained in producing lateness, especially where late spring frosts abound. By retarding early budding, the blossoms often escape these frosts; but this can be brought about by other means than by cultivation; the trees may be mulched late in the fall, after the first heavy frosts, which will keep the ground moist and cool in the early spring, preventing too early a growth.

But does all this labor and outlay pay? Why, certainly. You will have as much fruit from one acre as you will have from two or three under the ordinary mode of treatment, the profits of the surplus acre or two paying for the extra expenditures, and the superior quality of the fruit will more than pay for learning how the orchard should be treated.

Various Notes on Destructive Insects.

THE TENT CATERPILLAR.

A writer in the Mass. *Ploughman* thus refers to his experience:—

"My practice is to get on a horse. Passing through the rows of trees on horse back you have a good opportunity for observation; you can see the tents upon the limbs. You ride up to the tree and you can reach most of them, for as a rule, they are not inclined to take the higher limbs. I usually put on an old coat with two good side pockets. I take the tents, roll them up, put them into my pocket and ride to the next tree. In that way I gather them all, and when I get to the house I unload my pockets into the stove, which completes the operation. By this means it is now very rare to find a tent caterpillar in my orchards."

THE CABBAGE MAGGOT.

This insect was very destructive last year. It attacks the roots of the young cabbage plants, and continues to infest them until the crop is harvested. Several broods appear during the season. The insect often eats its way into the interior of the stalk. Affected plants can easily be detected by the sickly and wilted appearance of the plants, although thrifty looking plants are sometimes affected by it. It is supposed to be the larva of the cabbage fly (*Anthomyia brassicae*). Of the remedies tested, the kerosene emulsion appears to be the most effective, and is applied by digging several holes in the soil near the cabbage roots, filling them with the liquid. The emulsion is prepared as follows:

Dissolve one pound of common hard soap in

four quarts of soft water; when the soap has dissolved, and while the water is boiling, remove from fire and add one quart of kerosene oil. Continue stirring the mixture until it is cold and the oil is thoroughly mixed with the soap. In applying to the plants use one pint of the emulsion dissolved in ten gallons of hot water. It will not dissolve readily in cold water. Soot water is also said to be a good remedy, and will act as a fertilizer to the plants. The soot should be placed in a bag and then put into the water and allowed to soak for about twenty-four hours before applying to the soil around the plants.

THE ONION MAGGOT.

Miss Ormerod, the distinguished entomologist of the Royal Agricultural Society, says:—"The amount of damage to onion crops from the maggot is frequently so great that for some years I have been experimenting on the subject. I found that the fly (when it could) laid its eggs on some exposed part of the bulb, often almost beneath it, which in common onion practice the exposed state of the bulb allows. On noticing this, about three years ago, I covered a plant up to the neck of the bulbs, and next morning found fly eggs deposited on the onion leaves and dropped at haphazard on the ground—where they perished, and the onions, being saved from attack, did well. The following year I had some part of the crop in rows earthed up with success. The onions were firm and sweet, and, though not as thoroughly protected by the rough earthing up as by my own hand dressing, it answered to some extent, and the onions in many cases were not injured or grew past attack from being in favorable condition. This year I had a trench prepared as if for celery, and the onions sown along the bottom, and as they grew the sides of the trench were filled in on the bulbs. They grew extremely well, notably better than those in the bed alongside, and on raising them to-day I find them sound and fine bulbs, very free from any mark of insect injury. I venture to submit the plan of growing to your inspection, as, though it probably could not be brought to bear in field use, it appears available for garden growth, and especially for cottage gardens, where there is only a small quantity of ground, and where the loss of the little crop is a serious lessening of comfort to the family."

A writer in the *German town Telegraph* gives the following experience with the Onion Maggot:—"A few years ago I sowed half an acre to onions. They came up splendidly, but soon the maggot commenced to prey on them and continued to do so until I became discouraged, and I thought that if they continued to eat one week longer my prospect for a crop of onions would be ruined. I sent and got five gallons of tar and put one gallon into forty gallons of water, and stirred it up thoroughly so as to give it the tar scent. I sprinkled my onions over once with this tar water, doing it with a common watering-pot. I saw no more effects of the maggot, and had a nice yield of onions. I think that the scent of the tar water drives the fly away, and it was by this means I saved my crop of onions."

BARK LICE AND BORERS.—The borers, both round and flat-headed, are doing very serious damage all over the North, and no one who grows apples should be indifferent to the fact. Another enemy quite as serious in many sections is the bark lice. I saw many trees the past season actually dying from their attack. From repeated trials, now practiced for years, I can praise very highly a preventive for both the borers and lice. One quart soft soap dissolved in one gallon water, heat till it boils, then stir in one pint crude carbolic acid. About three weeks after the trees blossom scour trunk and main branches with this preparation very thoroughly by use of a cloth in the hand or an old shoebrush. This treatment will go far toward insuring vigorous apple trees. Of course, if the borers are allowed to gain a foothold they should be dug out, and the sooner the better.—*Professor A. J. Cook in New York Tribune.*

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.

Stone Drains.—I would like very much to get some information through the *ADVOCATE* on a question that has troubled me a good deal. We have a farm that is very stony and quite wet, land being springy in some parts and mostly steep; cannot be worked properly without ridging high, which is unprofitable, as good crops only grow in middle of ridge. Do you think it would pay to underdrain? I would like very much to use some stone in that way, but don't know how to do so to best advantage. Have made some drains that way and they become filled up after a little. How should stones be laid in bottom of drain? Would it be worth while to leave a passage built over in middle of drain and stand flat stones up against sides? I have read with interest your articles on underdraining, but found no answer to the questions here put. A great part of my land seems to need underdraining, but as it costs a good deal, I would like to profit from your experience and observation in the matter of laying stone drains. The drains have never been made in this neighborhood.—J. T. H., Elgin, Albert Co., N. B.

[Your land needs drainage. In springy places it is usually desirable to dig or bore into the subsoil, and if you find a sandy or gravelly bottom it will make a good outlet. If you can reach such a stratum by digging, dig a hole large enough to afford sufficient drainage; but if you have to bore, several holes may be required. If you dig in a low place, you may either lead drains into these holes or dig more holes in other parts of the field. If you can't get such an outlet, your only plan is to drain in the ordinary way. Where tiles can be had, no other material should be used, as we know of no other method of making a permanent and efficient job. There are two methods ordinarily adopted for making stone drains: 1. Throw a good layer of stones loosely into the bottom of the drain, cover with straw or other material and then fill up with dirt. 2. Build a layer of stones on each side of the drain, and cover with flat stones. The stiffer the soil, the longer such drains will last. The latter method does not pay, for the extra work in digging a wide drain would pay for tiles; but the former method may sometimes be used as a make-shift. All such drains soon fill up and choke, and if you wish to turn them into tile drains, the taking out of the stones makes a lot of work, although the drains may be left, and the tile drains put in fresh places.]

Millers' Tolls.—I wish to call your attention through our valuable paper to the way we farmers are galled by the millers. I know an instance where there was 15 lbs. taken from each bushel of a grist of 19 bushels of wheat, and a refusal to take pay for the same, and a professional limb of the law said he did not think there was any law regulating tolls; it was only a custom. This happened in Ingersoll, and I am informed that it is getting to be a custom in this country where there are roller mills, to take what conscience allows. Now, your

humble servant wrote to a leading paper for information, and for answer it said: 1-12 was the lawful toll, and the law was passed over 40 years ago. Now I want to know when that law was passed, in what year, and if there is a penalty for taking unlawful toll for grinding. I am satisfied that the law was passed over 70 years ago.—W. C. A. C., Ingersoll.

[32 Geo. 3., c. 7, Sec. 3, of the Consolidated Statutes of Upper Canada provides: "That no owner or occupier of a mill, nor any person employed by him, shall demand or take as toll a greater proportion of any grain brought to him to be ground and bolted than one-twelfth part thereof, for grinding and bolting the same, under a penalty of \$40 for every such offence; one moiety thereof to be paid to Her Majesty for the public uses of the Province, and the other moiety to any person who sues for the same in any Court of Record." See Revised Statutes of Ontario, Chap. 113, Sec. 1.]

Bone Mills.—Will you please state in your next number if you know of any cheap bone mills made in the Dominion. The Waterous Co. do not make them. I believe bone dust to be more beneficial to land than any other fertilizer that can be applied, if only a small mill that would come within the means of the average farmer could be obtained. Crops of all kinds were good here last year, roots, especially potatoes, an extra crop, and have kept well through the winter.—J. E., Athol, Cum'd Co., N. S.]

[Mr. Wm. Rennie, of Toronto, sells a small bone mill which he has advertised several times in the *ADVOCATE*. Refer to back numbers. As a rule bone dust or superphosphate is best for most soils in Canada, but it is often desirable to mix it with other fertilizers in order to get the best results.]

Book Farming at the Model Farm.—Professors urge the farmers to educate their boys, teach them chemistry, etc., so that they can take up a handful of soil and analyze it, and tell you what it is fitted to grow; then there will be no failure of crops, the land will yield double or treble the quantity, and fill the pockets with the needed dollar. For the practical see report of the Model Farm, where it says: "We thoroughly underdrained a frog pond at a great expense and summer fallowed it thoroughly, and the following spring sowed with spring wheat; the wheat germinated quickly and made rapid growth for a while, and then died out. We then gave it a good dressing of lime and sowed wheat again the following year with good results." Another lecturer on clover and grasses stated that to be successful in growing clover you must have the field surrounded by old walls. The prevailing idea amongst successful farmers is that to be successful with permanent pasture you must have it surrounded with Government grants.—W. C. S., New Hamburg, Ont.

[Testing soils by chemical analysis has not proved successful for practical results. In some fields a sample from every square rod would be required for analysis, as the character of the soil varies so much, and then the physical character of the soil and subsoil is just as important in the production of crops as the chemical composition. The best and cheapest way to analyze soils is to test different kinds of fertilizers on small plots, and note the results, as has been in the experiments with potatoes as reported in recent issues of the *ADVOCATE*.]

Notes from Manitoba.—I have seen the correspondence in your April number from the pen of R. C. B., Stodderville, Man., and I would like to correct a few of his statements. Your correspondent said barley can be bought for 25 cents, which is wrong; according to Winnipeg market of March 11th, barley was 30 to 40 cents per bushel; oats, instead of 18 cents, were 28 to 30 cents per bushel; and he quoted pork at 44 cents when it is 54 to 6 cents per pound. He also said he was glad to learn from your correspondent that in some parts of our country where prosperity, and its twin sister, contentment, are no strangers, "the deserted farms did not look like contentment." Now I do not wish to say there are no hardships in this country, but who can expect to find anything else in a new country? Look at what Ontario was 50 or 60 years ago compared with Manitoba. I would like to say there are some who have come to this country with the expectation of getting rich by raising grain in one summer, and they have taken up a place and broke 50 or 60 acres, and had to get horses to work it with, also a binder, a seeder, and likely a horse rake and a mower, then his crop is destroyed by hail or frost and he has no money to meet his payments; he then curses the country and leaves it. But my readers must not think this is a common occurrence, as I have been in the country eight years and have seen but two frosts, although there have been three in other parts of the Province. This class is not the farming class, but mostly tradesmen and clerks that have left other parts of the world and come here. Your correspondent says: "Still we languish; how is this? The want of railway facilities. It is neither pleasant or profitable to have two or three days journey to draw your grain to market." Now I do not see why he has said this, as on looking at the map, I find that

Stodderville is within five miles of the railroad, and has been for the last three or four years. Now we have had to draw our grain nearly forty miles until last fall, when the railroad was built in here, and yet we did not grumble. And again he said he did not think it was fair to have to pay \$250 for a binder, when he could get as good a one for \$100. Now any right-thinking man would not mind paying a revenue to help to build railroads through every settlement in the country, which the C. P. R. is doing as fast as it can. The farmers are nearly through seeding in this part. Wheat is up in most places. We have a fine country here, and lots of good wood right at hand, and water that cannot be surpassed, with all kinds of soil, from a black clay loam to a black sandy soil.—C. G. C., Treherne, Manitoba.

Killing the Potato Beetle.—Will you kindly give full directions how to use Paris green on potatoes, or say if there is any other remedy to apply to kill the potato bug? I had a small patch of potatoes totally destroyed last year.—A. B., Lower Wentworth, N. S.

[Paris green is the best known remedy; but hand picking, if done early in the season, is an easier and cheaper method of destruction. A few beetles picked early in the season will prevent the breeding of thousands. We use about a dessert spoonful of Paris green to a tubful of water, and sprinkle with a watering can.]

Clover for Seed.—Will you please let me know through your valuable paper how long clover should be pastured that is going to be kept for seed, and whether pasturing or cutting first crop early is the better?—SUBSCRIBER, Petrolia.

[Red clover may be pastured till about June 10th, when it should be cut by a mowing machine, so that it will grow up regularly and evenly. It should not be eaten off so bare that it will not need mowing. With alsike clover, however, there is a risk in pasturing it much. The best plan we have seen in getting seed from it is to sow it with timothy, and when the clover is ripe, the timothy yet being in bloom, the whole may be cut and threshed, whereby you get clover seed, and the remainder makes excellent food for stock.]

Castrating Vicious Stallions.—Have a horse four years old, a stallion, and find him a nuisance this season of the year. He is also bad to his mate, and when left alone in harness. At other seasons he is very quiet, no trouble, and is inclined to be lazy. Do you think if he was castrated he would be still slower? How long would he have to be idle? Although not a picture himself, the stock he gets are perfect beauties. He is bred from heavy draft on both sides.—C. D. L., Dakota, Lenox, Man.

[Castrating your stallion would tone him down somewhat and make him less mischievous. He would likely be steadier in the harness, and less fiery. You should let him rest about a week in an open field after the operation is performed.]

Raising a Show Calf.—1. We have a steer calf three weeks old. Would you please let us know how to feed it? We are raising it for a prize fair, which is to come off three years from next fall. Would it be better to put meal in its milk, and what kind? Would it be better cooked or uncooked? Should it be put out on grass this summer or not? Should it be kept in a warm place in winter? 2. We have lost several calves with the black leg. What would be good for it?—J. A. S., Kempville.

[1. Let the calf suck the dam, or give it new milk three times daily, and keep it in a small pasture during the day, putting it in a roomy box stall at night. After it is three or four weeks old, put some oatmeal, mixed with a small quantity of bran and shorts, into a trough where the calf can have free access to it, but never feed it with milk or any other liquid, and it should not be given immediately before or after drinking. A small quantity of corn and pea meal will come useful for a change, and after the calf is two or three months old, a small quantity of oil cake may also be given. The food is better uncooked, and if the calf does not masticate it well mix the meal with coarse food, such as cut hay, and, in winter, roots. Always watch the calf's bowels to see that they are in good working order, and regulate the food so as to avoid the use of medicines. Keep it in a moderately warm place in winter, but let it out an hour or two every mild day for exercise. Give it plenty of grass in summer, and if you give it meal regularly, it will not likely gorge itself. 2. Black leg (also called anthrax, charbon, splenic apoplexy, etc.) is mainly caused by turning poorly fed animals suddenly on luxuriant pasture, and is contagious by inoculation. Remove the cause, as there is no certain cure when it assumes the fixed form.]

The Household.

Home Wrinkles.

Sweet apples together with plums make a very delicious preserve.

The water in which corned beef is cooked will make an excellent soup when vegetables have been added.

Bits of ham which are left from the table are very palatable when cut in small pieces and fried with eggs.

If you wish your plants to be healthy and vigorous, put a little ammonia into the water which you give them.

Brooms dipped for a minute or two in boiling suds once a week will last much longer than they otherwise would.

