

# FARMER'S ADVOCATE

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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,  
300 Richmond Street,  
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### 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 *Agricultural Exhibitions as Educational Institutions for the Farmer and his Family*, has been awarded to S. A. Laidman, Binbrook, Ont. The essay appears in this issue.

A prize of \$5.00 will be given for the best original essay on the following subject: *On what Basis can the Middlesex Agricultural Council and Our Farmers most Harmoniously Co-operate for the Best Interests of Agriculture?* Essays to be handed in not later than August 15th.

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

### Editorial.

#### Education for the Farmer and his Family.

The significance of this subject at the present time can no longer be questioned. It is therefore very essential that a firm foundation be established; otherwise look out for booms. Agriculture is now in a transition stage, and farmers must move with the times or suffer the consequences. Before dwelling upon this question, the existing systems of agricultural education should be glanced at, and if the principles are sound, there can be little left to be desired.

The agricultural exhibition, supposed to be the chief source of education for adult farmers, is a miserable failure, as we have often pointed out. It costs our farmers heaps of money and does more harm than good. Two or three years ago, the Government commenced to offer annual prizes to students who passed certain examinations in various agricultural branches, which has stimulated a few to read and study agricultural works, but the advantages by no means compensate for the outlay. The Agricultural and Arts Association gives annual prizes for essays on agricultural topics, but the information so obtained is far inferior to that contained in the agricultural press, and does not reach the masses. The people's money so invested does not produce adequate returns. The public money squandered in fat-stock shows would produce far better results if it were dumped into the middle of the Atlantic. The Ontario Agricultural College has proved beneficial in teaching the principles of agriculture, but the number of Canadian farmers benefited is small compared with the expense involved; and the good accomplished by the College has been offset by the mismanagement of the Model Farm, where the managers are utterly incapable of applying the first principles of agriculture to their farm operations. The money squandered in prize farms is unproductive of desirable results, as well as false in principle, and the Government grant should be abolished. As a rule, the public moneys spent in so-called agricultural education have really gone to furnish an asylum for semi-literary hacks and others who were not born to earn their bread by personal exertions.

The only free and independent source of agricultural education is the agricultural press. By its own exertions, it has to compete with Government squanderings on every side. From many quarters there are clamorings for agricultural professors to stump the country for the

purpose of instilling agricultural science into the farmers' minds. The press dare not go extensively into the science of agriculture owing to the prejudice against "book-farming," a majority of farmers believing that all which they cannot comprehend is nothing but theory; a statement must be simple and practical, its truthfulness being a matter of secondary consideration. In reality, the more scientific, the more truthful, and usually also the more technical. The press will furnish science enough when its readers are prepared to accept it as their guide. The politicians are laboring to make the agricultural press subservient tools, and if the public expenditures for so-called agricultural purposes continue in a much greater ratio, they may succeed, but never, never so far as the ADVOCATE is concerned. It will suffer collapse before it submits.

The question to be solved is, How can agricultural expenditures be reduced and the principles of agriculture be more successfully and widely disseminated amongst our farmers and their families? Our agricultural exhibitions would be one of the most practical educational mediums for farmers if they had not been reduced to fat-stock shows and gambling dens on the most improved American style, and if the prizes were awarded for the encouragement of desirable objects, instead of for rings of speculators. The principle has been that the highest prizes be given for objects that will draw the greatest crowds for the benefit of show speculators. So long as farmers entertain no loftier ideas than these concerning agricultural education, there will be no scope for improvement.

With all these facts before our eyes, we have faint hopes for the adult generation. We would educate the budding farmers to a loftier comprehension of the principles of agriculture. In order to accomplish this object, making the truth reach the masses instead of the classes, the science and technicalities of the subject should be introduced into our public schools. This plan would involve no additional expense. Our coming farmers would then be readers and thinkers in matters pertaining to their profession; they could readily unite on a basis of sound principles, and the politician would be compelled to appeal to their judgment instead of inflaming their passions.

Our prize essayist has made a very good exposition of the subject. He may, however, have laid too much stress on winning the respect of our city cousins. Farmers' sons and daughters, as a rule, have more manners than their city cousins, although they may have less etiquette. Farmers should be more prone to adopt a code of etiquette suitable to their

needs, instead of aping city customs, and if the world recognized the distinction, our farmers should be proud of it. Our city cousins should be made to know and feel that, if they wish to make themselves agreeable amongst rural folk, they must study country habits. If it be said concerning any man that "he acts just as if he came from the country," let such a compliment be the farmer's proudest boast. The boom forcing city customs outside of the suburbs should be nipped. Let fit things be kept in fit places.

With regard to the fittest education for the farmer's daughter, we will merely submit a test problem, and when she is able to answer it intelligently, giving reasons for every step, we will consider the most important part of her education complete: Cook ten meals, each having exactly the same nutritive value, but composed of different combinations of food, four meals to contain no meat, and two to contain no animal products whatever. Give the cost of each meal, and state what foods should be cooked, and why.

In carrying out these operations, the accomplished cook will find that the cost per meal for each person will vary from one cent to twelve or fifteen cents, although each meal will have the same satisfying effect on the hungry boys. Here is an immense scope for economy, for health, and for the exercise of the intellectual and the moral faculties.

#### On the Wing.

INDIAN AND COLONIAL EXHIBITION—TRADE PROSPECTS.

On the 8th of June two important inaugural meetings were held in the Exhibition—one with the object of developing the trade and commerce of our country.

The plans as yet are very imperfect, and some of the suggestions thrown out by officials were not unanimously endorsed by the exhibitors.

One official urged the importance of strawberries rather too strongly. Another advised the establishment of a bureau, or some similar institution, to import Canadian fruit throughout the present summer.

The officials appeared to monopolise the time to force their views, without sufficient time or attention being given to the exhibitors whose endorsement of their suggestions they wished to obtain.

One exhibitor being called on to express his views, said he could not endorse the plans brought forward with regard to the Government importing fruit during the summer. He thought that if a fair chance were given to exhibitors and growers, private individuals would embrace every opportunity given them, and do much more good than could be effected by the Government embarking in the business. The Govern-

ment might import some in the autumn for exhibition if necessary. He condemned the sale of the miserable representatives of apples that was being carried on in the grounds by some monopolists. The apples, he thought, should have been condemned, as he doubted if such inferior, insignificant specimens could be grown in Ontario; if they were, he should only consider them "culls." Such proceedings tended to the injury of Canada rather than its benefit. The meals, too, supplied in the School of Cookery he considered far inferior to what any Canadian farmer's wife could get up at half the cost. He had understood that each Colony was to be represented by an eating establishment. Had this been done, and some good farmers' wives and daughters allowed to get up

brought out in the address was that touching on the cold of Canada. The persistent wilful ignorance that prevails on this subject is incredible.

We can add that we personally experienced more actual pain from cold one morning in May this year in England than we did all last winter in Canada. On June 9th we met Mr. Vennor, the well-known artist. He has resided in England the last six years, and was a native of England. He says he detests this abominable climate; it is damp, dark, and cold, and the cold is of a more penetrating nature than in Canada. He longs for the clear, bright Canadian skies, and intends returning; the clear, delightful Canadian air exhilarates him.

A Scotch lady we met on the "S.S. Parisian" said she would defy them to find a more delightful winter climate than she had experienced for four years, 50 miles from Winnipeg. No doubt the poor must and do suffer until they are able to get comfortable surroundings.