A neat, clean, fresh-aired, sweet and well-managed house exercises a moral as well as a physical influence over its inmates.

One can have the hands in soap suds without injury to the skin if the hands are dipped in vinegar or lemon juice immediately after.

Milk contains all that is required by the body, and the best proportions of mineral matters; is less irritating than other foods and better digested.

To make old lace appear new and have it clean at the same time, give it a bath of strong tea steeped in alcohol. Don't heat the alcohol, but let the tea stand in it for a day or so.

Mould can be prevented from forming on fruit jellies by pouring a little paraffine over the top, and that, when cool, will harden to a solid cake, which can be easily removed when desired.

Sunflowers are used in Wyoming Territory for fuel. The stalks when dry are as hard as maple wood and make a hot fire, and the seed heads with the seeds in are said to burn better than the best hard coal. An acre of sunflowers will furnish fuel for one stove a year.—[Scientific Am.]

Bathing.

Remarks on bathing are now in order. A southern physician said that the practice of going into the water after meals was very dangerous, and cases of death had resulted from the practice. The best time to bathe is in the morning before breakfast, at 12 o'clock and at night before going to bed, but never, under any circumstances, just after a meal; three or four hours after meals was requisite. The water should never be disagreeably warm or cold. The habit of bathing in water too cold, or rather so cold as to chill one, was pernicious. It drove the blood to the interior organs and was apt to cause congestion of the kidneys, lungs or brain.

At the seashore or in fresh water, twenty minutes was quite long enough to remain in the water. To remain in longer was hurtful. Early in the morning or the last of the evening was the best time to go in the water. In the city, in houses innocent of bath-rooms, the sponge bath was the best, and should be taken daily at least once, say, in the morning at rising and in very hot weather at 12, accompanied by a change of underclothing.

Personal cleanliness in the Summer, accompanied by regularity of habit, was a great safeguard against disease, and the habit of bathing

should be taught children, and the practice enforced so as to favor the habit when grown, and that they might maintain it through life.

Increased bathing facilities for the poor at a price within the means of the masses of the people were greatly needed; and there was a wide field for public spirit and philanthropic enterprise open in that direction.

Sea bathing, to be efficacious, must be intelligently indulged in. In some cases too frequent bathing was exhausting, while in other cases benefit would be derived from occasional bathing by the same person under the advice of a physician. The practice of boys going in the heat of the day and staying for hours was hurtful and dangerous.

Filial Confidence.

Through babyhood and childhood, to the tender and careful mother, the soul of her child is as an open book. She notes every new word added to his vocabulary, every new phrase of his character as it develops, every growing tendency to virtue or vice, every opening sign of expansion in intellect, as she notes his increase in stature, the variations in his health and the peculiarities of his taste. Should he be parted from her for a while, how carefully does she "go over" him when they are together again, and find out how and in what he has changed; how delicately does she probe his consciousness to see if he is everywhere sound; how earnestly does she examine the growing harvest of his soul to see if any enemy has been sowing tares therein! And when she is assured that there are no concealments from her maternal eyes, no hidden, tangled spots where the light of her love is forbidden to shine in, no bruise or wound she may not be permitted to care for, she is satisfied and at rest. Why should not this disposition last through life? The mother is always the mother, and if she can hold this sacred relation through all the changing phases of her own and her children's lives, what a guarantee that both she and they are sound and pure!

Lord Bacon says: "A man were better relate himself to a statue or picture, than to suffer his thoughts to pass in smother." But far better than this, when a man can in the mind and heart of a friend find the mirror of his own mind and heart, and see himself reflected therein as is his image in his friend's eyes when he looks in them, he is fortified within and without against innumerable deceptions, dangers and enmities. He has the two "fruits" of friendship, as Lord Bacon terms them, of seeing himself somewhat as he is, and of having his own judgment of himself and his affairs corrected by the judgment of his friend. The two points of view give him two sides and an angle which he may measure, and so determine his approximate relative position. If this is desirable for an adult, how necessary is it for those who have not attained mature years, for those just on the threshold of manhood and womanhood and facing the problems given for solution. When they are deciding upon plans of life, upon ways of accomplishing cherished hopes, and of realizing ardent aspirations, they need, not a whit less than in childhood, the wise counsel of the parent, the ready sympathy, the unflinching affection, the impartial judgment. The young mother needs to remember this, and to make such division and

improvement of her time and care as will enable her to anticipate the needs of her children when they approach maturity no less than when they nestle in her arms in babyhood. She may allow her capacities to become so narrowed and dwarfed by exclusive devotion to mere nursery duties that when her babies have outgrown the cradle she must still continue to rock them.

The son who finds in his parents his wisest counsellor, his truest friend, and who loves to bring to them whatever of good or of evil he finds in life, and discuss with them all his experiences and hopes and plans, is not likely to err from straight paths. The daughter who finds in her parents her most trusted and sympathizing confidantes is insured against ten thousand perils that lie in wait for unguided and misguided feet. Whatever will preserve to parents and children the broadest area of mutual sympathy and interest should be sedulously cultivated. Parents need continually to remind themselves how it was with them when they were young, and to treat their children not always as they were themselves treated, but as they might have been treated had the ripest wisdom and the soundest judgment in their parents been tempered with genuine sympathy for youthful enthusiasm. Where this is done it seldom or never happens that strangers know more about the hopes and fears and actions of a child than his own parents do, but first of all to those from whom he derived his being does he hasten to open his mind and confide what is in his heart.

When a child arrives at years of discretion, which is often long before he attains majority, the tone of parental authority may with great propriety be laid aside and the youth be taken into the counsels of the parents, and henceforth be guided rather by suggestion than command, and encouraged to exercise his own discretion, subject of course to parental revision. His own needs will compel consultation with those of wider experience than he has, and will compel him to come to the nearest congenial and sympathetic heart. Happy the child that finds this heart in his father or his mother! Happy the parent whom the child makes his perfect confidante!

Light Rolls with Compressed Yeast.

In response to an inquiry from "A House-keeper" for a recipe for light rolls, made with Fleischman's compressed yeast, we submit the following:

For one cake of yeast use three pints of flour, one pint of milk, a lump of butter the size of an egg, one half teaspoonful of salt, one tablespoonful of sugar, and one egg well beaten. Make a sponge first, as for bread, by putting the yeast to soak in lukewarm water. Put the milk and butter together, let them come just to a boil and get cool; take part of the flour, and with this make a stiff batter. Put in the other ingredients and yeast, and set in a warm place to raise. When light, use the rest of the flour to stiffen. Make the dough as soft as it is possible to handle. Grease the hands slightly to mold it, instead of using flour. Cut out and lay them very close together. When light, bake twenty minutes in a rather hot oven. Set at one o'clock to be ready for tea at six.

PRETTY PIN-CUSHIONS are made of satin in the shape of a fan, with the decorations and sticks done in outline embroidery.

Family Circle.

ACROSS THE RIVER.

She was buying lilies when Ralph Alverton first saw her. It was under a dust-begrimed old palace wall at the corner of one of the streets in Florence. Ralph Alverton was out early in search of a breath of fresh morning air before the glare of the June day began. A few Florentine women in lace veils, holding fans between their faces and the sun's rays, had passed and re-passed him on their way to church or market; but it was an English face which arrested his attention.

"*Vuole, Signorina, vuole?*" clamoured all the flower-vendors together, while each thrust their handful of dewy roses or "Virgin lilies" towards the fair face of a girl with hair of the same golden-red colour as Carlo Dolce painted for his "Angel of the Annunciation." Ralph Alverton, the artist, could not help thinking of that picture as he watched her, lilies in hand, turn away from the long stone ledge of the Palazzo Strozzi, which serves as flower-stall in the Via Tornabuoni. The tall slight figure, in her quaint costume of sage-green, went over one of the bridges to the other side of the Arno. And Ralph went home to his studio on this side the river.

He had taken a fancy to the angel painted by Carlo Dolce, and a few days later found him seated with canvas and easel before it in the gallery of the Pitti. Some copyist had already been at work there; another easel, with a half-finished sketch, stood by the picture, and there was a high stool left vacant. It was not long before it was taken possession of by its owner—the girl with the hair and face like the angel of the picture, the resemblance showing stronger with the removal of her hat. Side by side worked the two English artists all the morning with no exchange of word.

The next day he came with the fixed purpose of winning a word from her grave lips. An opportunity was easily found in some appeal about their common work; it was followed by a mutual contemplation of each other's painting. Ralph considered his own immeasurably the superior of the two, but he did not say so, and talked because he liked his listener. But the conversation was brief; the artists were discreet; and silence resulted.

"Ah, Lillas, so we have found you at last!" cried a grand-looking matronly lady, who, with double eye-glasses and Baedeker's guide-book, entered the *Salle* shortly before the hour for closing. She was followed by a party of her own people, who all came up and shook hands with the girl-artist. "Why, Mr. Alverton, are you here?" exclaimed a chorus of surprised voices, and then there was a petition of greetings. "Really, in travelling, one comes across friends in the most surprising way!" said the leader of the party, whom they called "Mrs. Calvon." "I thought you were still living in London. Do you know my friend Miss Vane? No! Lillas, may I introduce Mr. Alverton to you? What a strange coincidence that I should find my two friends at work on the same picture, yet unknown to one another!"

Then the whole group of English visitors suddenly grew deeply interested in the "Angel of the Annunciation," and in one another. Mrs. Calvon put up her glasses and gave her criticisms with all the freedom of an amateur who knows nothing about art. "Will you come and see us this evening at the Hotel de l'Europe, Mr. Alverton?" she asked, as they left the gallery.

Ralph accepted and came. In Mrs. Calvon's *salon* he learnt a little about Lillas Vane. Her family, who were very poor, had consented to her wish to come to Florence to paint. She lived at a *pension*—the Casa Chiara—which happened exactly to face the studio occupied by Ralph on the opposite side of the Arno. While they were talking of her, Lillas herself arrived with some other people, who had been invited.

Ralph Alverton made up his mind that evening that he liked her very much. Lillas did not make up her mind so quickly. She was quiet and silent, with a grave sweet look which somehow connected itself with the Angel and the Lily. But when it was time to go home Ralph offered to escort the ladies back to the Casa Chiara. This was the first, but by no means the last, time that he walked with Lillas along the river-side where the lights shone, and across the bridge of the Carraja to her home on the other side.

They often met in the rooms of mutual friends, where the evening would be spent, and when—whatever else happened, or did not happen—the end was the same always: Ralph Alverton took care of Lillas across the river, and left her safely at the Casa Chiara.

One day, by special arrangement, the Calvons and Lillas paid a visit to Ralph's studio on the Lung' Arno. Some of the party lavished a good deal of ecstatic admiration on his paintings, which he received for what they were worth; but the few words uttered in Lillas' low steady tone, and the flush of animation and interest on her otherwise calm face, were things he treasured. His studio was filled with original designs. As a rule he looked down on copyists, but he had continued the copy of the "Angel of the Annunciation," making his work last just so long as the time Lillas took to finish hers.

"Meet us at the Certosa to-morrow," said Mrs. Calvon to Ralph; "Lillas has promised to accompany us on a round of farewell visits we wish to make. To all the principal sights before leaving Florence. For leave we must this week if Eustace does not appear. We have waited long enough for him; the heat is becoming really insupportable." "Eustace" was a

son Mrs. Calvon had been expecting to join them, but whose business appointment in England had hitherto delayed him.

Ralph Alverton felt sorry that the Calvons were leaving, partly for their own sake—they were pleasant friends—but still more because it would mean a cessation of those constant meetings with Lillas.

In the middle of the cloister garden of the Convent of the Certosa there stands an old well. "At what are you looking?" asked Ralph, leaving the rest to follow the monk who acted as showman, and coming across to where Lillas, stooping over the well's side, was gazing down earnestly into its dark depths.

"I was trying to think of a wish," she said, looking up with a smile. "These old wells always give me a childish fancy to wish; they make one think of the wishing-wells in which one used, as a child, to believe."

"I know what I wish," said Ralph, with a fervour which was quite earnest. There was nothing in the words; whether it was the tone, whether it was something she read in his eyes as they stayed fixed on hers, or whether it was some electric message in the air, Lillas could not have told; but there, by the convent well, she guessed for the first time that Ralph loved her.

Together they leaned over the old stone sides, and looked down the deep round abyss to where far, far below, the water reflected their faces against a background of blue sky, across which at that moment a fleecy cloud was sailing. Ralph's wish was that the day might come when Florence's river should divide them no longer. Lillas wished that the morrow might bring Eustace Calvon to Florence. So, silently, the two contrary wishes were sent down the old well—Ralph guessing nothing of how the other wish clashed with his own; Lillas just conscious that it was possible both should not agree.

Then they re-crossed the sunny garden to join the carriages waiting in the shade at the entrance gates, and they all drove back to Florence. And the solemn silence-bound monks, unmindful of the world's love-stories, come out at sunset to draw water at the old well, which to them was nothing but a source of common usefulness.

A few days afterwards, in the early morning, the artists were left standing on the station platform, from whence a pile of luggage from the Hotel de l'Europe had just been cleared, waving adieu to the express train going north. Both were sorry for the departure of their mutual friends; both also had a special cause in their regret. Lillas would have liked to have met Eustace Calvon again; she would have described him as "an old friend—nothing more;" and so when he did not come she was not broken-hearted, but bore the disappointment very philosophically. Had they met that summer, the old friendship might have ripened into something stronger, but business claims detained young Calvon in England for three days longer than the patience of his relations could endure, and when he was free it was in the Engadine—not in Florence—that he joined them.

Mr. Alverton soon made the discovery that the old ladies—the chief occupants of the *pension* where Lillas was living—were most charming and delightful people. And so it happened that at last his evening visits became a scarcely less regular custom than the appearance of the eight o'clock tray with its two large tea-pots of watery tea. It was never a dingy, never a poky place, that *salon*, to Ralph, for the girl with the golden-glow hair of the angel was there, and her presence made it seem to him an earthly paradise. And somehow, even though the surroundings were a crowd of old maids in smart evening caps, bad tea, and a cracked old piano, Lillas learnt better every evening what the wish was that Ralph had at heart; and her own wish faded out of memory. Eustace was far away, and had never been more than "an old friend;" Ralph Alverton was close, and made her understand that he would not be content until he reached a higher standing than mere friendship.

Lillas surrendered. They settled it in so many words one day at the far end of the Casine (the Hyde Park of Florence), where Lillas had been left to wait for a friend. The friend was late in keeping her appointment, and Mr. Alverton happened to arrive instead. There, on a stone seat just beyond the monument of the Indian prince, Lillas promised everything required of her, while some light fluffy seeds from a tree overhead fell, scattering at their feet, and eddied lightly around—north, south, east, west—like emblems of uncertainty; but words were said which sealed two fates, and close beside them flowed the yellow Arno which soon should separate them no longer.

Happy days were those which followed: happier day was that to which they looked forward in the following June. But before that day which was to give them to one another, came Eustace Calvon to Florence. And with him came discord between the lovers. How it began, why it continued, who was most to be blamed, none but themselves could ever guess; but Eustace Calvon was somehow (unintentionally) the centre-chord which caused the jar. Ralph grew jealous, suspicious; showed heat and hastiness. Lillas was proud, resentful, and turned cold as ice. The whole Calvon party had returned to Florence, and Ralph chose to disapprove of them all. He complained that Lillas let herself be monopolised by them, that Eustace talked too much to her; that he would not endure it; he would not stand it. Lillas, conscious that no cause for wrath existed, and finding Eustace simply friendly and civil, resented such injustice, and affirmed impatiently that "no one should make her cast off old friends." (Circumstances and misunderstandings helped to widen the breach, until the climax was reached one day in high words on the Ponte di Car-

raja, where without farewell they parted—she across the bridge to one side, he across the bridge to the other side. Divided! yes, they had chosen division.

A great crowd blocks the bridgeway and lines on either side, the river's embankments—a black silent crowd, which all the day long hangs over the parapets, watching the water below.

"A boat upset—two men drowned—the bodies are being searched for." So passes the news through Florence. Lillas learns it on her way homewards at midday. There—passing along the Lung' Arno—she learns too the added rumour, "One is an English artist."

"Let me take you home," says Eustace Calvon, finding her with blanched lips adrift in the crowd. He leads her further up the river-side and guides her faltering steps across one of the higher bridges, which is deserted. Neither speak their fear in words, but before many hours have passed all Florence proclaims it for them: "Mr. Ralph Alverton" is the name of the missing Englishman. Eustace hastens to his rooms only to find the report confirmed: "Mr. Alverton went out with a friend in an open boat; it was thought they intended to sketch on the country banks."

All day the search is made; all the day from early morning to late night the blackness of onlookers is there. Night comes, and still they hang over the bridge's parapet—a motionless saddened mass, spell-bound to the spot.

But the pleasure and the business continue: strangers come and go from palace to church to see the sights; carriages drive out to the Casine to listen to the band; pleasant, impromptu parties make up their evening round of the *cafes*, and afterwards walk back to their hotels or apartments by the side of the river, beneath whose moonlit waters the dead lie.

Lillas stands on her balcony alone in the moonlight. Two days have passed; the second day's search has been as fruitless as the first: the crowds have dispersed—the people have gone away soberly to their homes. She looks out upon the cold, silver-radiant water flowing ever onwards; the line of bright lights fling their reflection across the river as on other nights, but one window from the other side is darkened—there shines no good-night signal there.

Across the bridge come hurrying, with swift noiseless steps, a weird procession of those whose office it is to carry the dead—the secret confraternity of the *Misericordia*—disguised figures robed in black from head to foot, only the eyes visible. Two and two they go, carrying lighted torches before and after the corpse. Some among them, it may be noble or citizen—have just been called away from the dance or the feast to serve as they have bound themselves to serve at all times of necessity. Another minute they have hastened away on their midnight mission; the flare of their torches is seen no more.

Lillas, standing mute, immovable in the moonlight, remembers how on that bridge two days before she has parted with him she loves; recalls the proud, hard words which have been their last, and tries—very hard she tries—to realise that between them now runs the River of Death, and that before she can whisper the word "Forgive!" she must wait until she too shall reach "the other side."

"O Ralph, if you were here but for one short moment, I think I could make you understand!" Then, as in answer to her half-uttered cry, some one who, unnoticed, has with rapid uncertain steps passed twice or thrice below the balcony, pauses and looks up, and calls her by her name.

Down in the front vestibule, still left open to the street, with none near but the old half-sleeping concierge, she learns the glad news that all Florence has been under a mistake; that Ralph has come home from his prolonged stay in the *campagna*; that the River of Death has been but the dream of two sad days; and that Ralph "understands" already, and has come to make her understand. No river need longer divide them.

"Will you come to me there on the other side?" Ralph asks once again.

And Lillas answers, "I will come."

A HINT TO YOUNG HUSBANDS.—Love and appreciation are to a woman what dew and sunshine are to a flower. They refresh and brighten her whole life. They make her strong-hearted and keen-sighted in everything affecting the welfare of her home. They enable her to cheer her husband when the cares of life press heavily upon him, and to be a very providence to her children. To know that her husband loves her, and is proud of her, and believes in her; that even her faults are looked upon with tenderness; that her face, to one, at least, is the fairest face in all the world; that the heart which to her is the greatest and noblest holds her sacred in its inmost recesses above all women, gives her a strength, and courage, and sweetness, and vivacity which all the wealth of the world could not bestow. Let a woman's life be pervaded with such an influence, and her heart and mind will never grow old, but will blossom and sweeten, and brighten in perpetual youth.

Minnie May's Department.

MY DEAR NIECES.—Since chilly spring has at last relented, all nature seems to invite us to the enjoyment of her marvellous beauty; in fact the "Sunday weather" of all the year is just upon us, and to turn away from her, arrayed as she now is, displaying to us her countless charms, would indeed be a cruel slight.

Everybody ought to have a change—recreation—whether dwelling in country or town; not simply because a change is pleasanter, but because it is indispensable to the maintenance of thorough mental and physical health. Ocean and forest, hillside and bank of stream, whispering trees and emerald turf, glistening waterfall and fragrant flowers, the harmonies of sunlight and foliage, clouds and mountain peaks—all and each have their special sanitary influence upon weary minds and exhausted bodies. These at least are full of truth and frankness and free from frivolity. It is because of these subtle, sweet and purifying influences that all who toil should be given an opportunity to renew their acquaintance with nature during the summer.

The vacation need not be elaborate or costly; it may be repeated often or even taken in daily instalments. It is within the reach of all but the poorest, and should never be neglected, for therein lies the possibility of renewed strength for the rest of the year; and not merely strength of body, but "that mental bracing which means higher purpose, keener self-criticism, mellow tone and broader charity."

But many will say, surely the farmer and his family, surrounded as they are by nature, do not need a change. Yes they do; it is needful that they also should, once in a while, lay aside the continuous round of duty and be like children brought up in the city, who fly by pure instinct to the broad bosom of nature outspread before them—awakening dormant faculties and producing good far beyond conception, making life purer and sweeter for the experience.

Although the agricultural laborer is not deprived at his work of the song of bird and insect and the music of the trees, as is many a less fortunate brother while toiling indoors, yet the busy house-mother is often shut away from the sights and sounds of nature, having to deny herself the benefits of the open air, bright sunshine, and immediate presence of birds, trees and flowers; surely she, at least, needs an occasional recreation from her monotonous life; then would the petty indoor annoyances have less power to disturb her.

MINNIE MAY.

Work Basket.

WASH-STAND SCREEN.—The screen is made over a hoop, the diameter of which should correspond to the width of the wash stand. Cover the hoop as smoothly and tightly as possible with some bright-colored cambric or Silesia, and make an outside covering of plain or cotton Swiss, half the width of the hoop, and long enough to full on slightly. Gather the opposite edge, and after fastening it firmly on the outside of the hoop, draw it down to the center and finish it with a large bow of ribbon

of the same color as the lining. The edge should be finished with a Swiss ruffle, about three inches wide, worked in "herring-bone" stitch, with worsted. Make a loop on the back by which to hang it up, and suspend it so that only three quarters of the screen can be seen.

CROCHETED TIDY.—Macreme cord or seine twine fine.

Make a chain of 41 stitches, turn, make single crochet in every stitch, turn, 4 chain, *make 2 trebles, 1 chain, 3 trebles in the first stitch, this forms a shell, miss 5 stitches, in 6th stitch make shell of 3 trebles, 1 chain, 3 trebles, 7 chain, miss 10 stitches, make another shell, miss 5 stitches, make another shell, 7 chain, miss 10 stitches, make shell, miss 5 stitches, make last shell turn.

Second row—In centre of each shell make a shell of 3 trebles, 1 chain, 3 trebles, after 2nd and 4th shells make 9 chain instead of 7.

Third row—Make like first row, except after 2d and 4th shells make 3 chain, then join the 3 rows by putting hook through the 4th and 5th chain of preceding rows and drawing twice through, making 1 single crochet as you draw it through, then 3 chain*. This forms a figure which looks like the letter X, with a line drawn perpendicularly through the centre of it.

Fourth row—Like first row.

Fifth, sixth, seventh rows—Repeat from *to*, except when you turn make 3 trebles instead of 2, as you did in first row.

Repeat until your tidy is long enough, ending with a row like first row. Tie in fringe.

PENWIPERS.—Sunflower pen-wipers are very stylish now, and they are easily made out of lemon-colored opera flannel, a little brown zephyr worsted and brown or black flannel or broadcloth leaves for the pen-wiper. Cut the yellow flannel into twenty-four small pointed leaves and button-hole each one around with yellow floss or silk. Sew the leaves in a circle upon a piece of brown or black flannel, making a double row of them, and crochet in double stitch a circle to cover the edges of the leaves sewed on. Attach to the under part of the sunflower four or five circles of black flannel cut in small points on the edges. Black silk can be substituted for the flannel. These pen-wipers make pretty presents for men and boys. Very funny pen-wipers can also be made out of a large walnut. On the pointed end draw a face with India ink—or common ink will answer—letting the point make the nose. Over the top of the nut, fold a bit of muslin three or four inches square, and put the point back of the head, making the bias come over the face and laying it in a tiny fold like an old lady's cap, then sew it tightly so as to hold the walnut securely. Make a little skirt of black silk or flannel and fasten it on to the muslin, and take another square of muslin a little larger and arrange it as a shawl and set it down in front. This makes a very curious looking old woman and a useful pen-wiper for a gentleman.

GILT CRESCENTS.—The small gilt crescents which are purchased by the dozen at fancy shops, are much used for decorating the ends of table scarfs, lambrequins, piano scarfs and portieres. They are sewn along the edges at a space of three or four inches according to size, and in the centre thick strands of filosele, or chenille, are looped through and hang as a fringe of three, four, five, six inches in depth. They are also

arranged in rows at the top of lambrequins, as well as at the edges, and are sewed on so as to make ornamental bows across the top, and are sewed overlapping each other through the centre of portieres or door curtains so as to produce a glittering oriental effect, which is quite pleasing to the eye. When thus arranged tassels are only added to the last row of these gilded crescents.

MANTLE LAMBREQUIN.—May be tastefully arranged by taking a strip of plush or velvet the length and depth devised, which is put on straight with gilt tacks or invisible nails, and at or near the corners looped gracefully with bows of ribbon to correspond in color with the lambrequin.

A very pretty decoration can be made by scooping out the inside of a sweet potato, leaving a wall of moderate thickness, suspend it by cords passed through holes in the sides, and fill with water; in a short time sprays will sprout forth and completely cover with dainty green tendrils this rather homely vegetable basket.

Answers to Enquirers.

M. I. K.—Chamois skins are not all derived from the chamois, as you suppose, but are the flesh side of sheep, goat and deer skins. The skins are soaked in lime-water, and in a solution of sulphuric acid; fish oil is poured over them, and they are then carefully washed in a solution of potash.

SWEET BRIAR.—1. The tendency to reddish flushes, cold hands and nervous trembling, of which you complain, would seem to indicate that you need a physician's care, and we would advise you to consult one without delay. 2. Small tables, and several of them, are more popular for the drawing-room than the large ones of old; both square and long covers or scarfs are used, allowing of great taste and originality. 3. The trousseau is marked with the bride's maiden name.

VICTIM.—We recommend "Carboline" as an excellent preventive for the hair falling, to be had of any druggist and used according to directions accompanying each bottle. Another good remedy is as follows:—One pint of best bay rum, half an ounce of glycerine, one tablespoonful of fine salt, one ounce of tincture of cantharides. Use this mixture, about a tablespoonful at a time, every second day for a few weeks, and then twice a week until cured. Rub well into the scalp with a small sponge or soft linen cloth. Both these remedies are good, as we know from experience, if used faithfully.

MYRTLE.—1. The machine grease can be removed from your white apron by applying kerosene oil. 2. We advise you to leave the gray hairs alone; they are not a misfortune, or at least, do not allow yourself to think so; we cannot help such things, and must submit gracefully.

MISCHIEF.—You should answer the invitation, especially if it is a regret, as soon as possible after receiving it. Address the envelope to the lady giving the party. You should then call within a week or two.

Our thanks are due to A. Blanc, Philadelphia, for the beautiful illustrations and descriptions of the Cacti in this month's issue. He has a very large collection of rare and beautiful Cacti, as well as many other varieties of plants and flowers.

Recipes.

DANISH PUDDING OR FRUIT TAPIOCA.—Half cup of pearl tapioca, 1½ pints boiling water, 1 saltspoon of salt, ½ cup of sugar, ½ a tumbler of currant jelly. Pick over and wash the tapioca. Put it in the double boiler with the boiling water and cook one hour, or till soft and transparent, stirring often. Add the salt, sugar and jelly. Stir till the latter is all dissolved. Pour into a glass dish and keep on ice. Serve very cold with sugar and cream. Half a cup of lemon juice or any acid fruit syrup, or one cup of apricot, peach or quince, may be used instead of the jelly. Or in summer use one pint of ripe berries or any small fruits, adding more sugar as required.

SPICE CAKES.—One and a half cups of brown sugar, 2 eggs, ½ cup butter, two tablespoonfuls sweet milk, 1 cup of currants, 1 teaspoon of soda, cloves, cinnamon and nutmeg.

COMMON SALT.—Half a teaspoonful of common table salt dissolved in a little cold water and drank, will instantly relieve heart-burn or dyspepsia. If taken every morning before breakfast, increasing the quantity gradually to a teaspoonful of salt and a tumbler of water, it will, in a few days, cure any ordinary case of dyspepsia, if, at the same time due attention is paid to the diet. There is no better remedy than the above for constipation. As a gargle for sore throat it is equal to chlorate of potash, and is entirely safe. It may be used as often as desired, and if a little is swallowed each time, it will have a beneficial effect on the throat by cleansing it and by allaying the irritation. In doses of one to four teaspoonfuls in half a pint to a pint of tepid water it acts promptly as an emetic, and in cases of poisoning is always at hand. It is an excellent remedy for bites and stings of insects.—[Cottage Hearth.

BAKED BANANAS.—Take ripe, firm bananas, with the skins on, and put them in a hot oven for fifteen minutes; serve hot. They will be found a very delightful vegetable, and far more digestible than when eaten raw.

ASPARAGUS SALAD.—Take some properly boiled asparagus left from dinner, lay it on a platter, and pour the following over the top: Melt an ounce of butter; mix with it one teaspoonful of made mustard, a little pepper and salt and one teaspoonful of vinegar, or use French dressing.

RICE PUDDING is easily made. Cook the rice first, then pour over new milk, add a pinch of salt, and two tablespoonfuls of sugar to a quart of milk,—no more, the trouble is they are generally made sickish sweet,—and a large handful of good fat raisins, and some little lumps of butter. Bake until cooked through and inclining to be dry. Flavor with nutmeg, vanilla or cocoonut.

FUNNEL CAKE.—One and one-half pint of sweet milk, two eggs, a little salt, one teaspoonful of soda, flour enough to make a thin batter, and pour this from a pitcher in boiling lard; pour in round circles, and a few times across to hold the rings together, and when brown lay on a plate and sprinkle with sugar, and lay a pan over to let them steam.

NICE MUFFINS.—Muffins, raised with yeast, are relished by those with whose digestion baking-powder and soda do not agree. To make enough for a family of four or five, tak

one pint of milk, three eggs, half a cup of butter, one teaspoonful of sugar, and one-third of a small yeast cake, dissolved in water and strained through a muslin cloth. This will need one quart of sifted flour to make it the proper consistency. In three hours from the time they were mixed the muffins will be light enough to bake.

Dan's Wife.

Up in early morning light,
Sweeping, dusting, "setting right,"
Oiling all the household springs,
Sewing buttons, tying strings,
Telling Bridget what to do,
Mending rips in Johnny's shoe,
Running up and down the stairs,
Tying baby in his chair,
Cutting meat and spreading bread,
Dishing out so much-per head,
Eating as she can by chance,
Giving husband kindly glance,
Tolling, working, busy life,
Smart woman,
Dan's wife.

Dan comes home at fall of night,
Home so cheerful, neat and bright,
Children meet him at the door,
Pull him in and look him o'er.
Wife asks "how the work has gone?"
"Busy times with us at home!"
Supper done—Dan reads at ease,
Nothing must the husband tease.
Children must be put to bed—
All the little prayers are said:
Little shoes are placed in rows,
Bed clothes tucked o'er little toes,
Busy, noisy, wearing life,
Tired woman,
Dan's wife.