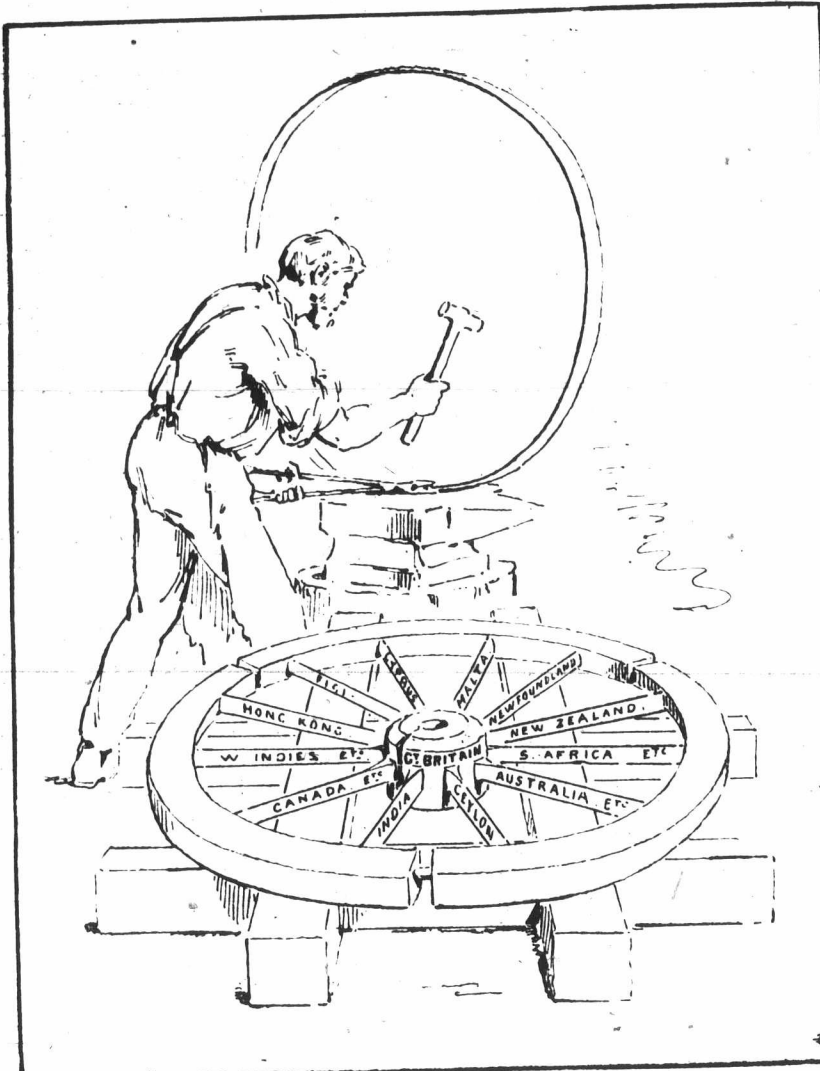
Mr. Begg says: "I suffered more from the damp raw cold of the city of London last winter than I ever did in North-west Canada during my long experience there."

It is to be hoped that this great Colonial Exhibition will correct the false impressions regarding Canada even yet entertained in many quarters throughout England, and that, instead of the country of snow and ice she has been represented to be, her true characteristics, her resources, her productiveness, and the beauties of her climate will become better known.

Sir Charles Tupper at the close of the address endorsed all the statements made by Mr. Begg.

After this Mr. Begg gave a series of interesting views, after which the meeting closed.

These meetings are to be continued, and we have no doubt that, if proper management prevails, untold blessings will be the result.



1—THE HUB OF CREATION—FINISHING TOUCHES OF THE GREAT WHEEL.

meals after Canadian fashion, and at Canadian prices, Canadian dining-rooms would monopolise the trade. Even the cheese procurable under the name of Canadian cheese was such as Mr. D. Leach, or Mr. Geary, of London, would pronounce "culls," because neither of them ever make such inferior articles. He gave great credit to some of the officials, but condemned strongly the action of others who acted dictatorially on subjects of which they were in total ignorance.

The Emigration Meeting was held immediately after the Trade Meeting. The Marquis of Lorne presided, and Mr. Begg read a long and interesting address concerning the Great Northwest, showing its gradual development and the great prospects before it.

Perhaps one of the most important points

OUR ILLUSTRATION.  
NO. I.

The British Empire is here represented as a wheel, the hub of which is the mother country, and the spokes some of the more important of the various colonies comprised within the Empire. Wise legislation, and a strong and kind national sentiment, have bound the parts together into one grand Empire; and it is in the very hub of the wheel that any serious flaw is to be found. The Irish question is the present source of weakness, and we hope that soon the Imperial Parliament may solve this matter in such a way as to render the wheel of the Empire one solid complete whole, banded together by the bonds of government for the national and individual welfare. Put your shoulder to the wheel.

CANADA.

(Written for the FARMER'S ADVOCATE.)

Mirrored in those mighty waters,  
 In that chain of lakes sublime,  
 Bards prophetic see an empire  
 Struggling in the womb of Time.  
 Fraught with many a stately haven,  
 Where her gay rigged Argos ride;  
 Marts o'erflowing with the treasures  
 Teeming from her champaign wide;  
 Where the brave Canadian woodman  
 Erst made groves primeval ring,  
 While to rear his humble roof-tree  
 Prone he laid the forest king;  
 Stand proud triumphs of the cunning  
 Handed down from Goth and Greek,  
 'Neath the pure Canadian azure;  
 Some with tongues harmonious speak—  
 How, through lapse of many ages,  
 From that first lone pilgrim band,  
 Sprang a race of wealth unbanded,  
 Other proofs through time shall stand;  
 How the fathers taught the children,  
 As they fought their arduous way,  
 Still for fight and kindly leading  
 At the great white throne to pray.  
 Long as Erie's falling waters  
 Shake Niagara's wave-worn shore,  
 Prosper England 'yond the ocean,  
 Still increase her golden store.

The Farm.

A Po in Grain Culture.

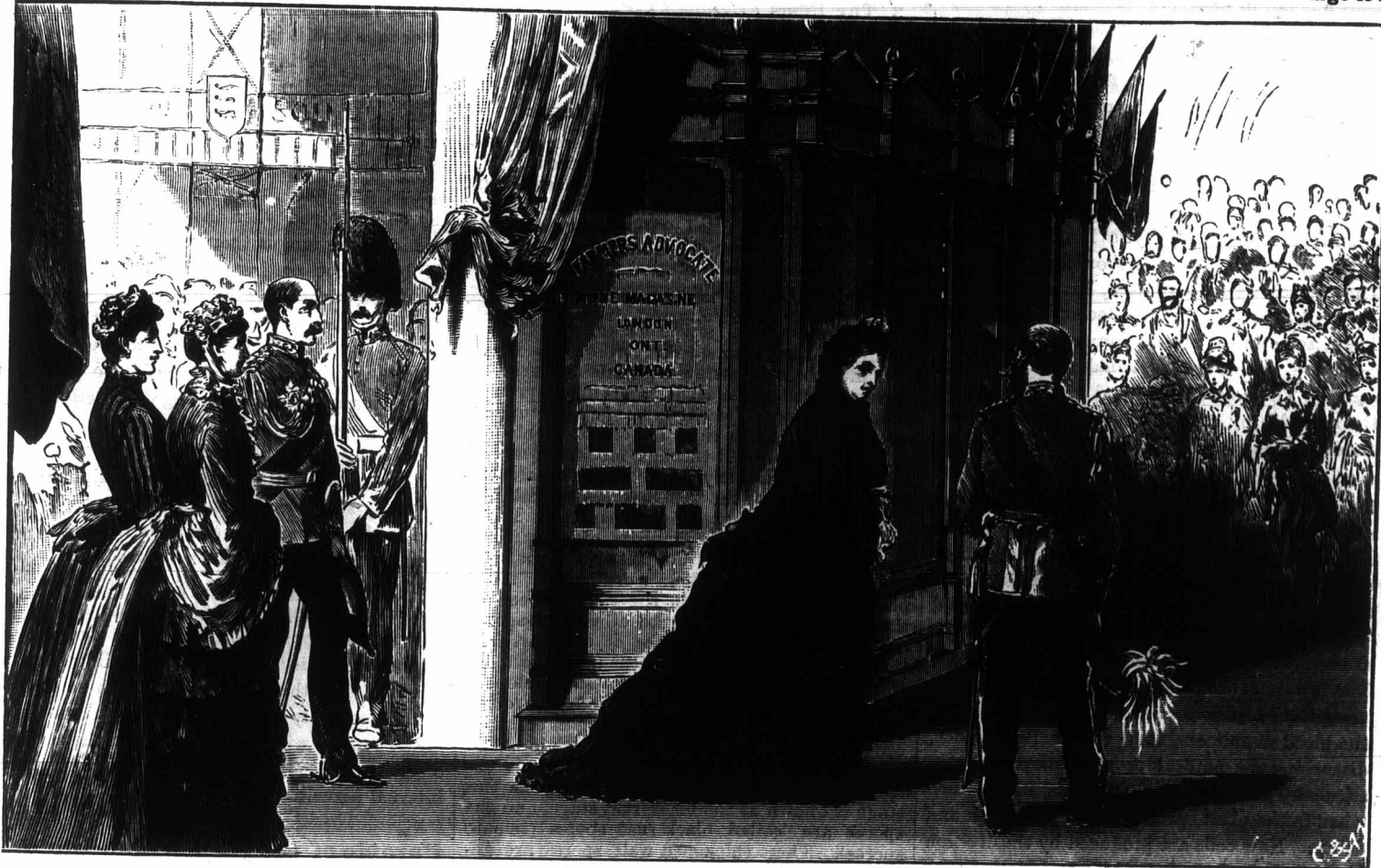
Various factors influence for better or worse the character of our grain crops, both in quantity and quality, such as temperature, humidity of atmosphere, condition of soil, amount of plant food, character of seed, etc., says C. S. Plumb, of the N. Y. Experiment Station. Some of these factors can be regulated, others not. Perhaps the one condition most subject to our control is that of the character of seed. Seed-breeding is none the less necessary than in stock-breeding. Poor parents produce weak progeny. Like produces like.

In 1883 several heads of wheat were selected as the best heads from several superior plants. Two of these heads were composed of eighteen

large to give an equal quantity of weight.

In the fall of 1885 I planted 1000 selected large seed of Clauson wheat and 1000 selected small seed of the same variety. All the conditions excepting quality of seed were as nearly alike as I could secure. In every respect the plants produced from large seeds are superior to those from small, being three times as large, strong and stocky. It is a most striking instance of the power of selection.

My point is this, though not a new one. If our farmers will give more care to the selecting of the best seed they can find in their fields, there will be a decided increase in crop. The longest, though without doubt the best method, is to go into the field just before harvest and select a suitable number of the most desirable heads to be found, or the finest plants obtainable. When the area to be sown is large it is



II.—HER MAJESTY THE QUEEN ENTERING THE CANADIAN COURT.

OUR ILLUSTRATION.  
NO. II.

At the opening of the Exhibition, we had our artist by our side, so we had the accompanying illustration made to show the real occurrence as accurately as possible. Originally our exhibit was close to this spot, but it has since been removed, or all visitors would have been able to locate the spot where our Queen first greeted Canadian exhibitors and representatives. A tumultuous applause burst forth upon her entrance into the Canadian Court, in which we joyously and cordially took part. Her Majesty gracefully bowed acknowledgments for the right royal reception which she received.

Hog Cholera is raging in Illinois.  
 We cannot have better farming without adopting a more intensive system.

breasts each. The best heads produced from this seeding contained twenty-two breasts. The grains from these heads were planted in 1884, and the best heads produced twenty-five breasts. The selection gave a pronounced improvement from the beginning up to the last observation obtainable. The grains were noticeably larger, the heads long, compact and full, and the plants stout and strikingly stooled.

In 1885 I selected from hullless oats a number of the smaller, inferior seeds, and a quantity of large, strong ones. Not only were the plants from the seeding made strikingly different in vigor, but at the end of the season there was a noticeable difference in the weight of the progeny of the two kinds of seed, 10,000 of the small weighing over an ounce less than any equal number of the large; or taking forty bushels as a yield for an acre, it would require 10,664,000 more grains of small seed than of

advisable to set aside that portion of the field presenting the best appearance, all things considered, and have this threshed separately from the rest, and then grade this out and use only the best seed for planting. The latter method is not at all impracticable. When we consider that our wheat fields only average but slightly over eleven bushels per acre, while those of England average over twenty-eight, we ought to seek a reason for this deficiency and aim to improve by using such remedies as come within our power. Plenty of good manure, laid on thick, is the one great aid to success in the growing of crops, and coupled with strong, excellent seed, these two form a team, the real strength of which but few farmers, I regret to say, appreciate. Wet straw makes poor manure, and mouldy corn and heated wheat serve as poor seed. There is no danger of aiming too high in securing the best development from seed to fruit. The real danger comes from persistent low aiming.

### A Study of Fungi—Bacteria, Rusts, and Mildews—Prevention and Remedies.

There are numerous microscopic plants embraced under the name of fungi, which differ very much in their structure, their methods of reproduction and nutrition, and their habits of life. It is little use to say that a certain affection in a plant is caused by a fungus, for there are many varieties, each requiring separate treatment.

Fungi are divided into three groups, viz., Saprophytes, Parasites and Parasite-Saprophytes. Saprophytic fungi are those which feed on dead or decaying vegetable matter, such as moulds, toadstools, puff-balls, etc. They never feed on living tissue, so that the growers of healthy trees need not take alarm. They abound in decaying timber.

Parasitic fungi, on the other hand, feed on the living tissue of plants and animals, penetrating it and appropriating its nutrient juices, lowering the vitality of the plants or animals on which they live, or causing their death. The parasite dies with the host on which it feeds, and there the life of the saprophyte begins.

The Parasitic Saprophytic fungi are saprophytic in habit, also more or less parasitic. They attack weakened tissue, hastening its decay, and then feed on the decomposing mass. They sometimes attack apparently healthy cells, and should be regarded as a source of alarm. The destructive fungi are classified by their modes of reproduction, and may sometimes be identified by examining a single spore.

1. BACTERIA.—These are practically the lowest in the scale of the fungi families, and are probably the minutest of living organisms. All bacteria are not harmful; it is they which cause the decomposition of vegetable substances, changing organic matter to nitric acid—an essential ingredient of plant food. They are composed of single cells or a chain of cells. The injurious bacteria live by absorbing nutriment from adjacent bodies. When existing in the blood of animals, they absorb its essence, disturbing the natural proportions of its constituents, or of the constituents of the cell when in the plant, producing fermentation and decay. New cells are produced by the division of old ones, and the work of reproduction thus goes on with great rapidity. In 1880 it was discovered by Prof. Burrill that bacteria were the cause of the blight in the apple and the pear, and the disease is said to be analogous to small-pox in man and anthrax in domestic animals. When the juice or gummy matter of an affected apple tree exudes, being dried by the winds, the bacteria are wafted great distances and in this manner the blight spreads.

2. MILDEWS.—These belong to a higher organization of microscopic plants, differing very widely from the bacteria. They are related to the potato-rot fungus (*Peronospora*), described in a recent issue of the *ADVOCATE*. The mildew plant consists of slender, tube-like, branching threads which penetrate the tissues of its host, branching in every direction, and gathering nourishment from the living cells. Many of the threads send out root-like branches. The following is the method of reproduction: Filaments grow out to the surface of the plant, pushing their way through the

breathing spores into the air. The ends of these threads swell, forming roundish spores, and fall on the ground, or are wafted in all directions by the winds. When they fall upon the leaves of a species of plant suited to the fungus, they germinate and multiply very rapidly, providing the necessary conditions of warmth and moisture are present. There are also "Black-fungi," being hardened growths, exemplified in the black-knot of the plum and the cherry. The spores of these are wafted by the winds, and are conveyed great distances by birds and insects. They are reproduced by tube-like threads which penetrate the tissues of their host. Other Black-fungi are the strawberry rust, spots on the leaves of the horse-radish, the parsnip fungus, beet rust, the dry-rot fungus of the grape, the bean fungus, and apple leaf blight.

3. THE RUSTS (*Uredineæ*).—These are very varied in their character, and their life-cycles are very complex. Prof. Bessey, in a paper read before the American Pomological Society, makes the following allusion to the rusts:

In the most complete species, there are no less than five distinct kinds of reproductive bodies produced. There is first the cluster-cup stage of the fungus, consisting of little cup-shaped structures filled with orange spores. With these structures there are usually others of a flask-shape (spermatia), whose function is entirely unknown. The orange colored spores known as acidiospores, germinate readily, and the filaments developing from them bore into the new hosts; from this new growth there are produced a little later many groups of stalked spores, each spore being rounded and supplied with a stalk double or treble its length. These burst through the epidermis of the host, and as they form reddish patches, this is known as the red-rust stage, and the spores are red-rust spores (uredospores). These are here the particular elements of contagion; they are blown freely from plant to plant, and in warm, damp weather germination takes place at once, resulting in the rapid spread of the disease. This production of red-rust spores goes on as long as the tissues of the host and the other controlling conditions are favorable, and then another kind of spore is developed. This fourth spore is thick-walled, and often dark colored. It is frequently two or more celled, and is always provided with a little stalk. The dark color of the spores gives the spore-clusters a dark appearance; hence this stage is known as the black-rust stage, and the spores are called black-rust spores (teleuto spores). These thickened wall spores are admirably adapted for resting spores, and we find that in fact they are such. In the common rust of wheat the black spores remain quiescent upon the rotting straw until the advent of the warm, wet weather of spring, when they begin to germinate. In germination they send out a slender thread which soon produces a few excessively minute spores (sporids). The latter (the fifth of the series of spores), on account of their minuteness, are readily carried by winds, and are thus disseminated. When the sporids alight upon a moist surface, they germinate, and if the surface is a leaf of the right species, the young parasite enters and begins anew the round of life.

Many species of rusts, according to Mr. Chas. Plowright, abridge their life history, the cluster-cup stage sometimes being omitted. The writer goes on to say that—

"When the black-rust spores germinate in the presence of very young seedling wheat plants, the sporids of the parasite have sufficient strength to penetrate the tender epidermis of the young wheat leaves. When the wheat seedlings are older the epidermis becomes too tough and hard for the delicate fungus thread to penetrate. It can, however, gain access to

the tissues of the young barberry leaves, and here it grows and gains strength to produce the cluster-cup spores mentioned above. If we look over the several stages of rust we observe that, as in previous fungi, there is a non-sexual production of spores which marks the contagious period of the parasite. This is the so-called red-rust stage, and here the rapid spread of the rust takes place. A single affected plant in a wheat field may, under favorable conditions, become a centre from which the parasite may spread to all parts of the field, just as a single small-pox patient may become a centre of contagion in a neighborhood. In the black-rust stage there is no contagion, but it is more dangerous than the red-rust spores, for it is the means of carrying the parasite from year to year and from crop to crop."