Dan reads on, and falls asleep,
See the woman softly creep;
Day rests at last, poor dear,
Not a word her heart to cheer;
Mending basket full to top—
Stockings, shirts and little frock—
"Tired eyes and weary brain,
Side with darting, ugly pain—"
"Never mind, 'twill pass away!"
She must work, but never play;
Closed piano, unused books,
Done, she walks to cozy nooks,
Brightness faded out of life,
Saddened woman,
Dan's wife.

Up stairs, tossing to and fro,
Fever holds the woman low;
Children wander, free to play
When and where they will to-day;
Bridget loiters—dinner's cold,
Dan looks anxious, cross and old;
Household screws are out of place,
Lacking one dear, patient face;
Steady hands—so weak, but true—
Hands that knew just what to do,
Never knowing rest or play,
Folded now—and laid away;
Work of six in one short life,
Shattered woman,
Dan's wife,
—Kate Tannatt Woods.

"Bill Simpson's Darter."

No matter how hard and ugly the truth is, it is more pleasing than the affection of what is not real. Exposure is certain to follow people who try to go through life behind a mask of false pretences. We have little sympathy for people like "Bill Simpson's darter." A gentleman travelling from Buffalo to New York City tells the story:

At Albany two ladies, dressed in the extreme of fashion, entered the car. Their manners indicated great affectation and consequent shallowness.

The only unoccupied seat in the car was directly behind a quiet-looking lady, evidently from the country. Her dress was of calico, her bonnet of plain straw, and her gloves were of cotton. She could not, however, have looked neater, and she had a good, honest face.

As the fashionable ladies adjusted their draperies in the unoccupied seat, one of them said to the other,—"Don't you think it too bad that there are such poor accommodations in railroad-trains now?"

"How—in what way?" asked her companion.

"Why, here we are crowded up in all classes of people, some of them so common. Look at that person in front of us."

"Horrid, isn't she?"

"Perfectly dreadful."

"Looks like a common laborer."

"How annoying to have to come in contact with such people!"

"Belongs to some ordinary family. If one could only exclude one's self from such persons when travelling even short distances! I suppose it's horrid in me to say it, but I have all my life had such a repugnance to common laboring people."

The lady in the calico dress must have heard a part of this conversation, but her face was perfectly composed.

At that moment an elderly man in the home-spun and home-made garments of a farmer came down the aisle. He stopped before the ladies of fashion, closely scrutinized the features of the one having "such a repugnance to common people," and, just as the train stopped at the station, cried out loud enough to be heard by every person in the car,—

"Lookee hyar, haint you old Bill Simpson's darter? But I know you air 'thout askin'. How de do, anyhow? You don't change a speck. Got the same nose you had when you wor a little gal o' twelve or fifteen year, trottin' b'arfoot round my old farm in Podunk County.

"Yer mind how I youst ter give yer two bits a day an' yer dinner fer helpin' my younguns dig taters! Ho! ho! ho!"

The young lady had dropped her beaded veil and was nervously biting at her fan, but the old farmer went on heedlessly:

"Thee's been mighty sence then. Your pap went out to Coloraday an' made a big fortin' thar, an' I hear you live in great style. But Bill Simpson aint the man ter fergit old frens, an' you tell 'im that you've saw old Jack Billings, what youst to give him a-menny a day's work when he was so pore his fam'ly had ter wait till the hens laid 'fore they could hev any breakfast. You kin remember that yerself, I reckon.

"An' there wa'n't nobody gladder nor me when yer pap did git rich so suddint, for he was a mighty hard-workin' blacksmith, an' always pore 'cause of bad luck.

"My wife sez she lost an awful good wash woman when yer ma moved, an'—I git off here. Good-by! good-by!"

The meekest, most subdued person on that train during the rest of the trip was "Bill Simpson's darter."

A HANDKERCHIEF SACHET may be made by cutting a piece of plush the size of any ordinary handkerchief. Cut satin same size for lining. Put on a tolerably thick layer of wadding, sprinkle it thick with white rose or violet sachet powder; quilt the satin, sew it to the plush, and edge with two-inch tinted lace put on full or silk cord; turn in the four corners to meet in the centre; add a handsome bow of satin ribbon and the sachet is complete.

TO KNIT the heel of a stocking double: when the heel is set, widen two stitches; when you commence to knit, slip off the first stitch, knit the next, slip off the next, and so on all the way across. In knitting back, knit all the stitches, then repeat the former operation until the heel is finished. This makes a good heel and will last twice as long as one knit in the usual way.

The Cactus.

Cacti have much to recommend them to lovers of the curious and the beautiful; the majority of them are so easily grown that any one may be successful. In the dry and heated atmosphere of a room which is so trying to most plants, they are perfectly at home, and their demands upon the attention of their host are so slight that they may be left for weeks, nay, months, without the smallest supply of water. Though it cannot be expected that they will rise to the popularity of the rose, yet it is not surprising that they are fast becoming favorites, and the demand for them steadily increases.

Some of the *Mamillarias* variety seldom grow more than a few inches in height, while many of the *Cereus* are found in the native haunts measuring upwards of 50 feet. Many of the flowers possess a powerful and most pleasing

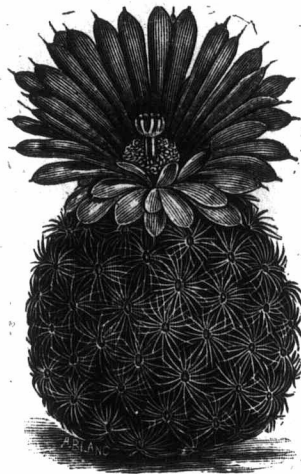


FIG. 1.

fragrance. They vary much in size as well as in color. Some of the *Cereus* will often produce flowers measuring 20 inches across.

The spines form the beauty of the plant, many of which, when held to the light, show all the colors of the rainbow. Some plants have broad, flat spines, regularly ribbed, some straight, others curved, and some are as sharp as needles, or more so. Most of the cactaceous plants are natives of North and South America, principally of Mexico. Some very fine species are found in California, Nevada, Utah, and Arizona. Over one thousand varieties are known at the present time.

As the natural conditions of the climate where these plants grow, owing to the tropical heat, are an intensely dry atmosphere and parched soil, it is not easy to reproduce these conditions artificially when cultivating the plants in our northern climate, but they are so extremely accommodating that they will apparently conform to any reasonable treatment.

Wherever these plants are made a specialty a house can be appropriated to them, and efforts made to imitate the natural conditions, but by far the largest class of cultivators are those who grow a moderate collection as curious samples of vegetable life, and cannot give them special quarters. In this case the best general plan is to give them cool, dry treatment, well exposed to the light, and safe from frost during the winter; then in the spring and summer place them in warmer quarters to start into growth; they may, if desired, be placed outside fully exposed to the sun, and provided with sufficient moisture to stimulate

growth without rendering it weak. The safest winter minimum temperature is 50° for most species.

Ordinary loam, with plenty of sand mixed in to make it thoroughly porous, is a suitable soil; finely crushed charcoal is also an improvement, rendering the soil porous, and adding brilliancy

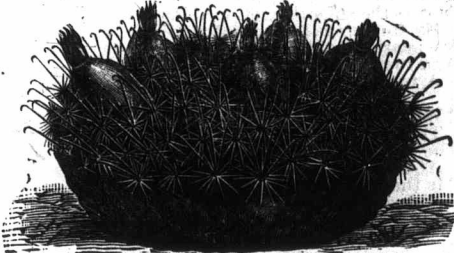


FIG. 2.

to the flowers as well as the colored spine.

The pots must be carefully drained; from one-fourth to one-half the depth of the pot should be filled with draining material, according to the size and condition of the plants, which mostly require but little soil.

Some experience is required to determine when to apply water, but the soil must never be allowed to get in a stagnant saturated condition, or the strongest plants will soon die. If the whole tissue of the plants seems plump and full, none is needed, but if there is the slightest approach to laxness, or a dullness in the color, water should be given.

When re-potting the plants in early spring, care should be taken that the soil be neither damp nor dust dry, but it is better to err in the latter than the former. When the plants are turned out of their pots, most of the soil may be shaken from the roots, and all dead, dried roots cut off close to the stem, as much injury is often occasioned by allowing these old portions to remain attached. Large specimens in tubs or pots of considerable size seldom need re-potting, top-dressing of fresh compost, with occasional supplies of weak liquid manure, being sufficient.

New plants that have but few roots must be

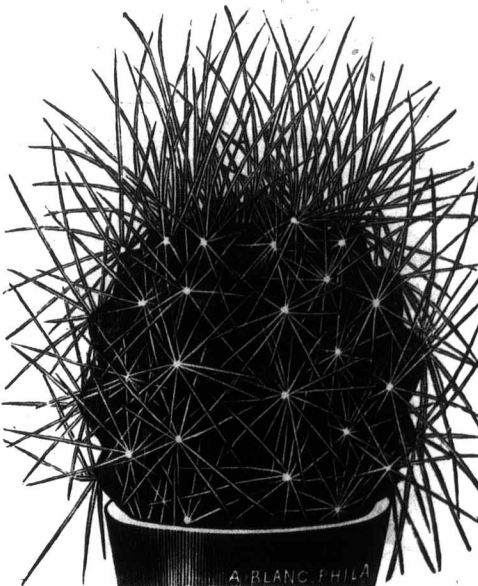


FIG. 3.

potted in clean, coarse sand, which should be kept moist. Let them remain so until well rooted, keeping them in a warm place, and not one of a hundred will fail to grow. Tall plants must be fastened to a stake. Low, flat-growing ones may be fastened down by tying a twine

over the plant and fastening under the rim of the pots, or pinning them down to the soil, with a bent wire passed over them.

Clean, white pebbles may be used to cover the earth in the pot around the plants; they prevent the soil from splashing when watering, and enhance the green color of the plants.

The majority of the Cacti may be propagated by cuttings, the young growths taken off in the spring and summer and placed in a sunny position for a few days, until the cut surface has healed, or until a few roots are seen to be forming. They can then be inserted in pots of light, sandy soil, and kept quite dry until growth commences, when slight syringing will be beneficial. Some varieties have offsets from the base of the stems, which may be removed and treated like cuttings. They can also be propagated by grafting and seeds.

Insects such as mealy bug, red spider, or

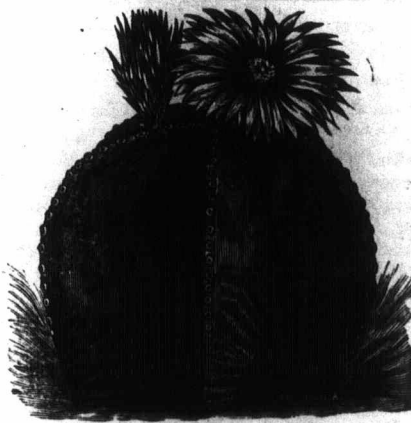


FIG. 4.

various kinds of scale, will sometimes attack these collections. The first and last can be removed, when they first appear, by a sharp pointed stick, or by syringing. When plants are badly infested with these insects, the best plan is to shake them out of their pots, removing all the soil from the roots, and give the plants a thorough washing or syringing with fir-tree oil, much diluted in hot water as per direction on each can. A tablespoonful of coal oil mixed with about a pint of milk also makes a good insecticide.

Red spider is the result of an exceedingly hot, dry atmosphere. Frequent syringing or dipping in soapy water will soon remedy this evil.

Decay at the roots or in the stem is about the only disease Cacti are subject to. Whenever this happens, cut off the diseased part at once, and rub the cut part of the plant with finely pulverized charcoal or lime, keeping the plant very dry afterwards.

Fig. 1 shows the *Mamillaria Pectinata*, which is a beautiful plant, bearing very large yellow flowers 2½ inches in diameter when fully open.

Fig. 2 is *Mamillaria Wrightii*—discovered in New Mexico. The stem is one and one half to three inches in diameter, flattened or depressed. The flowers are fully an inch long and wide; petals and margin of inner sepals are bright purple. The fruit is large and purplish.

Fig. 3 represents *Echinocactus Longhamatus* (Hedgehog Cactus.) Several varieties have been sent out under this name that were not true. The true E. L. generally grows to heads

six inches to two feet, and flowering often when not more than two inches high, usually with 13 ribs. Central spine often three to six and one-half inches long. Flowers measuring $2\frac{1}{2}$ to $3\frac{1}{2}$ inches; externally, greenish-yellow and red; internally, yellow with red base. A very free and profuse bloomer.

Fig. 4 shows the *Astrophytum Myriostigma*, or Bishop's Hood. It is very peculiar, and at a glance appears to be scarcely a living plant; so regular, rigid and unplant-like is its form, that we might almost imagine that it had been

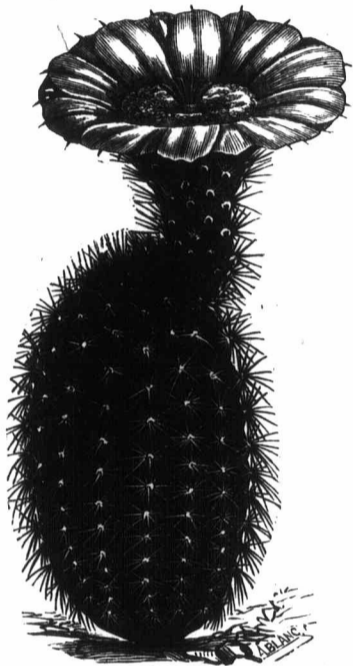


FIG. 6.

carved from a piece of stone. It seems even a greater departure from the forms of plant life than other Cactææ, for all vestiges of leaves or branches are lost, the stem is bare of even spines and tubercles, except for some curious star-like scales or hairs which appear on the young growth, but fall off as the plant advances in age, and the lower part of the stem is sometimes quite bare. The flowers are produced near the summit of the stem, generally several together, which open early in the day and close in the afternoon, expanding on each succeeding day for nearly a week. The plants will continue bearing flowers from June to September.

Fig. 5 is *Echinocereus Caespitosus*.—Next to the *Echinocereus Pectinatus* (one of the very best plants for blooming that can possibly be obtained), this species is perhaps one of the best and handsomest bloomers, doing so when scarcely one inch high. The plant is very easy to manage, providing it is kept clean of mealy bug, and will retain life for a year without roots, moisture or potting. There is quite a variety of color among them, some of the plants having white, some red and others black spines.

Fig. 6—*Ec. Dasyacanthus*. The geographical range of this species is quite limited, hence it requires a great deal of trouble to procure it. Stems five to ten inches high and two to four inches in diameter, densely covered by innumerable ashy gray or reddish spines.

Fig. 7—*Ec. Procumbens*. Spreading prostrate stems, bearing fleshy upright branches three to four inches high, which when young

are four or five angled, becoming quite round with age. Flowers three inches across and bright rosy purple; should be kept rather warm during winter and not watered.

The Schoolmarm's Story.

I locked the time-worn school-house door,
The village seat of learning,
Across the smooth, well-trodden path
My foot-steps homeward turning;
My heart a troubled question bore,
And in my mind, as oft before,
A vexing thought was burning.

"Why is it up-hill all the way?"
Thus ran my meditations;
The lessons had gone wrong that day,
And I had lost my patience,
"Is there no way to soften care,
And make it easier to bear
Life's sorrows and vexations?"

Across my pathway, through the woods,
A fallen tree was lying,
On this there sat two little girls,
And one of them was crying.
I heard her sob, "And if I could,
I'd get my lessons awful good;
But what's the use of trying?"