The writer says that the knife is the only remedy. The diseased leaf or fruit or limb or root must be cut off, and in extreme cases the whole tree, or even the whole orchard, must be cut down, dug out and burned up.

With regard to preventative measures, the writer says that it is almost impossible to prevent the spreading of the disease after the period of contagion is reached, when the fungus produces a great number of spores. At this period, every orchard in the neighborhood is in danger, but before it the fungus is not contagious, and may be renewed. The parasite may be destroyed when the resting spores are produced, the fungus then being dead—such as the black-rust resting state in the case of wheat, the straw and stubble being affected. The dead leaves and twigs killed by the fungi of the preceding summer should be burned during the fall and winter in order to prevent the resting spores from causing destruction the following spring.

With regard to the application of poisons or fungicides, the writer recommends sulphur and the many sulphur compounds; iodine, salicylic acid, and borax and its compounds, applied in destroying the spores in the same manner as smut spores are destroyed by washing wheat in a solution of copper sulphate (blue-stone), or they may be applied to the growing fungus, as sulphur is applied to destroy the mildew upon rose leaves in the conservatory. These applications are only of use when they come into direct contact with the fungus upon the surface of the plant, and are useless in destroying the internal parasites.

### Parable of the Farmer and the Ox.

BY CORNY SPARKINS.

"You've got to go; you're a 'scrub.' I'm sorry for it; but the law of the land demands it. You must go, you brute."

These words the farmer said to his ox, to which the latter replied:

"What! me go? Me, why, I have served you faithfully under the yoke for years, and now just when I am beginning to imagine what a delicious piece of roast I shall furnish you for your Xmas repast, you thump me with such cruel words that I cannot fatten. The pleasing delight of having served you so faithfully has already begun to cover my bones with wholesome and tender flesh. You sorry, you; why, you could have sat upon that law, but you didn't want to. O base ingratitude!"

"'Tis too true," replied the farmer; "but I neglected it too long. There is no use in bawling over it; the government officials will be here to-morrow morning, so be prepared for slaughter."

The doomed ox spent the night in ruminating his condition, and the affair preyed so heavily upon his mind that he lost all heart and flesh. Towards morning, however, he turned into a revengeful mood, and meditated escape from the grasp of the law. In the morning the farmer found the ox nothing but skin and a massive frame of angular bones.

"Are you prepared to die?" said the farmer. Just at this juncture the ox began to inhale huge draughts of air, and continued to do so until the arrival of the officials, when he became so much swollen with air that they passed him by, thinking him to be a registered animal. The farmer felt astonished at the ingenuity of his ox, and began to feel true sorrow for him. However, when the ox regained his previous proportions, the farmer rebuked him for his deceit, to which rebuke the ox replied:

"There is nothing unfair in war. The enemy shouldn't complain if you use their own class of weapons. Besides, pure compressed air is a more wholesome beverage for man than diseased blubber, and far cheaper. I pray you, my good master, just let me fatten myself up for the Government fat-stock show at Christmas, and I will make amends for any grudge you may have against me."

With mingled confidence and pity, the farmer gave his consent.

Meanwhile the ox lived on two meals a day, viz., wheat straw for breakfast and air for supper, and, although the thought of competition caused him many a pang, yet on show-day morning he felt confident of success. There were thirteen steers in his class, and when the ox gazed upon their massive proportions, resolving upon the red ticket, he swelled himself up until his hide was just the thickness of the skin of a soap-bubble, and another draught of air would have caused a dangerous explosion. His rounded form and gigantic frame were the admiration of all the judges, and the eyes of the vast crowd were all fixed upon him.

The owner of the ox now hastened triumphantly out of the ring with his red ticket held aloft in one hand, flinging his hat into the air with the other, amidst the vociferous "hoorahs" of the rejoicing crowd.

After this great victory, the farmer felt in his conscience that he had run a great risk, and told the ox that the block was thereafter to be made the crucial test, in which case he could not see what other tactics could be adopted.

"When that time comes," said the ox, "you will find my ingenuity equal to the occasion."

The profit of a crop is the last few bushels and the profit of a fat animal is the last few pounds.

If you would give your horses a good night's rest, give them a good cleaning up every evening. They will feel and rest better by having the sweat all rubbed off, and everything cleanly about them. It will pay to attend to these matters even if you have to quit work a little earlier to do it.

G. J. Kromer, Cape May Co., N. J., has been very successful in breaking a cow of the habit of sucking herself by painting the teats with mucilage, and then dusting them with pure capsicum (red pepper). It will not sicken the cow, but she will be entirely satisfied with one taste of those teats.

**PRIZE ESSAY.**  
**Agricultural Exhibitions as Educational Institutions for the Farmer and His Family.**

BY S. A. LAIDMAN, BINBROOK, ONT.

*What are agricultural exhibitions held for?*

This is a question that is at once suggested by reading the above heading of this paper, and a question that very few take the trouble to answer. Well, let us see. Viewing the exhibitions as they are held and conducted at present, we find that the principal attraction is the trotting and horse-racing that have become so prevalent at our shows. Most of the farmers who take stock and produce to the shows take them for the purpose of trying to win a little money with the prize, and also to let their neighbors see what they have got. But it is not the farmer alone who is benefited by the show; for upon visiting any of our fair grounds we find them almost covered with an innumerable number of jewelry and pea-nut stands, while quack doctors and noisy side-show men make the air ring, again and again, with their jargon, as if the exhibition had been got up solely for their benefit. Show day is the time for the farmers to get together and talk over the events of the next election, or deliberate on the good and bad points of a neighbor's horse. This seems to be what the fairs are for chiefly, but we find a few farmers who really attend them for a nobler purpose—that of getting a little information concerning their business. But, strange as it may seem, there are only a few farmers who go for the purpose of being educated, while the others get about as much benefit from them as a man would from the FARMER'S ADVOCATE when he refuses to read it.

*Whose fault is it that our exhibitions are not more educational to the farmer?* It is very hard to tell exactly whose fault it is, for it seems to be nobody's in particular, and yet it is partially the fault of almost everybody. In the first place, it is the farmer's lack of interest in his business, for if he would only take the interest in his work that other people take in theirs, he would add greatly to the success of the fairs, besides aiding himself. Ambitious jockeys and horsemen, who each thinks he has the best horse, are greatly to blame for the present state of affairs; and the way in which the prizes are distributed tends to lower rather than raise the standard of our exhibitions. For instance, we find on some of our prize lists that fifty or seventy-five dollars is the prize given for the best trotting horse, while not more than two dollars falls to the lot of the man who has the best two bushels of wheat. Now, when this is the case, we can scarcely call our shows *Agricultural Exhibitions* at all, for all the attention is paid to the animals, and scarcely any to the real agricultural part. It would be better to call our fairs "fat stock shows" and be done with it, for the majority of them come nearer to that than to anything else.

*How might a change be made so as to make them more educational, and what would be the educational advantages derived from them?* In the first place, let every farmer take a deep interest in the exhibition and do his best to make it more beneficial to his fellows. Then, lose no time in getting up a feeling against so much trotting. Why this has so much importance attached to it we can not see. Of what use are

trotters to the average farmer? None at all; and I can see no reason why such large prizes are given to trotters and such small ones to draught or general purpose horses. The method of giving prizes should be reversed, the large prizes being given to animals that are some use in the world, and let the others take care of themselves. The general purpose horse is the one for the farmer, and should receive the most attention at our fairs. Then it would be better if all the quack doctors and side-shows were banished entirely from the grounds, for they only serve to block up the grounds and keep people from seeing more important things, and, besides, the majority of them turn out to be frauds after all.

Then let the farmer notice the peculiarities of the different breeds of horses so that he can tell which would be the best adapted to his locality. A farmer on a stiff clay soil would not do a great deal with a span of ponies; and if he would only notice the different breeds of horses at the fair, he could tell which would be hardy, easily kept and adapted to his farm. Again, when he visits the cattle he should take particular notice of them, so that if he had a good farm for dairying he might select those cattle which would be likely to give the best returns, and if he intended to raise cattle for beef he could also make a selection in that particular line; or if he wanted a general purpose cow, here is his chance to select, for when you have a large herd of the same breed of cows you can at once see their leading characteristic much better than when only a single animal is examined. Similarly with sheep and pigs. Let him notice the breeds suited to his wants and locality, and run into that line of stock as soon as possible. Next, let him step into the hall and there look at the fruits and see which are the most profitable for him to raise; and if he happens to see some of the exhibitors about, he may, by asking a few questions, soon get a great many hints on their successful cultivation and preservation. Also among the root crops he may find out what kind of soil is adapted to the different crops, and the manure that each one requires.