And the little hooded head
Sank on the other's shoulder,
The little weeper sought the arms
That opened to enfold her,
Against the young heart, kind and true,
She nestled close and neither knew
That I was a beholder.

And then I heard—ah! ne'er was known
Such judgment without malice,
Nor queenlier counsel ever heard
In senate, house or palace!
"I should have failed there, I am sure,
Don't be discouraged; try once more,
And I will help you, Alice."

"And I will help you." This is how
To soften care and grieving;
Life is made easier to bear
By helping and by giving.
Here was the answer I had sought,
And I, the teacher, being taught
The secret of true living.

If "I will help you" were the rule
How changed beyond all measure
Life would become! Each heavy load
Would be a golden treasure;
Pain and vexation be forgot,
Hope would prevail in every lot,
And life be only pleasure.

English Girls.

An unknown writer contrasting American and English girls, speaks of some of the English customs in the following language, of course referring to the higher classes, not the peasantry of England, the poor:

"An English child is bathed from head to foot every day. A bath-tub is part of the fur-



FIG. 7.

niture of every bed-room, and into this she steps the moment she is out of bed. The water is always cool, but not always cold, and brisk rubbing with a rough towel soon puts her in a glow. This practice is never discontinued, and is as indispensable a part of the daily toilet as

brushing the hair. She comes down to a substantial breakfast of bacon and eggs or meat, with very weak tea or milk to drink, and toast; never rolls, or hot bread in any form. An English mother would faint at the idea of her daughter buying a pound of caramels for her private consumption, and would certainly confiscate them on the spot if she indulged in the weakness of getting them. Stewed fruit is much used in its season; pastry is seldom given to the children.

"Some time during the day she has two or three hours' exercise in the open air, playing

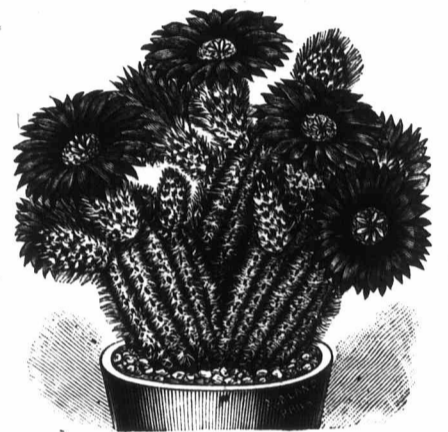


FIG. 5.

lawn tennis, riding on horseback, boating or walking, according to the season of the year; but she is made to exercise herself actively out of doors. The English climate is so uncertain that if people stayed in for fear of the rain they would seldom go out at all. She is sent to bed at eight o'clock in the winter and nine in the summer, and so gets the long, unbroken sleep that all, young, growing animals require. The window in her bedroom is always open an inch or two at the top, and from sleeping in a pure atmosphere she wakens refreshed and rested. The thermometer in an English house in winter seldom indicates more than 65 degrees, and sometimes not more than 62 degrees. The open fire-places keep up a constant supply of fresh air in the rooms, and if they begin to approach a temperature comfortable to an American, the window is instantly opened. Of course when people are accustomed to it, 62 degrees is just as agreeable as 82 degrees; but the Spartan endurance cannot be obtained in a day."

Home Remedies.

Cranberry jelly mixed with cold water makes a refreshing drink for sick persons.

REMEDY FOR STAMMERING.—Do not speak or attempt to speak when inhaling the breath; but draw as much air into the lungs as they will hold, and then speak very slow. Repeat the operation, and by patience one can often completely overcome the difficulty.

BLEEDING AT THE NOSE.—Two small arteries branching up from main arteries on each side of the neck, and passing over the outside of the jaw bone, supply the nose with blood. If the nose bleeds from the right nostril, for example, pass the finger along the edge of the right jaw till the beating of the artery is felt. Press hard upon it for five minutes, and the bleeding will cease.

Kitchen Economy.

BY A FARMER'S DAUGHTER.

Economy in the sense of a wise expenditure and the avoidance of waste, is a virtue much and deservedly praised. But like all valuable things it has its counterfeit which often passes for the pure gold, and its unhappy possessor may find that his fancied wealth was only a gilded imposture. In dealing with the subject for the present month, it may be well to remember that the kitchen is the moving-spring of the house, and to interpret it in a somewhat wider sense than the enclosure actually represented by its four walls.

Many practices, especially in farm life, have crept in or survived from the days of our fathers, which, while they seem economical, are really wasteful in the last degree. In applying the principles of a true economy to domestic affairs, our first direction to the head of the house would be, Save your wife. That this injunction is greatly needed, no one who has even a slight acquaintance with life on many farms will deny. How often is it seen that the wife is expected to do the whole work of the household single handed, or with only the most slender and intermittent help? She must be cook, laundress, house-maid, dairy-maid, seamstress, nurse, in her single person—fortunate for her if she is not also gardener and man-of-all-work. In other cases where such an extreme of folly is not reached, and a little more help is kept, is she not sometimes expected, besides looking well to the ways of her household, to earn the family expenses from the produce of her dairy? In other words she is to be her husband's housekeeper without wages, keep a boarding-house for his men, earn the money to supply it and her own and children's clothing, and personal expenses besides. I have known cases where the husband's clothing was taken out of the wife's purse, and others even more disgraceful, in which, while all that has been mentioned was expected of her, she had no purse, but was forced to become a beggar for every dollar she needed.

By what right does a farmer expect so much more from his wife than any other man? The laborer in his fields makes no such demand on his wife. Is it any wonder that farmers' wives, if they do not fill an early grave, form so large a percentage of the inmates of our lunatic asylums? It is not asserted that this state of things is the rule on the majority of our farms. I am glad to believe that it does not; but I do say that it exists in a greater or less degree far too widely. Does the money saved or earned compensate for all its cost in strength and vitality? What right has a husband to look for companionship and a home from a wife more heavily weighted than a beast of burden?

I am aware it will be said, and said truly, that suitable help is not easily procured, but it can be procured if the search is gone about with a determination to succeed. The farmer does not do without men because they are difficult to get—he only looks for them more diligently. But there are other ways in which the wife's burdens may be lightened besides providing additional hands—helpers which will always keep their temper and never answer back. See that she is supplied with labor-saving machinery. Just what machines will be most serviceable will depend upon circumstances;

but see that whatever in your case would be most helpful is provided. Do not say you "cannot afford" to get them. You cannot afford *not* to get them. It is much more expensive, even from the standpoint of dollars and cents, to wear out your wife than to save her.

There is still another way in which you may lighten the household labor—by having the house and its surroundings conveniently planned. If not already convenient take the inside out and plan it over again. Do not locate the well ten rods off at the foot of a hill. Do not place the kitchen at one end of the house and the dining-room at the other, while the store-room is in the attic and every bedroom up stairs. The distance between any two points may not be great, but when it must be gone over thousands of times as the years go on, the number of needless miles travelled by weary feet is almost incredible. If there were no other consideration, how will a wife be able to stop the numberless little leaks that are possible in a family if she is always tired? As the basis of all other economy, then, save your wife. But if when all is done that can be, severe toil and privation are yet inevitable, there is one thing still in which you need not economize. Give your wife an abundance of kindness and thoughtful consideration, and her heaviest burdens will lose half their weight.

In the wife's department substantially the same direction may be given—Save your time and strength. If you cannot do all you would like, do what is most necessary, and leave the rest undone. Bright tin-ware and shining stoves and dainty household appointments are very desirable; but if to secure them no time is left to be the companion and friend of your husband and children, you are paying too great a price for them; let them go. I do not think anyone will for a moment understand me as advising a neglected home in outward things; but when of two desirable things only one is attainable in perfection, we should by all means choose the more valuable, seeking the other in a less degree. In the part of our subject which relates to the saving of money, a few general rules will cover the whole ground. First, in buying, always choose good material. Its first cost will be greater than that of a poor quality, but it will be much cheaper in the end. It does not follow, however, that to be good it must be expensive. Do not buy a poor silk for dress goods at the price of a good cashmere. Do not buy a cashmere if you can only pay for an alpaca or a winey. Get a good print if you can't afford nothing better; have it neatly made, and you will be better dressed by far than if you bought a poor quality of more pretentious goods. In material good of its class you will be better dressed, to begin with, and after your dress has lost its first freshness you can remodel it, dye it, or make it over for children almost indefinitely, while poor goods would be fit only for the rag-bag. The same principle will apply in making all household purchases.

In the second place, unless in the case of exceptional misfortune, always pay for goods when you buy them—in cash, if possible, but in some way pay for them. You will save the heavy percentage the merchant must charge on all goods sold on time, and you will be conscious that you can look the world in the face,

owing no man anything. Do not say you cannot do this. You can. It may not be always pleasant to begin with, but it is possible. Do with the old till you can pay for the new, and when the new is at last obtained, you will have the satisfaction in its possession you can never feel that you are in debt, and, the first difficulty over, every succeeding purchase will be more easily made. A considerable saving may also be effected when goods are bought in bulk, as may be easily done with the kinds most largely consumed, such as tea, sugar, etc., by two or more neighbors joining together, when wholesale rates can be secured. When supplies of any kind are actually on hand, it is hardly necessary to say that we must use them with judgment if we would use them economically. Food and clothing are means to certain ends, and whatever use of them will best secure these ends at the lowest expenditure is the most economical. It would be poor economy to feed a harvest hand on gruel, however cheap it might be; or to allow the children to wear leaking boots and insufficient clothing to save the cost of new. The probable result would be a doctor's bill which would far exceed the same necessary to provide nourishing food and comfortable clothing. Indeed, if a wise system of dieting were carried out, having due regard to the needs of the system for change of food, and clothing worn for comfort rather than show, the bill for medicine or medical attendance would, in the case of most people, be very small indeed. In the administration of domestic affairs, many small economies will readily occur to the experienced house-keeper. In reducing to practice the directions already given, begin by painting (or oiling) your floor. You can do it yourself, even to mixing the paint, with a little practice, and a coat applied once a year will save you many a back and arm-ache. If you have never mixed paint it might be well to have that part of the work done by a painter, as a sticky floor is a very unsatisfactory possession. Save the remains of tweed suits, drawers, and clothing generally that is too much dilapidated for further wear. Then some spare day go over the pile and select the best parts, coloring them, if necessary, and with a "Novelty Rug Machine" you can, in a short time, and at almost no expense, make mats that will lock well and save your carpets a great deal of wear. When chamber towels and sheets get thin in the middle, sew the selvedge edges together and cut them down the centre, hem the edges, and your linen will take a new lease of life. When they again threaten to give way, use the towels for wiping your crystal and china. When picking fowls, do not burn the large feathers; put them away in any convenient place, and some day, when Bessie and Charley are teasing for something to do, give them the scissors and a newspaper and let them cut off the feathery part from the sides of the quills. When you have a sufficient quantity, "work" them till the shreds are well separated, and you will have a mass equal to the finest eider down. I believe many articles can be much more cheaply bought than made at home. My experience in the matter of soap, however, has been of a contrary kind, that is, taking quality into account. A superior article can be made at a trifling cost in the following way: Take 6 lbs. washing soda, 3 of unslacked lime; put in a kettle and add 4 gallons soft water; let boil a few minutes to dissolve the soda, then set off to settle. To the clear "lye" take 7 pounds of clean grease or tallow, and 2 oz. borax; boil about half an hour, or until the soap will come. Have a piece of sheet iron the size of any convenient box, rub over with grease and put in the bottom; then pour in your soap, and you will have no trouble in getting it out. Many other small economies might be mentioned, did time and space permit, but I must close with the general direction. See that *nothing*—time, strength or material—is wasted.

The Perils of the Sea.

A few facts as given us by Mr. H. McKay, of Dundee, one of the passengers in the steamship Parisian, and late first mate of the ill-fated sealing and whaling steamer Resolute, that was wrecked on the 27th of March, on Ireland's rocks, off Cape Fogo, south of Green Bay, off the coast of Newfoundland. Mr. McKay says: "On the 4th of Feb., 1886, we left Dundee, Scotland, for St. Johns, Newfoundland; there were 49 of us, officers and men; at St. Johns we shipped the complement of our men, 335 all told, and left for the Labrador coast. On the 10th of March we sighted the seals at a distance; on the 15th they were in a large floating field of ice. We got within seven miles of them on the 18th, and we all sallied forth excepting ten, who were left to care for the vessel; that day we killed and skinned 8,000, the following day we killed 12,000, and at night started for our ship. We reached the vessel and tried to free ourselves from the ice, which was carrying us along at the rate of four miles an hour. The ice was from five to seven feet thick, so we put on full head of steam and tried to break through the ice. We used over six barrels of gunpowder to break the ice. While using every means to escape, the vessel was driven on the floe across reef that tipped the ship on her side and tore up the bottom of the vessel, and in one hour and five minutes from the time she struck she settled out of sight. During this time we got the boats on to the ice, and some provisions, and what clothes we could get, and started for the direction in which we had seen another vessel about ten miles distant. The ice was very rough; we divided off into groups and moved towards the ship as near as we could; we always carry a compass with us. After we had walked about five miles we found the ice all broken up into blocks; sometimes we would have to walk round openings of one or two miles, at other places we had to jump from block to block; sometimes one would slip into the water, but we toiled on through this rough and dangerous journey as fast as we could, and all but six reached the vessel safely after about ten hours walking, in which many must have travelled twenty miles in circuitous routes. The six missing men who lost the "Mastiff," the vessel nearest us, some of them being out all night on the ice; one poor fellow had his feet so badly frozen that it is feared amputation will be necessary; he had slipped into the water, and his clothes had to be cut off him when he got on board. The Mastiff transferred us to the S. S. Arctic, which took us to St. Johns, Newfoundland. We were provided there by the Marine Fisheries Association. We have lost our spring fishing and most of our clothes, and will take the first boat we can get to any port. There are sixteen of us now on board the Parisian bound for Liverpool. When we return we must earn something to take to our families; we feel thankful for our narrow escape, but the sealers' and whalers' lives are full of danger; most of us would go back again next spring if we can get a ship.

"Our vessel was very strongly built; we could steam back, and then forward, with full force, and break up ice 5 and 6 feet thick; the vessel's sides were made of iron wood (a wood grown in Australia); it will resist the effects of

ice better than iron or steel will. In the cold weather iron and steel will break like a carrot. This iron wood is so hard and solid that it will sink. I saved from the wreck the horn of a unicorn, a species of whale that we had taken; it weighs 14 lbs. I carried it with me over that ice walk; it is ivory." He showed it to your humble servant and we procured it as a memento, as it is the only one we ever remember seeing. It is spiral like that shown in representation of unicorn, in company with the lion, on the British coat of arms. We hope to take this curiosity to Canada with us. The fish it was taken from weighed about one ton, and was caught in Davis' Straits. "The sealing season only lasts a few weeks. The young seals grow very fast; we can almost see them grow. A large proportion of ladies' kid gloves are made from seal skins. After returning from a sealing expedition we go on a whaling cruise. This is very exciting sport, and also a dangerous one. When we sight a whale, we get within about 60 feet and fire a harpoon into it; the whale immediately goes to the bottom of the sea, and remains about half an hour, when it comes up to blow. All the boats are then about the vicinity where it is expected and fire another harpoon into it. It again sinks to the bottom, and returns to the surface at a shorter interval. Sometimes a whale has carried off half a dozen harpoons, and then got away, but this rarely occurs. We can sometimes send a rocket into one that will explode in the whale and instantly kill it. The larger the whale the easier it is captured; the small ones are too active. Oil is so cheap now that it does not pay to catch whales for oil. The whalebone is the most valuable part of the whale; we will get a ton from a good large whale. It is worth from \$125 to \$500 per ton. Some whales are white; they have no whalebone. The white whales have a useful hide which we take off. The hides of brown whales are of no value. After we have taken the blubber or fat off, a whale sinks, after a time rises to the surface and floats about for a long time, and sometimes gets jammed among the ice, or carried on shore. The polar bear soon finds it; a polar bear has a wonderful scent. I have seen nearly one hundred bears about a whale at a time. The bears are timid and afraid of man, but will show fight when wounded. I have killed over two hundred; I killed twenty last winter. Their claws are very sharp; they can run up an iceberg if it is almost perpendicular. They will throw themselves from an iceberg into the water, and can live in the water just as well as on land.