Suppose a farmer wishes to buy a new reaper or mower and has not yet decided what kind to get. Let him go out among the machinery and examine the different makes of machines. He will then form an opinion as to which one he wants; and will ask persons whom he meets how such and such a machine works, and can make a purchase to suit him. Or if it be plows or harrows that he requires, here is his chance to make a selection.

The agricultural exhibition is chiefly for the farmer, but the family may also receive a great deal of benefit if they only will. The boys may follow the directions given to the father; and the wife and the girls may find a great deal among the fancy work to interest and instruct them. They will see patterns of fancy work that they can look at and copy when they get home, or they can see some nice way of putting up fruit; or perhaps in a chat with some exhibitor of butter they may learn of a better way of treating their cream to make good butter. There are many other ways that the family may be educated at the exhibition, but no more need be mentioned.

Then there are many ways in which our exhibitions may be improved. For instance, let

prizes be given more for agriculture proper, as for the best grain raised by the use of some artificial manure; or give prizes for cattle fattened on different kinds of foods, so that the farmer may see which is the best food to give to fatten his cattle.

Another thing that could well be attached to our shows, and one that would have good results, would be for the directors to get some professor of agriculture to deliver a public lecture on the evening of the exhibition, on some department of agriculture. If this were done and a good speaker were to deliver an address on some subject, as—"How best to destroy weeds," "How to destroy insects injurious to fruit or Canadian forestry," we believe that such an impulse would be given to agriculture in this province that our fertile Ontario would at once go far beyond all other countries and surpass even her present self as an agricultural district.

Agriculture after all is the business and the only one that this Dominion of ours is to become yet more famous for. We must have food and clothing, and that is really all any person gets, and these come from the farm.

It is the farmer that feeds the world. It is on his bounty we must rely. Then let us keep our eyes open to his value, and assist him all we can. Let the farmer keep his eyes open when he attends the exhibitions, and be on the alert for everything that will promote his cause. If he will do this and then make use of what he hears and sees, he will receive an education that will be of more value to him than silver or gold, for no one can take it away.

#### Salt Problems.

A letter appeared in our last issue from the pen of Mr. John Ransford, Clinton, Ont., which was undoubtedly read with concern by our farmers. He exposes the fraudulent practice of selling underweight, contending that a barrel of salt should weigh 280 lbs. net, or 300 gross, that a good deal of salt weighing from 200 lbs. upwards per barrel gross is being placed on the market, and that as salt is shipped by the 100 pounds and not by the barrel, the fraudulent dealer gets more barrels of salt for less freightage charges, and sells at the same price per barrel as the honest dealer, thereby realizing a double profit, for he also pays the maker a lower price for the light salt. The farmer, it appears, pays the same price for each barrel of salt, no matter how many pounds it contains. He calls upon the government to fix a standard, to enforce the branding of the maker's name on each barrel, and urges the farmers meanwhile to weigh their salt before loading it on their wagons.

In further elucidation of the subject, we publish in this issue a communication from Mr. Joseph Kidd, Goderich, Ont., in which he claims to expose another fraudulent practice, viz., the sale of adulterated salt manufactured from impure brine, whereby the farmer gets too much weight for his measure of salt.

If there is a little of truth in the assertions or insinuations made by any one of these correspondents, the matter ought to be thoroughly investigated, and legislative action should be taken at the earliest possible moment. Our farmers should not let the guilty parties go unwhipped of justice.

There are also other problems connected with the salt business which demand immediate solution. At present there is a boom on different brands of salt. Each dairyman has his own fancies and prejudices, and we have never been able to ascertain upon what basis they form their conclusions. Some contend that the Liverpool salt is the "purest," while the representatives of Canadian brands contend that there is nothing superior to the home-made article, which has also the advantage of cheapness.

We emphatically protest against these hasty conclusions, and unless these so-called authorities can give some reason for the prejudices that are in them, we must look to other sources for a basis to form our judgment. It is comparatively easy to judge the physical qualities of salt, such as its grain and its soluble property, but this by no means settles the question. We must depend largely upon its chemical composition, but the number of analyses at our command is far too limited. Some agents tell us that their brands are chemically pure. Beware of them; they do not know what they are talking about. If it is possible to make salt chemically pure, that is the pure chloride of sodium, it would be so expensive that it could scarcely find a market.

It is difficult to compare the analysis of the various brands of salt made by different analysts; for the impurities are given in different forms of combination. For example, some give them in the form of insoluble matter, lime, sulphates, and sulphuric acid, while others divide them into chlorides of calcium and magnesium, and sulphate of calcium. These are the leading impurities, although there are also usually traces of other foreign matter present.

Now let us examine the physical properties of these impurities. The sulphate of calcium (land plaster), as every farmer knows, is not soluble in water, and it attracts moisture readily. This property of absorption is still more inherent in the chlorides of calcium and magnesium, so that a simple and tolerably accurate method of judging salt is by the quantity of moisture it absorbs, aided by the measure of its solubility. If a handful of salt exposed to the air absorbs much moisture, it is unfit for use.

Our government took a step in the right direction when it had several brands analyzed at the Ontario Agricultural College, but it classified all the brands, ten in number, as Canadian and Liverpool salts, just as if it was afraid to expose any of the fraudulent manufacturers. The name of the maker should be attached to each brand analyzed. We give the analyses herewith as made by Professor James:

ANALYSES OF BRANDS OF SALT.

Number.	Brand.	Order as to purity.	Sodium chloride.	Water.	Calcium and magnesium chloride.	Calcium sulphate.	Residue.	Total impurity.
1	Canadian	2nd.	97.66	0.49	0.13	1.63	0.09	1.85
2	Canadian	4th.	97.11	0.71	0.23	1.87	0.08	2.18
3	Canadian	8th.	94.38	3.29	0.47	1.93	0.05	2.45
4	Canadian	5th.	97.18	0.58	0.24	1.95	0.05	2.24
5	Canadian	6th.	96.61	1.11	0.27	1.86	0.15	2.28
6	Liverpool	1st.	97.12	1.09	0.26	1.45	0.08	1.79
7	Liverpool	3rd.	97.20	0.75	0.25	1.72	0.08	2.05
8	Liverpool	7th.	96.93	0.69	0.31	1.88	0.19	2.38
9	Liverpool	9th.	96.47	0.94	0.23	2.26	0.10	2.59
10	Unknown.	10th.	93.00	1.79	0.55	3.70	0.96	5.21

Here we find that there is a close relation between the percentage of water and the per-

centage of impurities, although the condition of the salt with reference to exposure to moisture before analysis is not stated. We find, moreover, that the difference, if any, between the Canadian and Liverpool salts is very trifling. The figures in the "Residue" column indicate the insoluble or difficultly soluble percentages. The average impurity of the five Canadian brands is 2.220, against 2.203 of the Liverpool, these figures being slightly in favor of the Canadian, but the Liverpool brands have been found to be a little ahead in fineness and uniformity of texture. The Professor also states that the Liverpool salts dissolve a little more rapidly, owing to the shape and size of the grains, which gives them a slight advantage for some purposes—such as butter for immediate consumption.

We do not contend that these few analyses settle the matter, but they should be continued, and no time should be wasted in analyzing brands the manufacturers of which are omitted from consideration. If the government officials had got their hands upon one or more of those "slimy adulterated stuffs" mentioned by our correspondent, the desired end would have been accomplished at once. Will the government be so good as to investigate the name and address of the manufacturer of No. 10 brand? If so we will give the gentleman a free advertisement.

#### Harvesting Corn and Corn Fodder.

The securing of the corn crop in the Southern States, where corn and corn fodder are the mainstay of the farmer, has been reduced to a science, and a few hints as to Southern methods will be of great service to farmers in Canada.

The corn is planted in rows about three feet apart, and cultivated during the season in the ordinary way. Just before the seed begins to ripen, and while it is yet in the milky state, the tops are cut off a short distance above the first joint over the ear, leaving the leaf which is attached to the ear untouched. A man walks between two rows cutting the tops off each row as he goes along, using a large, thin-bladed knife, and throwing each handful, consisting of five or six tops, crosswise between adjacent rows. If the rows, for example, lie north and south, he throws two rows towards the east and two towards the west of the rows which he is cutting, thereby making a swarth of four rows.