She Wished to make Her Will.

"I have been referred to you, sir," said a middle aged lady entering the office of a young lawyer not far from the City Hall. "I have some important business I wish attended to, and at once."

"Take a seat, madam," said the lawyer, rising and offering his visitor a chair, "you say your business is of an urgent nature?"

"Yes," said the lady, taking from a satchel a bundle of papers. "I have come to the conclusion that it should be done at once."

"You will please be kind enough to give me the facts in the case," said the young lawyer, visions of a good fee crossing his mind as he glanced over the lady's rich attire.

"Well, you see, I am getting on in life, and I have made up my mind to make my will," said the lady fumbling nervously at the papers in her lap. "I don't care to have people fighting over me after—after I'm dead you know," and she gave a suspiciously hollow little laugh.

"No, of course not. It is always better to have such things settled in time," said the lawyer, taking up his pen, "now whom do you wish to make executor of your property?"

"Make what?" asked the lady.

"Whom do you wish to take charge of the division of your property?"

"Oh yes," said the lady, "I understand. You see you professional people have such queer ways of talking. Do you know, I have a brother who is studying to be an engineer, or surveyor, or something, and I really believe he delights in bringing out the most outlandish names when talking to me. The other evening I happened to mention the building of the bridge, and he got off the greatest lingo about trusses, girders, elevations and a lot more that I was really all mixed up. Speaking of the bridge, do you know that I had an invitation to cross on that little foot path, but I wouldn't do it for worlds. No, I am sure I should jump off or do something horrible of that sort. I don't see how ladies can be so bold, but nowadays they will do most anything daring. I really believe they will hire themselves out as sailors before long. I know I should never make a good sailor. I crossed last summer and had a terrible time. Do you know I was seasick the whole time. Yes, and everything I tried to prevent it only made me more ill, and—"

"You will excuse me, madam," said the lawyer, "for interrupting you, but you were about to say in relation to your will—"

"Oh yes," said the lady laughing. "Do you know, I had quite forgotten it. One gets interested, you know, very often in that way. I have a cousin who is the most absent minded creature you ever saw. I actually believe that girl will forget to be on hand at her own wedding. She isn't engaged yet, though, and I hope she won't be in some time, poor soul. It really makes me sad to see girls become engaged nowadays. The men are growing to be so unreliable. I heard of a very sad case only the other day. A couple had not been married over—"

"Madam," said the lawyer, "don't you think it would be well to come to the will."

"Oh yes, of course," said the lady; "I'm so glad you reminded me. I have the reputation of being such a talker. I'm not a bit like my sister, either. She never says a word from morning till night. I am sure it is better to say something now and then. They say we women out-talk your side of the house, but I do not believe it. I am acquainted with a gentleman who can beat me all to pieces in talking, and he never says anything either. Now, I can stand a good talker if they only throw out some ideas."

"Madam," said the lawyer, rising and glancing at his watch, "I find I have five minutes in which to reach the court room and be in time for the calling of a case. We will attend to your will another day, when I have five or six hours or so on my hands," and he bowed the astonished lady out before she had time to open a fresh battery of words upon him.

Summer Fashions for Wash Dresses.

The fabrics for cotton dresses or "print gowns," as the English tailors call them, are this year particularly soft in finish and attractive in design. Many of the sateens, seersuckers and ginghams so closely resemble silk and wool, that their real origin is only revealed to the touch. Conspicuous among these are those having frisé effects, shown in stripes, blocks, and bars of rich, quaint colors, such as a light blue or buff ground, with dark green or brown frisé figure. Crazy cloth is also a new and pretty, though rather flimsy cotton material, that resembles crape. It will probably be extensively used, as it comes in exquisitely delicate shades, and is warranted to wash and still retain its crinkled appearance. It is said, too, to require no ironing. Blue-gray is now the fashionable color in Paris, and appears here in the ever-useful seersuckers and linens, which make such delightful traveling dresses.

The gathered basque and long draperies are the favorite styles for making up wash-goods. For thin, colored mulls, batistes, or any transparent fabric, the basque is made double; that is, lined with the same as the outside. This is done that the waist may be of the same shade as the doubled skirts. Cambrics and ginghams, however, require no lining whatever, the white corset cover worn underneath being sufficient. The fullness is all confined to the front of the basque, and is done by simply adding two or three inches to the width of the fronts when cutting out by any basque pattern, and gathering at the neck the waist line and end of the basque. The fronts and backs are longer than the sides, and the edge is finished with a bias piping fold. High military collars and small tinted pearl buttons to fasten the basque are worn.

For more dressy waists, embroidery—either white or colored—is added in reverse, or else inserted in V-shape down the back and front alike. Round waists gathered to a belt, with a yoke, or else a white muslin guimpe, still hold their own; and with these are worn dog collars of embroidery or velvet.

Handsome sateens and Chamberies are often also made up, the same as wool or silk dresses, with heavy lining and whalebones, but these have to be sent to a professional scourer to be cleaned. The Norfolk jacket is another pretty easy fashion for any material, and differs from last year's in having only one wide double plait at the back, and one in front.

Overskirts are long, with the regulation apron front, hemmed or trimmed with embroidery or lace. The back breadths are straight and gathered to the belt. Three or four wide plaits down the left side are held in place by cross tapes, sewed underneath them, and the front breadths next these are drawn across to the right side and caught up into folds by loops and buttons. Unlike stuff dresses, one or two narrow ruffles finish the lower skirts of cotton gowns.

When two materials, as plain and figured, are used, the combination is somewhat odd. For instance, the basque and foot-platings may be of plain blue cambric, and the skirts, waist, collar and cuffs, of that which is figured all over. This is an excellent style for remodelling old dresses, but in buying new, it is better economy to have all of one fabric.

In white muslins, embroidered stripes are the newest mode. These are beautifully made with a Figaro jacket, that has a closely-fitted postillion back, while the fronts are cut away, and display a soft full vest of delicately tinted *Crepe lisse*, or silk muslin. Sashes are largely shown this season, and appear in some form on cotton dresses and in most decided and exaggerated contrasts. Thus, brilliant scarlet ribbon is now worn on dark blue sateen, and dull brown on plain pink mulls.—[American Agriculturist.

How to Adorn a Home.

A young lady, a farmer's daughter, desires to fit her home up nicely for next winter and wants some hints to that end. Now, this is a very worthy ambition, for it is not only pleasing to have pretty and handsome things about us, but it furnishes pleasant work for the hands, and thought for the mind, and is a useful mental culture. The beautiful always refines and elevates the character, and nothing is more pleasing and useful than to adorn one's home. The most neglected part of a house is generally the bedrooms, perhaps because as one only sleeps there it is not supposed necessary to have anything particularly nice about them. But one rests so much better in a nice, pretty bedroom, and then it may make a quiet, cosy sitting room as well. The French manner of arranging sleeping rooms is desirable, that is, to have the bed in an alcove draped with curtains nicely trimmed and looped up. The curtains may be made of common brown or unbleached cotton, trimmed on the edge with a wide band of scarlet or blue cotton; and stars of the other color stitched on make a nice relief. The curtains may be gathered with bands of yellow cotton with bows. An alcove may be made by arranging curtains to a cord or wooden strip fixed to the wall; and a lambrequin to match the curtains may be hung across. Then some wall pockets may be made of stout pasteboard stitched together or glued and covered with colored cotton to suit the curtains and trimmed with bows of ribbon and tassels at the corners. These may be cut out into heart or diamond shapes or like leaves, such as a grape leaf which may be covered with green. Brackets may be cut out of thin boards or shingles, for small ornaments, and covered with odds and end of silk or muslin or flannel and ornamented with various little devices, such as small spruce cones or Autumn leaves. Baskets for the dressing table may be made of stiff card board, and small cones may be neatly cut down the middle and glued all over it, or the large scales from pine cones may be glued on or even stitched on. Three of the cones fixed with small screws will form appropriate feet. A very pretty ornament for a bracket is a vase made of such cones filled with crystallized grasses, oats, wheat ears, or with bunches of dried Autumn leaves. Perhaps these hints may be of service to many a farmer's daughter.

Milk is a food that should not be taken in copious draughts like other fluids, which differ from it chemically. Milk should be slowly taken in mouthfuls at short intervals; and thus it is rightly dealt with by the gastric juice. If milk be taken after other food, it is almost sure to burden the stomach and to cause prolonged indigestion. The better the quality of the milk the more severe the discomfort will be under these conditions.

Elephant Talk.

Mr. George P. Sanderson, whose position as officer in charge of the Government elephant-catching establishment in India has given him a greater familiarity with that animal and its habits than perhaps any other man living, says that elephants make use of a great variety of sounds in communicating with each other, and in expressing their wants and feelings.

Some are uttered by the trunk, some by the throat. The conjunctures in which either means of expression is employed cannot be strictly classified, as fear, pleasure, want, and other emotions, are sometimes indicated by the trunk, sometimes by the throat. An elephant rushing upon an assailant trumpets shrilly with fury, but if enraged by wounds or other causes, and brooding by itself, it expresses its anger by a continued hoarse grumbling from the throat.

Fear is similarly expressed in a shrill, brassy trumpet, or by a roar from the lungs. Pleasure by a continued low squeaking through the trunk, or an almost inaudible purring sound from the throat. Want—as a calf calling its mother—is chiefly expressed by the throat. A peculiar sound is made use of by elephants to express dislike or apprehension, and at the same time to intimidate, as when the cause of some alarm has not been clearly ascertained, and the animals wish to deter an intruder. It is produced by rapping the end of the trunk smartly on the ground, a current of air hitherto retained being sharply emitted through the trunk, as from a valve, at the moment of impact. The sound made resembles that of a large sheet of iron rapidly doubled. It has been erroneously ascribed by some writers to the animals beating their sides with their trunks.

The same writer, in treating of other elephantine traits, says, "It is exceedingly entertaining to note the gravity of young calves, and the way in which they keep close to their bulky mothers. The extreme gentleness of elephants, the care they take never to push against, or step upon, their attendants, doubtless arises from an instinctive feeling designed for the protection of their young, which a rough, though unintentional, push or blow with the legs of such huge animals would at once kill.

"Amongst all created creatures the elephant stands unrivalled in gentleness. The most intelligent horse cannot be depended upon not to tread on his master's toes, and if terrified, makes no hesitation in dashing away, even should he upset any one in so doing. But elephants, even huge tuskers, whose heads are high in the air, and whose keepers are mere pigmies beside them, are so cautious that accidents very seldom occur through carelessness on their part."

What is that which has three feet, but no legs, is all body, but no limbs, has no toes on its feet, no head, moves a great deal, and never uses its feet for that purpose, has one foot at each end, and the other in the centre of its body? This is a queer creature in some respects, and is very popular among the ladies and some men. It never walks out, but goes with one foot where its head might be, dragging the other foot behind. These feet have nails, but no toes, no heels, and no bones in the foot.—A yard measure.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES,—Here half the year is gone already; we can scarcely keep count of the months, they fly so fast, and the prizes I offered in January last are soon to be distributed. The competition is pretty keen, so you had better look sharp and send some real good puzzles for the July number, which will contain the names of the fortunate ones for the first half year. I shall then offer the same prizes to be given again the 1st of January, and I hope to hear from a great number of new nephews and nieces, as well as all the old ones. Surely most of you have patience enough to work for six months, especially with the chance of winning such splendid prizes.

UNCLE TOM.

Puzzles.

1—ANAGRAM.

Eb slouzac ni a rerppo eusca,
Het yaw yht treha sietrdc ehte;
Tle nthiog tub odgo tyh lwil eorfpre,
Schur lah hatt lil-estefc hets.

M. E. DRYDEN.

2—NUMERICAL ENIGMA.

My 5, 6, 7, is a domestic animal.
My 2, 4, 3, 8, is a bird of the genus Passeres.
My 7, 8, 1, is a well known beverage.
My whole is a pleader. A. E. ANDERSON.

No. 3.

I am a word of three syllables and thirteen letters; one vowel occurs four times, one consonant six times, one twice, and another once. Reverse me and I am still the same by exchanging my double letters for my single ones.

LIZZIE C. WATT.

4—CHARADE.

When friends part with friends, as often they do,
With pressure of 1, 2, 3, 4, 5, they then bid adieu;
The parting, though painful, the thought is so sweet
That 5, 6, 7, 8, other day they hope for to meet.
This rhyme may be simple, but we think that it shows
That 1, 2, 3, 4, 5, 6, 7, 8, is that TOTAL does.

FAIR BROTHER.

5—PENTAGON.

- 1—A consonant. *
- 2—A wager. ***
- 3—A premium. *****
- 4—Flesh of animals taken in hunting. *****
- 5—A struggle. *****
- 6—To clear up. *****
- 7—To want. *****

FAIR BROTHER.

6—SQUARE WORD.

- 1—Pertaining to the sun.
- 2—A tribe of Indians.
- 3—Charged with a full load.
- 4—Any active cause or power.
- 5—Openings produced by violent separations.

FAIR BROTHER.

7—DIAMOND.

- 1—A consonant. 2—Angry. 3—Merriment.
- 4—A fictitious marine animal. 5—Attraction.
- 6—With a low sound. 7—A mineral found between layers of coal. 8—Something indispensable to "Uncle Tom's Nephews and Nieces."
- 9—That may be magnified. 10—Cut short.
- 11—Legal power. 12—An accountant. 13—

An outcry. 14—The goddess of mischief. 15—
In "Uncle Tom's Department."

FAIR BROTHER.

8—SYNCOPIATION.

A mansion=position.
Bitter=parched.
Method=a river in Europe.
A waterfowl=a cradle.
Part of a house=a strong wind.
A small glass vessel=a boy's nickname.
Durable=dark.
Syncoated letters mean a rope dance.

ROBERT J. RISK.

9—ILLUSTRATED REBUS.



Answers to May Puzzles.

- 1—SHY
AWL
ILL
DISSOLUTE
VOLUNTARY
YOUNGSTER
OFT
RED
PLY
ELM
WOE
TWO
- 2—Persevere and succeed.
- 3—Letter-Writing.
- 4—Be not too wise in your own eyes,
Or you'll soon see what a great fool you be.
- 5—The pen of the author and statesman,
The noble and wise of our land,
The sword and the chisel and palette,
Shall be held by the little brown hand.
- 6—Revise—devise.
Feign—reign.
Pierce—fierce.
Crate—grate.
Grow—brow.
- 7—Home-rule.
- 8—There is no lack of kindness
In this world of ours,
Only in our blindness
We gather thorns for flowers.

Names of those who have Sent Correct Answers to May Puzzles.

A. Manning, Chas. E. Smith, Emma Dennee, Lizzie C. Watt, Minnie A. Brown, A. Ludwig, Robert J. Risk, Nellie Green, Fair Brother, Minnie Evans, Geo. Cairncross, A. L. Munroe, Esther Marshall.

How to Save Boys.