At this stage of growth the tops, both leaves and stalks, are very tender and juicy, and when properly dried make excellent food for all classes of farm stock. The swarths are allowed to remain on the ground for a day or two, according to the state of the weather, until they are thoroughly dried, and then the farmer goes to work at four o'clock in the morning and binds them into sheaves. If the binding is done while the dew is on the fodder, bands can be made from the loose leaves which may be found lying on the ground, but when the dew begins to dry off, the binding may be continued, though less effectually, by using the tops for bands. The sheaves are then carried by hand to roads made through the field, where they are put into the wagon and conveyed to the stacks. Sometimes the whole family go to work early in the morning, and it is astonishing what a large quantity of sheaves can be bound before the dew is off.

But this is not all. About a week or so later, just when the lower leaves of the corn begin to turn yellow, the family are again found at work stripping the leaves from the corn stalks, not leaving a single leaf, except the one attached to the ear. At this stage the leaves are quite succulent, and make excellent food. They are thrown crosswise between the rows in the same manner as described in treating the tops, and they are also cured in the same manner.

The field is now seen as an army of bare corn-stalks, with the ears of corn projecting from the tops. There is little or no perceptible shrinkage in corn caused by the removal of the tops and leaves, and the crop is much more easily harvested than when the leaves and tops are allowed to remain. The corn is harvested late in the fall, the stalks being left standing. The farmers have implements which, when drawn over the field by teams, roll the stalks down flat and cut them into fragments. This is certainly a more sensible way of disposing of them than the ordinary manner; the whole system is an economical one, although it appears to the untutored to involve a considerable amount of labor.

**Does it Pay the World to Grow Meats?**

Considered merely from an economic point of view, says a writer in the Tribune, it may well be asked whether the use of flesh food is profitable to the world. That the manure made by stock will increase the fertility of the farm, may be granted only with some limitations, for the animal can, it is quite clear, give to the soil no very considerable quantity of matter which it has not first received from the earth. The dairy farms of the East have become so impoverished by continual grazing and cropping that it has been found necessary to add largely to the animal fertilizers left by the herd, to enable the dairyman to raise good calves or other animals, although great quantities of food are brought from other farms for the cattle. It is of course true that there has been a profit in the live-stock business, but that by no means shows that meat-eating pays mankind.

It may be assumed that the average production per acre of corn will be forty bushels. This, with the grass, hay, or other necessary fodder, will keep a bullock on full feed for 160 days. At that rate ninety bushels of corn, the yearly product of two and a quarter acres, will be required each year for at least two years, or the equivalent of that time and quantity, for the production of the bullock of 1,450 pounds. Such a bullock, if well grown, will yield about 800 pounds of meat, fat, and bone, or an average of 160 pounds per year per acre of nutritious food, not taking fat and bone into consideration. It will be seen that this amounts to less than half a pound per day for each acre cultivated or grazed. For this the consumer will probably pay from six to eight cents, which certainly seems to be a small price for a great deal of work.

The land required for the support of a bullock should produce 5,000 pounds per year of meat free of offal, or 10,000 pounds of food at least as nutritious as fresh beef, pound for pound; or it will in two years yield 4,500 pounds of wheat; or in a like time 6,000 pounds of oats; which will be equivalent to

thirteen and three-fourths pounds of corn, five pounds of wheat, or six and one-half pounds of oats per day. Or the two and one-half acres may be made to produce each year 30,000 pounds of potatoes, or eighty-two and one-fourth pounds of food per day. The curious might go on through the list of best-known grains, vegetables, and fruits in this way until they would cover the entire list, and find few, if any, which do not for a given amount of labor yield a much larger return in nutrition than is obtained by raising beef, pork, or mutton.

**Chat about Couch Grass.**

A correspondent from Strasburg, Ont., sends us a "weed" to be identified, of which we present the accompanying illustration, made from a photograph of the natural size. Quack grass, in some of its varieties, is well known in many parts of Canada, but as many of our readers are unacquainted with it, we take this opportunity of giving them warning, it being one of the most persistent plants that has ever infested a soil.

It enjoys a large number of euphous names, amongst which may be mentioned Couch-, Quack-, Quack-, Twitch-, Quitch-, Witch-Grass, etc.; but it is known to botanists as *Triticum repens*, it is therefore closely related to the wheat plant (*Triticum vulgare*), and, according to the natural botanical classification, it is also related to chess, although the artificial school has classified the latter as *Bromus secalinus*. It will thus be seen that couch grass is excellent food for stock, and it is extensively used as such in many European countries, the roots, or rather the runners, being also used in some instances as food for man. By us, however, it is regarded as a "weed" because it is hard to kill. In our fertile imaginations, nothing is fit for food except that which is pampered half to death.

It propagates itself like the Canada thistle—both by seed and root—and the methods of treatment are for the most part identical; but it has even greater tenacity in the soil than the Canada thistle. It thrives in any soil and in any climate in which the ordinary agricultural plants grow. Unlike thistles, mustard, and other tenacious weeds, couch grass steals its way through the fields, as it were, it not being readily observed until the mischief is accomplished, except by farmers who are acquainted with its appearance and its habits of life. When once in the field, it is most effectually propagated by its subterranean runners. Like those of the thistle, the running stems are provided with numerous joints, out of which buds develop, and each of these will grow under very unfavorable circumstances, even if the runners are broken into many fragments.

No fixed rule can be given for its extermination under all circumstances. If taken in time, when a mere patch exists, quack can be exterminated with the hoe, by oft-repeated cutting beneath the surface of the ground, or

the same object will be accomplished by a heavy dressing of mulch, which will smother the weed. The work must be thoroughly done; for half-killing seems to give it double life. On a large scale, summer-fallowing is usually the promptest and most effective method, but here the farmer must exercise his judgment. Where there are many stumps, stones, roots, or fence corners, the summer-fallow cannot accomplish much, for a very small nucleus of growth will make a big spread in a short time. In such cases, a hoe-crop, especially corn, will prove the most effective. In any case, the plant should not be permitted to see daylight; for where there is no breath, there will soon be an end of life.

Sometimes it would be a matter of economy to take off one or two corn crops instead of summer-fallowing, hoeing and cultivating thoroughly and repeatedly. But this is a question of debit and credit; the extra labor incurred in cultivating and hoeing the crop (or crops) of corn may sometimes pay for a good summer-fallowing. On small patches the roots of the grass may be gathered and composted, which will facilitate the destruction, but this is impracticable on a large scale, as it involves too much labor. After the first plowing, deep cultivation is not necessary, the gang plow and the cultivator then being sufficient. It is not desirable to manure heavily while the work of destruction is going on.

If the seeds are allowed to ripen, look out for a spread the next season. If the products of the field are fed to the stock, the manure should be thoroughly fermented in order to destroy the vitality of the seeds. Many seeds will germinate even after passing through the bowels of the animal.

It is a mistake to suppose that meat is absolutely necessary during the summer months when there is so much work to be done on the farm. Of course, to leave off eating meat without making a radical change in your ration is entirely out of the question. If meat must go, potatoes must go too, for the former furnishes the nutritive elements and the latter the necessary bulk, so that foods must be substituted which go to neither extremes, that is, neither too concentrated nor too bulky. These conditions are fulfilled in fruits and vegetables in different combinations to suit the special characteristics of the individual. Animal foods need not be entirely abandoned, and they are found in a wholesome form in milk, eggs, and cheese.

Chemical analysis having pointed out that skim milk is rich in muscle-forming substances and corn rich in fat producing constituents, it was found to be correct in theory that these foods would fit well together for feeding hogs to produce pork of the first quality. Accordingly, many feeding experiments have been instituted to test the correctness of the theory, all of which have proved the economy of these foods in the production of wholesome pork. Professor Henry, of the Wisconsin Experiment Station, has conclusively proved their economic value by repeated experiments, and recommends the proportion of two pounds of corn-meal fed with three and a third pounds of skim milk. This ration contains a larger proportion of carbo-hydrates than German investigators recommend, and it is likely that, as a rule, a larger proportion of milk with less meal would produce equal, if not superior, results.



Quack Grass

### The Dairy.

#### Composition and Characteristics of Milk—How to Make Tests for Adulterations and Quality.

[From the German: Translated by W. A. Macdonald for the FARMER'S ADVOCATE.]

In order to thoroughly comprehend the natural and artificial characteristics of milk, the following points must be weighed:

1. A knowledge of the composition of pure, whole, unadulterated milk, and likewise of the skim-milk and the cream.
2. A knowledge of the practiced methods of adulteration.
3. An apt manipulation of the most approved methods used in the detection of adulterations.

#### I. PURE COW'S MILK.

Pure, unadulterated cow's milk is a pale white non-transparent liquid, of a pure, mild, sweetish taste, with a faint odor which reminds a person of the perspiration of the cow. It is fatty to the touch. A single drop remains on the dry finger nail tightly cushioned out and highly arched, and has opaque borders. It colors red litmus paper blue, blue litmus paper red, and so possesses amphotere reaction. It does not curdle by boiling. Under the microscope, an extraordinarily great number of small, strongly light-breaking globules are seen, in which form all the butter fat in the milk is suspended.

Real, normal milk has the essential property of a fixed specific gravity. It is heavier than water, when like volumes are compared. Placing the weight of a given volume of water at 1,000, the weight of an equal volume of milk from individual cows at 15° C. (59°F), will be 1,027 to 1,040; and a mixture of milk from several cows will have a specific gravity between 1,029 and 1,034 at 15° C.

Pure cows' milk has the following average percentage composition:

Water	86.23	} = 100.00
Dry substance	13.77	

The dry substance has the following average composition:

Fat	4.50	} = 13.77
Milk sugar	4.93	
Casein	3.23	
Albumin	0.50	
Mineral matter (ash)	.61	

The percentage of water does not vary very much. With individual milkers, it varies between 85 and 89%; with mixed milk, 86-88%, the percentage of dry matter thereby varying from 12 to 14 percent.

The normal milk from individual cows may fluctuate, in fat percentage, between 2.5 and 7%, the general variations, however, being between 3.5 and 5%. Unadulterated, marketable milk should not contain less than 3% of butter fat.

The milk sugar varies from 3 to 6%; in the milks in the markets mostly about 4 percent. It decomposes under the influence of a ferment, the so-called souring, bringing about spontaneous curdling, by which the casein mixed with the milk fat separates from the whey. The casein varies from 2 to 5 percent (average 3½-4%). When the clear whey is heated, another albuminous body separates, called *zieger*. The percentage of ash varies from 0.4 to 0.8%. It includes phosphates, chlorides, and potash, soda, lime and iron salts.

After standing for some time, there appears on the surface of the milk a dense, distinctly

marked layer of yellowish-white appearance—the cream. This consists mainly of butter globules which have risen to the surface owing to their greater lightness. It contains a much greater percentage of fat than the milk (40-70%); but the percentage of water is much less than that in the milk (22-74%). In suitable vessels, the cream ceases to rise after 12-24 hours. Good market milk should produce at least 10 percent of cream by volume in this time. Genuine cream should not produce less than 25 percent of fat, should be of a thin honey consistency, of a pure smell and taste, and should be as free as possible from mould and other fungoid growths. It is worthy of note that watered milk gives proportionably more cream than unwatered.

The skim or blue milk contains less fat and more water than the whole milk, and it is specifically heavier. It should not contain over 91% of water, the fat should not be under 1%, and the specific gravity varies between 1,032 and 1,040 at 15° C.

#### II. ADULTERATIONS OF MILK.

Milk must be regarded as adulterated—

1. When one of its constituent parts is wholly or partially wanting—unless the fact is stated at the time of sale; for example, skimming.
2. When some substance is added, which increases the weight or volume, thereby disturbing the proportion of the milk constituents; for example, water.
3. When some stuff is put into the milk for the purpose of giving it the appearance of purity, in order to make up for the substance extracted; for example, starch, meal, etc.
4. When it contains some constituent which is deleterious to the health of the consumer; for example, the milk from unhealthy cows.

The ordinary adulterations of milk are for the most part easy to detect. They consist mostly in partly abstracting the cream, or adding water, mostly both together. It seldom happens that a denser-making substance is added in order to compensate for the thinness of the milk; for example, starch, meal, gum, sugar, salt.

The following facts will be found very useful in determining the customary adulterations:

1. A higher specific gravity than 1,034, a low volume of cream (under 10%), a small increase in the percentage of water (over 88%), an appreciable diminution in the percentage of fat (under 3%).
2. A specific gravity under 1,029, showing much or little abstraction of cream, a higher than normal percentage of water, i. e., much over 88%, and a fat percentage under 3%, shows simply the addition of water, particularly when the milk skimmed shows a specific gravity under 1,032. The quantity of water added can be ascertained by the variations from the normal specific gravity—for each 0.03 under 1,029 one tenth water can be reckoned, or the percentage of water added can be ascertained chemically. By the latter method each percent of water over 88 may be regarded as 7% of water added.
3. A specific gravity within the normal range (1,029-1,034), or very little thereunder, with only a small percentage of cream, a much lessened percentage of fat, and a marked increase in the percentage of water, show that skimming has been practised, water at the same

time being added. The skim from such milk shows less than the normal value by the specific gravity determination.

4. A specific gravity near the higher boundary (1,034), or very little thereunder, a normal or very little increased percentage of water, with a small volume of cream, and a much reduced percentage of fat, with a normal specific gravity of the obtained skim-milk, show that skim-milk has been added.

5. A specific gravity near the lower boundary (1,029), or thereunder, an increased percentage of water, a low volume of cream, and a greatly reduced percentage of fat, with a reduced specific gravity of the obtained skim-milk, show that the milk has been adulterated with skim-milk, water at the same time being added.

#### III. METHODS OF DETERMINING MILK ADULTERATIONS.

The instruments used for the investigation of milk adulterations must be such that frequent determinations can be made in a short time. It must determine, in a simple manner, any single adulteration in a large mass of milk. In all tests for adulterations, the following rules should be observed:

1. The milk must possess the normal character judged by the sensible qualities, viz., color, smell, taste, and the nail test.
2. It must show an amphotere reaction.
3. Its specific gravity must lie within the normal ranges, viz., 1,029-1,034 for whole milk; 1,031-1,036 for half skimmed milk; 1,032-1,040 for skim-milk.
4. The percentage of fat in whole milk must not be less than 3%; in half skimmed milk not under 1½%.
5. When there is suspicion of adulteration by the addition of starch or meal, a few drops of iodine solution (iodine in iodide of potassium) should be used; the milk's turning blue will confirm the suspicion.

#### REMARKS BY THE TRANSLATOR.

The difficulty now to be presented is to ascertain the cheapest, most accurate, and most expeditious instruments for testing the quality of milk according to the above rules and principles. The question as to the best standard to be adopted for Canada may also arise. The analyses made of the milk of our breeds and grades have been far too limited to establish standards. The authority whose writings are above translated gives 4.50 as the average percentage of fat, and 13.77 of total solids; while another German authority, evidently taking the averages of breeds in other parts of Germany, adopts 3.40 for the fat and 12.35 for the total solids as the standards. The averages of many thousands of analyses taken from different parts of the world give 13.14 percent for the total solids and 3.98 for the fat. Boston milk (1885) gives 13.30 and 3.50 respectively, and the New York Dairy Commissioners (1885) give 13.73 and 4.21. The New York State law demands that milk containing less than 12 percent of solids and 3 percent of fat shall be considered as adulterated. In analyses made of the milk of 50 pure bred Shorthorns belonging to the St. Albans dairy herd, there was an average of 13.24 percent of solids and 3.59 of fat. The British Dairy Farmers' Association, in an average of several breeds and grades for eight years, gives an average of 13.50 percent for the total solids, and 4.08 for the fat. Pub-



He analysts in England have fixed upon  $11\frac{1}{2}$  and  $2\frac{1}{2}$  as the standards, but Dr. Volcker thought that a fairer average would be  $11\frac{1}{2}$  and 3.

Accurate tests for the adulterations of milk have been chiefly confined to large cities, but as chemical analysis has been too tardy a process, other methods have come into active use. The instruments have been so expensive that they have not come into general use amongst our dairymen, although greatly needed by them—both butter and cheese makers—and the instruments have been still less within the reach of our farmers, who could utilize them to very great advantage in testing the individual merits of their cows, by means of which they could breed up their herds much more rapidly. Any instrument which could expeditiously and accurately give merely the percentage of fat would be a great service to them, as few farmers like to go to the trouble of churning each cow's milk separately in order to ascertain the best butter-producers in their herds, the volume of cream being no reliable guide.

The best instruments for the purposes above named are the Feser Lactoscope, the Chevalier Creamometer, the Quevenne Lactometer, the Greiner Thermometer, including a bottle of iodine solution, and a bottle of red and blue litmus paper. These are all neatly fitted into a case, and can be shipped without risk.

The above are the instruments introduced into Canada from Germany by the Middlesex Agricultural Council, and it is hoped that the distribution of the lactoscopes throughout various sections will result in much good to our farmers and dairymen.

There is something wrong in the feed. Just what it is cannot be told without a full inquiry into the case, says L. B. Arnold in the N. E. Homestead. There are several things that produce rosy milk and cream. The most common cause is the use of some medicinal weeds, especially bitter weeds, as rag weed, tansy, wormwood and some species of yellow daisy. Poisonous weeds, such as cicuta, and lobelia, which cows sometimes seem disposed to take, have the same effect. He has, in several instances, known it to occur from an excessive use of good food. A too free use of corn meal and of sugar beets has every now and then been the occasion of rosy milk, but oftener in hot weather than in cold. It is also often the result of weakness from any cause, but especially from scouring. As the cow in question is apparently well and giving milk, the cause undoubtedly lies somewhere in her feed, and if the owner will take the trouble to change one condition of her feed at a time, he will be able to find the cause, and will gain for himself a bit of valuable information.