Women who have sons to rear, and dread the demoralizing influences of bad associates, ought to understand the nature of young manhood. It is excessively restless. It is disturbed by vain ambitions, by thirst for action, by longings for excitement, by irrepressible desires to touch life in manifold ways. If you, mothers, rear your sons so that your homes are associated with the repression of natural instincts, you will be sure to throw them in the society that in any measure can supply the need of their hearts. They will not go to the public-house at first, for love of liquor; they go for the animated and hilarious companionship they find there, which they find does so much to repress the disturbing restlessness in their breasts. See to it, then, that their homes compete with the public places in their attractiveness. Open your blinds by day, and light bright fires by night. Illuminate your rooms. Hang pictures upon the walls. Put books and newspapers upon your tables. Have music and entertaining games. Banish demons of dullness and apathy that have so long ruled in your household, and bring in mirth and good cheer. Invent occupation for your sons. Stimulate their ambitions in worthy directions. While you make home their delight, fill them with higher purposes than mere pleasure. Whether they shall pass happy boyhood, and enter upon manhood with refined tastes and noble ambitions, depends on you. Do not blame miserable bar-keepers if your sons miscarry. Believe it possible that with exertion and right means, a mother may have more control of the destiny of her boys than any other influence.—Selected.

Silenced.

The Scotch often use humor to settle a question which, otherwise, might give rise to an excited argument, involving much hair splitting logic. The following anecdote of Norman McLeod, the eloquent preacher, illustrates this happy use of the wit which transfixed a man as an entomologist does a bug. He was on his way to church, to open a new place of worship. As he passed slowly and gravely through the crowd gathered about the doors, an elderly man, with the peculiar kind of a wig known in that district—bright, smooth, and of a reddish brown—accosted him.

"Doctor, if you please, I wish to speak to you."

"Well, Duncan," said the venerable doctor, "cannot you wait till after worship?"

"No, doctor, I must speak to you now, for it is a matter upon my conscience."

"Oh, since it is a matter of conscience, tell me what it is; but be brief, Duncan, for time passes."

"The matter is this, doctor. Ye see the clock yonder, on the face of this new church? Well, there is no clock really there; nothing but the face of a clock. There is no truth in it but only once in the twelve hours. Now, it is in my mind very wrong, and quite against my conscience, that there should be a lie on the face of the house of the Lord."

"Duncan, I will consider the point. But I am glad to see you looking so well. You are not young now; I remember you for many years; and what a fine head of hair you have still."

"Eh, doctor, you are joking now; it is long since I have had any hair."

"O Duncan! Duncan! are you going into the house of the Lord with a lie upon your head?"

This, says the story, settled the question; and the doctor heard no more of the lie on the face of the clock.

Believed his Wife.

A certain queer old character, when asked what was his opinion on any subject, would never answer till he asked his wife about it. The Dutchman here seems to have flourished in very much the same sort of second-hand wisdom.

During the trial of a case in Louisville, last week, a witness persisted in testifying to what his wife told him. To this of course the attorney objected, and it was ruled out by the judge. He would proceed again to tell "shust how it was," when the attorney would sing out,—

"How do you know that?"

"My wife told me," was the answer.

This was repeated several times. Presently the judge became unable to contain himself longer:

"Suppose your wife were to tell you the heavens had fallen, what would you think?"

"Vell, den I dinks dey vos down."

Rome Wasn't Built in a Day.

The boy who does a stroke, and stops—
Will ne'er a great man be;
'Tis the aggregate of single drops
That makes the sea the sea.

Not all at once the morning streams
Its gold above the gray,
It takes a thousand little beams
To make the day the day.

Upon the orchard rain must fall,
And soak from branch to root,
And buds must bloom and fade withal,
Before the fruit is fruit.

The farmer needs must sow and till
And wait the wheaten head,
Then cradle, thresh, and go to mill,
Before his bread is bread.

Swift heels may get the early shout,
But, spite of all the din,
It is the patient holding out
That makes the winner win.

ALICE CARY.

Did you think, asks a Paris paper, how many male and female ancestors were required to bring you into the world? First, it was necessary that you should have a father and a mother—that makes two human beings. Each of them also had a father and mother—that makes four human beings. Each of these four must have had a father and mother—that makes eight human beings. And so we must go back forty-six generations, which brings us only to the time of Christ. The calculation thus resulting shows that 139,245,017,489,534,976 births must have taken place in order to bring you into the world—you who read these lines. But remember we are only taking the case of yourself—one human being—and there are a billion of human beings in the world with the same history, and we have only carried back the calculation to the time of Christ. How monstrous the calculation becomes if we carry it back six thousand years! How ghastly it becomes if we push it back two hundred and fifty thousand years, which De Mortillet and others give as the age of the human race! Just count three generations to a century, or thirty to every thousand years, and reckon up the history of one individual. Imagine the number of births necessary to bring into existence one member of the seven thousand, five hundredth generation!

Little Ones' Column.

Going Away for the Summer.

Good-morning, Mrs. Silvertip; pray find a seat, my dear,
And take a fan, and 'scuse me, please, because I'm lying here;
I really can't hold up my head, my brain it feels so dizzy;
I've had such heaps of things to do—I never was so busy.
You see Sophia's grown so fat, the doctor said that she
Must give up books and go to play—advice that suited me;
But then her clothes were all worn out; she'd nothing fit to show
At Newport, or Mount Washington, or Thousand Isles, you know.
I've bought her lots of dresses and little hats, my dear;
There will not be a prettier child at any place this year;
But then, you see, it's worn me out; I've been so awful cross,
I've even shook Sophia, dear, and made a face at Floss.
At Floss! my own dear darling dog; he thought it only fun.
But, Sophie! Mrs. Silvertip, I blushed at what I'd done;
To lose one's temper is so bad; my tears fell down in streams,
And then to make it up, I bought a pound of chocolate creams.
Of course, I ate the most myself; oh, won't you have some, dear?
No, thank you, not a cream for me; my head is worse, I fear;
How Floss does bark! and Sophie looks so stupid, dull and brown;
The trouble is with my poor nerves, I'm really all run down.
And there's mamma! I'm 'fraid she's brought some rhubarb in that spoon;
Good-by, dear Mrs. Silvertip; why must you go so soon?
Yes, yes! I'll write, when I'm myself, and not so warm and dizzy;
This getting fixed to go away has kept me much too busy.

Wait for Me.

Seaward runs the little stream
Where the wagoner cools his team,
Where, between the banks of moss,
Stand the stepping-stones to cross.
O'er them comes a little maid,
Laughing, not a bit afraid;
Mother, there upon the shore,
Crossed them safely just before.
'Tis the little lassie's plea—
Wait for me, wait for me!

Ah, so swift the waters run—
One false step 'twas all undone;
Little heart begins to beat
Fearing for the little feet,
Soon her fear will all be lost,
When the stepping stones are crossed,
Three more yet on which to stand—
Two more—one more—then on land!
'Tis the little lassie's plea—
Wait for me, wait for me!

Ah, for you, my laughing lass,
When the years have come to pass,
May One still be near to guide,
While you cross Life's river wide,
When no helping hand is near,
None, if you should call, to hear—
Think, however far away,
Mother still knows all you say;
E'en in heaven hears your plea—
Wait for me, wait for me!

Mother's Girl.

Sleeves to the dimpled elbow,
Fun in the sweet blue eyes,
To and fro upon errands
The little maiden flies.
Now she is washing dishes,
Now she is feeding the chicks,
Now she is playing with pussy,
Or teaching Rover tricks.

Wrapped in a big white apron,
Pinned in a checkered shawl,
Hanging clothes in the garden,
Oh, were she only tall!
Hushing the fretful baby,
Coaxing his hair to curl;
Stepping around so briskly
Because she is mother's girl.

Hunting for eggs in the hay-mow,
Petting old Brindle's calf,
Riding Don to the pasture
With many a ringing laugh,
Coming whenever you call her,
Running whenever sent,
Mother's girl is a blessing,
And mother is well content.

Commercial.

PRICES AT FARMERS' WAGONS, TORONTO.

	May 28, 1886.
Wheat, fall, per bushel	\$0 78 0 78
Wheat, spring, do.	0 78 0 78
Wheat, goose, do.	0 68 0 68
Barley, do.	0 60 0 90
Oats, do.	0 35 0 36
Peas, do.	0 58 0 00
Dressed hogs, per 100 lbs.	6 50 6 75
Beef, forequarters	4 50 6 00
Beef, hindquarters	8 50 10 00
Mutton, carcass	8 00 9 50
Hay, timothy	12 00 13 25
Hay, clover	9 00 11 00

PRICES AT ST. LAWRENCE MARKET, TORONTO.

	May 28, 1886.
Chickens, per pair	\$0 65 0 85
Ducks do.	0 65 0 90
Butter, pound rolls	14 16
Butter, large rolls	12 13
Butter, inferior	10 11
Lard	10 00
Bacon	9 11
Turkeys	75 1 50
Geese	70 85
Cheese	9 11
Eggs, fresh, per dozen	12 13
Potatoes, per bag (new)	50 65
Apples, per bbl.	1 00 1 75
Cabbage, per doz	80 1 00
Turnips, per bag	30 40
Carrots, per bag	40 45
Beets, per peck	15 00
Parsnips, per peck	15 20
Onions, per bag	1 00 1 25

LIVE STOCK MARKETS.

Buffalo, May 25th, 1886.

CATTLE.

Receipts 6,562, against 5,776 the previous week. The cattle market opened up active on Monday with 81 loads on sale. There was a good demand from the local trade and shippers. The best steers sold at \$5 50@5 90, down to \$5@5 25. Good to choice mixed butchers' stock brought \$4 50@4 90, and common \$3 25@3 75. Michigan stockers and feeders were quoted at \$3 25@4 15. There were only three loads of cattle received on Tuesday and Wednesday and the market ruled steady and firm. The following were the closing

QUOTATIONS:

Extra Beeves—Graded steers weighing 1,450 lbs and upwards	\$5 50 @5 90
Choice Beeves—Fine, fat, well-formed steers, weighing 1,300 to 1,400 lbs	5 25 @5 50
Good Beeves—Well-fattened steers weighing 1,200 to 1,350 lbs	5 00 @5 35
Medium Grades—Steers in fine flesh, weighing 1,050 to 1,250 lbs	4 75 @5 35
Light Butchers—Steers averaging 850 to 1,100 lbs, of fair to good quality	4 25 @4 75
Butchers' Stock—Inferior to common steers and heifers, for city slaughter, weighing 900 to 1,100 lbs	3 25 @3 75
Michigan stock cattle, common to choice	3 25 @3 75
Michigan feeders, fair to choice	4 00 @4 15
Fat bulls, fair to extra	3 25 @3 60

SHEEP.

Receipts, 23,200, against 21,000 the previous week. There were 44 loads of sheep on sale Monday. The demand was active at prices 5@10 cents higher than those of Saturday. Only one load was offered on Tuesday. There were 29 loads on sale Wednesday. The market ruled dull and prices declined fully 25 cents from the opening rates of Monday. Common to fair sheep sold at \$4 25@4 75; fair to choice, \$4 75 @5; common to fair yearlings, \$5 50@6; good to choice, \$6@6 50.

HOGS.

Receipts, 46,601, against 57,008 the previous week. The market opened up active on Monday with 45 loads on sale, prices ranging about the same as those of Saturday. The market closed with all sold. The receipts were light on Tuesday, and prices advanced \$5@10 cents. On Wednesday there were 15 loads on sale, and the market ruled steady at the advance of Tuesday. Pigs brought \$4 25@4 35; good strong selected medium Yorkers and weights were sold within the range of \$4 55@4 60; bulk of sales at \$4 00; no light mixed here; coarse mixed heavy ends, \$3 50@3 90.

We desire to call the attention of our readers to the Fanning Mill of Mr. Manson Campbell, of Chatham. We do so with every confidence, believing it to be one of the best manufactured, and from our personal knowledge of Mr. Campbell, we cheerfully recommend him to intending purchasers as a reliable and a conscientious man of business.

NEW ADVERTISEMENTS.

ADVERTISING RATES.

The regular rate for ordinary advertisements is 25c. per line, nonpariel, or \$3 per inch. No advertisement inserted for less than \$1. Special contracts for definite time and space made on application.

Advertisements unaccompanied by specific instructions inserted until ordered out, and charged at regular rates.

The FARMER'S ADVOCATE is the unrivalled advertising medium to reach the farmers of Canada, exceeding in circulation the combined issues of all the other agricultural publications in the Dominion. Send for an advertising circular and an estimate.

SPECIAL NOTICE.

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

CANADA'S GREAT
**INDUSTRIAL
FAIR**

—AND—
Agricultural Exposition, '86

WILL BE HELD AT THE CITY OF
TORONTO

—FROM—
SEPTEMBER 6th to 18th

\$25,000 IN PRIZES.

For copies of Prize List containing all particulars drop a post card to

H. J. HILL, Secretary, Toronto.

FARM and SCHOOL BELLS



GUELPH, CANADA.

Quality unsurpassed. Prices very moderate. Send for our revised descriptive circular.

J. B. ARMSTRONG M'FG. CO., (LIMITED)
246-c GUELPH, CANADA.

Advertise your Stock in the Farmer's Advocate.

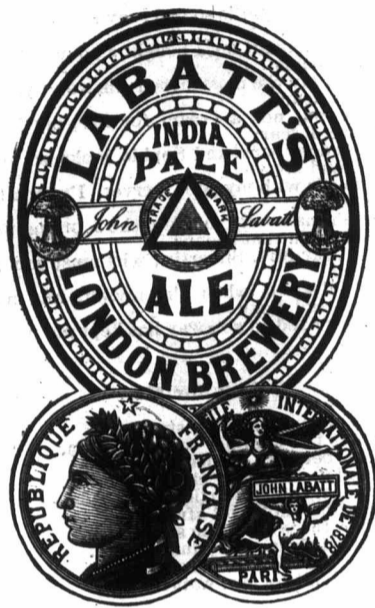
Best Advertising Medium in America.

PERCHERON HORSES.

Young Stock For Sale at Island Home Stock Farm, Grosse Isle, Wayne Co., Mich. A number of Pure-bred Fillies, Weanlings, Yearlings, and Two-year-olds; also some choice Young Mares with Foal. We have some High Grade Young Stock at prices low for quality of stock. Correspondence solicited. Visitors welcome. Address

SAVAGE & FARNUM, Detroit, Mich.

246-b



Received the Highest Awards for Purity and Excellence at Philadelphia, 1876; Canada, 1876; Australia, 1877, and Paris, 1878.

Prof. H. H. Croft, Public Analyst, Toronto, says:—"I find it to be perfectly sound, containing no impurities or adulterations, and can strongly recommend it as perfectly pure and a very superior malt liquor."

John B. Edwards, Professor of Chemistry, Montreal, says:—"I find them to be remarkably sound ales, brewed from pure malt and hops."

JOHN LABATT, LONDON, Ont., Canada.

—FOR—
Fruit Packages

—AND—
BASKETS

Of every description and of the best quality, send to THE

OAKVILLE BASKET FACTORY!

Strawberry and Raspberry Baskets.
Cherry, Peach, Plum and Grape Baskets.
Clothes Baskets. Butcher's Baskets.
1, 2 and 3 Bushel Baskets.
Satchel and Market Baskets.
Gardener's Plant Boxes.
Grocers' Butter Dishes, &c., &c., &c.
W. B. CHISHOLM, - Oakville.

243-d

Champion Fire and Burglar Proof

SAFES

Small sizes for farmers at low prices. Also

STUMP AND STONE EXTRACTORS, HAY PRESSES, CULTIVATORS, &C.

S. S. KIMBALL,

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247-y



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Dr. William's Indian Pile Ointment is a sure cure for Blind, Bleeding or Itching Piles. No one need suffer. Prepared for Piles only. It never fails to cure. Sold by druggists for \$1.00, or mailed on receipt of price.

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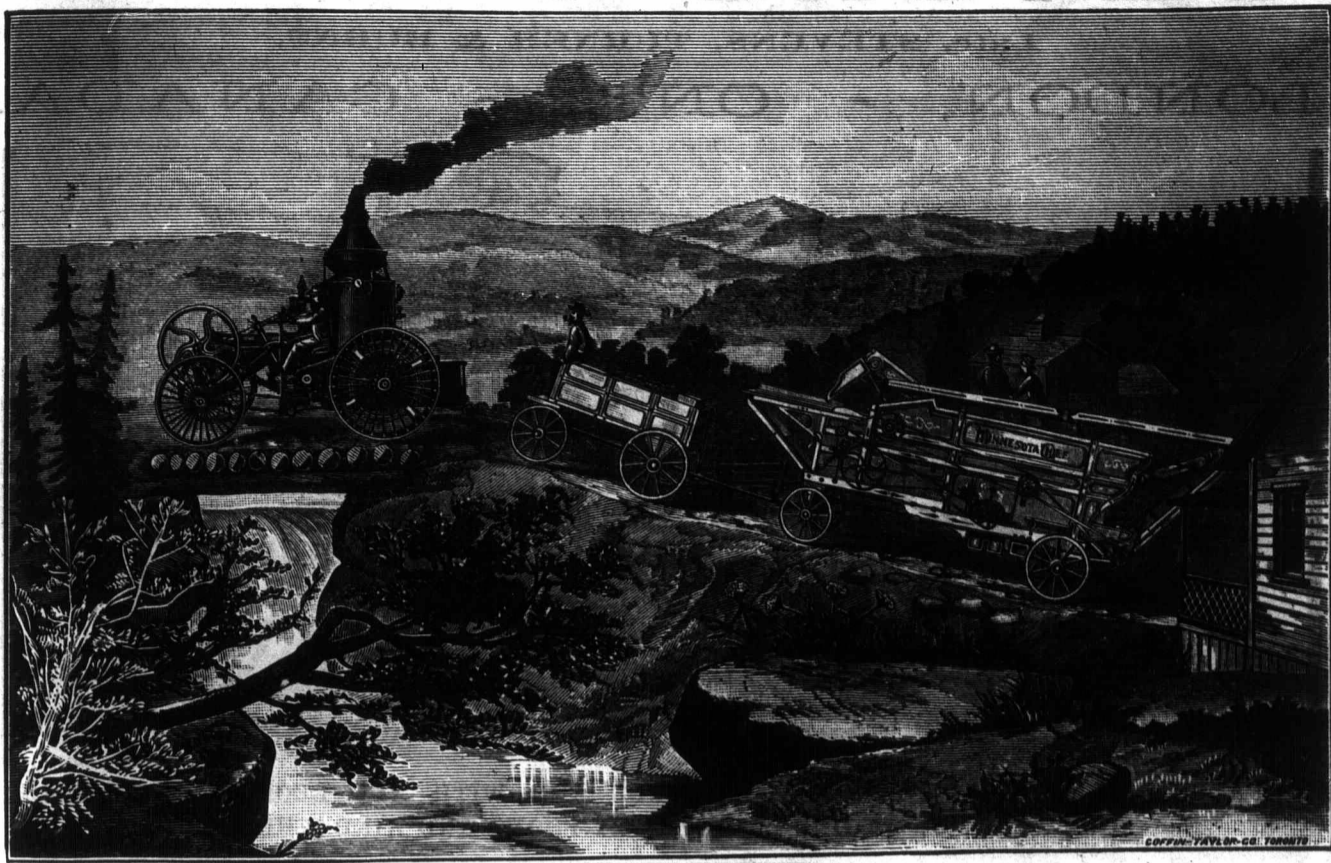
244-y

Notices.

THE TORONTO INDUSTRIAL FAIR.—The Prize List for the Toronto Industrial Fair, to be held from the 6th to 18th of September next, is now ready, and will be sent to anyone desiring a copy on their dropping a post card to the Secretary at Toronto. Nearly \$14,000 of the \$25,000 offered in prizes is for live stock and agricultural products.

A COLLEGE AT HOME.—Young and middle aged persons who are anxious to obtain, in the most economical way, a thorough preparation for the practical affairs of life, will be interested to learn that the Bryant and Stratton Business College of Buffalo, N. Y., now gives a complete and thorough course of business study by mail at the student's home. This special dept. has been in successful operation for two years. It is very largely patronized and has students from nearly every State in the Union and most of the British American Provinces. The course of study embraces Book-keeping, Business Forms, Penmanship, Commercial Arithmetic, Business Law, Letter-writing, Shorthand, etc., and the mode of instruction gives general satisfaction to its patrons. Having visited this school and seen something of its workings, we are prepared to commend it to our readers. This plan will enable many to obtain a practical education who could not otherwise enjoy its benefits. Full particulars can be obtained by addressing C. L. Bryant, Pres't., Buffalo, N. Y.

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Most perfect traction engine in Canada

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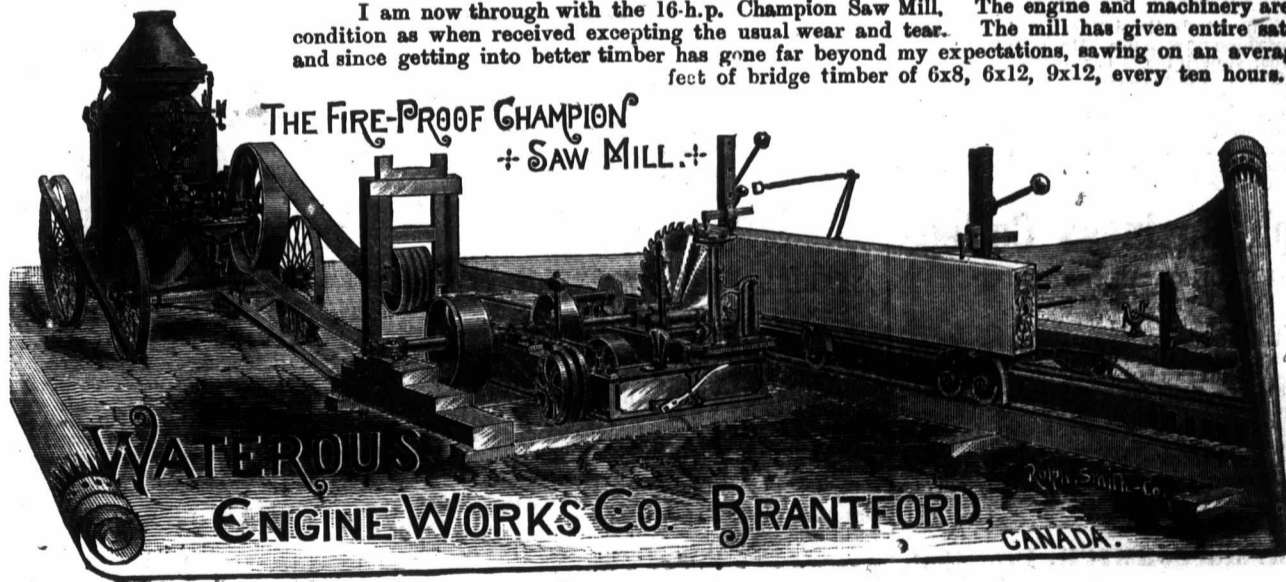
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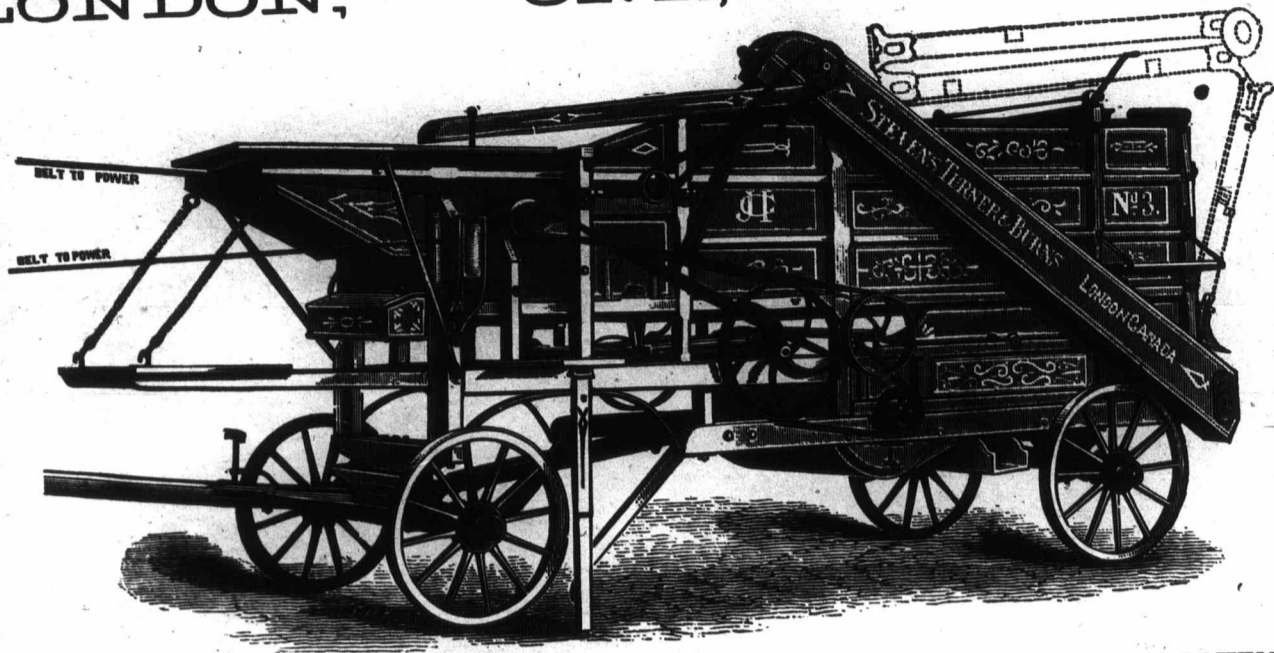


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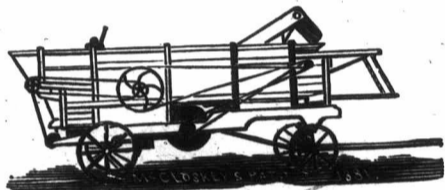
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By Means of our Clover Attachment
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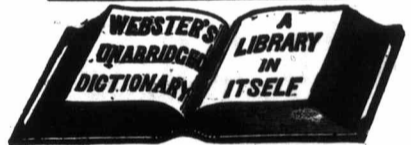


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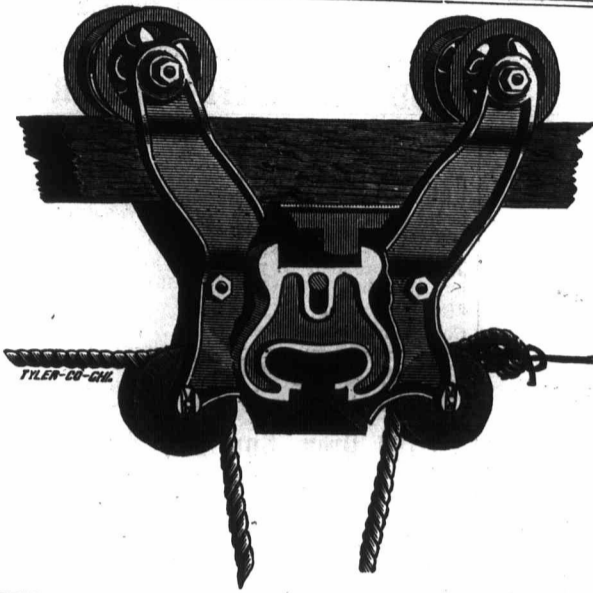
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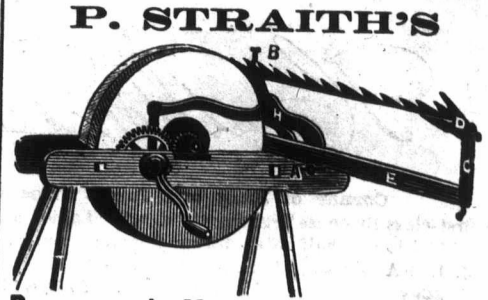
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NEW ACT OF DOMINION PARLIAMENT.

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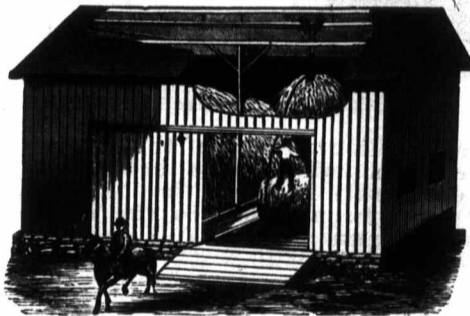
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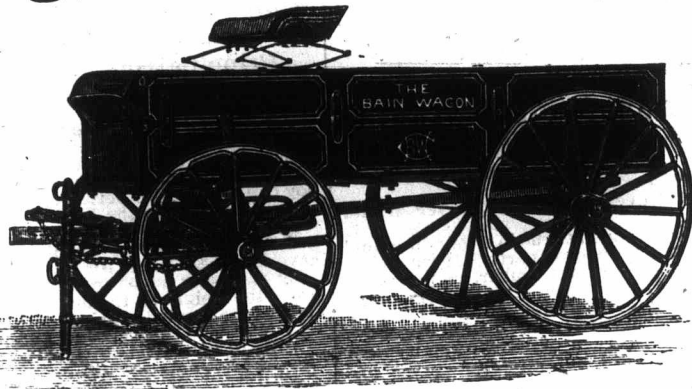
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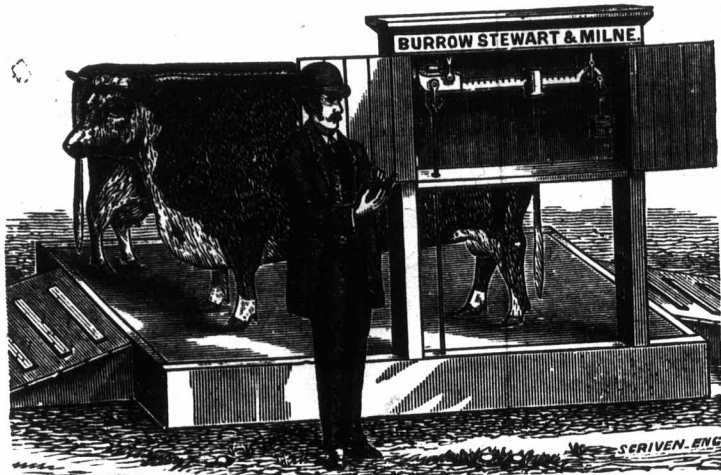
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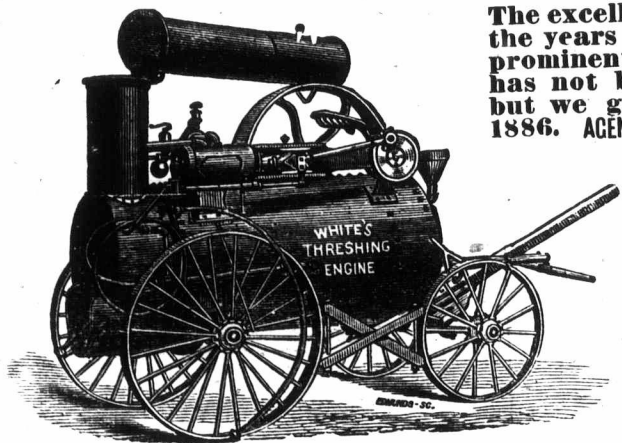


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