A correspondent of the National Stockman says: The gist of this matter lies in a very few words. They are these: First, choose your animals for personal merit; second, couple them for mutual fitness, with a view to cancel defects and deepen excellences; third, if on trial they do not nick, try other combinations, and in general remember that individual excellence to a breeder means excellence as a sire as much as excellence in form, and that the best index of how a bull will breed is how his ancestors looked and acted; in other words, to know the future, study the past. This, indeed, is the substance of the matter, easily learned, easily spoken, but, alas! hard to practice. Like many another formula, not every one who uses it can raise the spirits which it is meant to raise. The wizard, or at least one of the initiated, alone can work the spell even with the mystic words.

## Stock.

### A Chatty Letter from the States.

[From our Chicago Correspondent.]

A few years ago there was a great rush among cattle breeders to produce grade bulls for the western ranges. Thousands and thousands of quarter and half bloods were sold as yearlings at \$50 to \$60 per head, when as sires they were but little better in blood and not nearly so good in vigor as the ordinary native bulls of the west. As steers, these so-called improved bulls would not have been worth more than half what gullible western men were willing to pay for them.

During the current year, some Michigan breeders brought a lot of young grades here which would not sell at auction, but were finally closed out by private treaty to an old Illinois feeder, who bought them at \$20 to \$30 per head. He said a thoroughbred bull would get enough mean calves, and so he had all of these bulls, some three car loads, one's and two's, put to the knife and converted into steers, and placed on pasture. Just after they were altered, however, a western bull speculator appeared and said he could have used them to fill a contract at Denver at \$65 per head.

The idea of castrating old bulls to feed is growing in favor here. They can be bought in the market very cheap; the loss from the operation is practically nothing, one man losing only 1 out of 1,000 so treated. The animals feed quietly, and take on fat better than steers, and when returned to market sell for at least 1c. per pound more than bulls which had consumed much more feed. This may be an idea by which Canadian stockmen may profit. The castration should be done so the wound will heal before fly time, and there will be no more loss in operating on four and five-year-old bulls, or those older, than upon yearlings or calves. After the operation and feeding a while, the animals become perfectly docile, and at market can sometimes hardly be told from steers, their general appearance so materially alters.

But, speaking of bulls, the grade bull trade in the west has been anything but satisfactory this year. Western ranchmen are not only getting tired of paying big prices for low grades, and are using better qualities, but many of them are also raising their own bulls.

Every year during the summer months there is a depression in the market for heavy cattle. This year it has seemed to be more marked than formerly, and July cattle shippers were chagrined to sell big 1,500 lb. bullocks at \$4.75 @ \$5, when the same rates were more cheerfully paid by purchasers for tidy, fat 1,100 to 1,200 lb. beeves. The fall, winter and early spring are the times to market heavy cattle to the best advantage, and owners ought to learn this without paying so dearly and repeatedly for the experience.

Indications now point unmistakably to a largely decreased Texas beef crop this year. Shipments from the "Lone Star cattle kingdom" are just now at their height, but thus far the numbers marketed are less than in 1885. Texas cattlemen are slowly coming to the conclusion that they will be compelled to provide feed and shelter for their cattle. The ten-acres-for-one-steer idea is playing out.

There is a decided shortage in the American

wool crop, estimated, by good authorities, at seventeen to nineteen million pounds. There is also a shortage in the States mutton crop, though new sources of supply have been opened by the extension of the double-deck car system to the far west and southwest.

Sheep raising, which for a couple of years has been growing more and more unpopular, is receiving something of an impetus this year by the better prices for mutton and wool. If breeders paid some attention to the quality of the sheep they raise, it would not be very easy for the supply of this continent to exceed the demand, but when western sheepmen are willing to raise sheep—they call them sheep—which at market pay but 25c. to \$1 per head more than it costs to get them to market, there is constant danger of overdoing the business with mere numbers.

Rangemen in the southwestern States are branching out into Mexico farming, and those in the northwestern are leasing and otherwise acquiring large tracts of land in the Canadian northwest. Overstocked home ranges is the reason.

### Fast-walking Horses.

The attention of breeders will bear being called frequently to the neglect of teaching colts and young horses to walk, says a writer in Wallace's Monthly. The horse used exclusively for racing purposes is the only member of the family entitled to be excused from a well-developed gait at the walk. The walking gait is the most important for all other horses and should be the first gait developed and perfected by the trainer, and after a rapid, clean, strong walk is acquired, the speed-gaits should be attended to, though very carefully, until they are brought to a good degree of proficiency. Horses may be made to attain almost incredible speed at this way of going if due care is observed. We have known numerous road-bred horses that would walk from four and a half to five miles in an hour without urging, and many, in fact most well-bred road-horses, could be taught to cover greater distances than this in the same time if it were not for the pernicious custom (as we think) of putting the colts to the trot as soon as they are in the harness and before they are really bridle-wise. It may be a good idea for breeders of racing stock to put the colts to the trot and run at the leading-strap even before they are old enough to harness or saddle, since the popularity of sales of "yearlings" is increasing so rapidly, but for the common breeder this is folly.

We would get much better prices for the horses we ship for the city buyers for carriage and road purposes if we cultivated the walk. Every farmer's boy knows that he can do a better job of work—plowing, harrowing or working corn—with a fast walking team which makes the dirt fly, than with a slow one. The saving on a farm when the horses walk three miles an hour, or even when they walk two miles and a half, is 20 percent, or in other words, the fast team can rest a whole day in the week and yet do as much work as the slow team—do it easier and do it better. In times as at present when the work is pressing or the weather uncertain, the fast team is a treasure.

While every effort has been made to increase the speed of the trotter, the draft-horse men have been working for pounds, with little regard

either for muscle or walking-speed. It is a very great mistake to suppose that the draft horse can not be trained to walk rapidly. We have been breeding to a Percheron for four years that often walks 9 miles in one hour and fifty minutes, over a hilly road, and his colts are all rapid walkers. They are not as large as some, but they are large enough to do any kind of farm work easily and rapidly. This rapid movement has been of very great importance to us in the last ten days, when it was desirable to get the corn ground in the best possible order in the shortest possible time. Life is too short to spend it in poking along after a team that can not get their heads up. The lazy man to whom exertion is a burden actually works harder than the brisk, rapid worker. Of course we are not advocating the trotter or the roadster as the model farm horse. They may be too fiery—have too much of the trotting instinct for farm work. The farm horse should have the patience and dogged persistence developed by ages of service in that capacity, but he should have also the tirelessness of movement that enables him to do it with the least expenditure of effort and of his master's time, and do it in the best manner. We used to handle all kinds of teams when a boy, and always found we could do the best work with a team that had the strength to do the work easily at a steady, lively gait. They turned a better furrow, broke more clods with the harrow, and did a great deal better job of work in the cornfield as well as on the road.

[The Middlesex Agricultural Council has offered two prizes (\$15 and \$10) for the fastest walking farm team, to be competed for at the Western Fair in London.—ED. FARMER'S ADVOCATE.]

#### Ten Years without Shoeing.

My horses have been barefoot ten years, summer and winter, and they do as much as thousands of others that are kept shod as if their lives depended on it, says a correspondent of the N. Y. Tribune. Thus I cut off the expense of shoeing and the risk of injury from ill-fitted work. There is less difference between shoes and no shoes, even upon icy roads, than you imagine. However sharp your calks, a snowball held by the shoe often raises them off the ice, or you find they are "a little dull" when your horses go sprawling. A horse used to calks strikes out forcibly if he slips to make them take hold—and slips all the worse if they fail to do it; one who knows he is barefoot keeps his feet flat on the ice, takes short steps, and will get safely across almost any slippery places if he does not draw too hard. There are generally a few days every winter, however, when going barefoot is rather lively on the whole, but if the unshod horse wants shoes for ice he ought to have them pulled off when he comes to deep snow or miry ground at any season.

Shoes are dangerous, not only to the horse who wears them, but to others. The young horse I bought last winter had sharp shoes which I pulled off at once. Shortly after he gave his mate a kick on the belly which might easily have proved fatal had his foot been ironclad, but a severe superficial bruise and a great swelling was the only damage done. A large powerful mare of mine gave me a kick on the side of my leg just above the knee, and

taken wholly unaware I was landed nine feet distant, very much doubled up and hardly knowing for a moment what had happened. A good sharp toe-calk would have made a bad mark just then, but her bare foot, very likely levelled up with dirt and flat as a pancake, caused no injury whatever. A team constantly hauling on hard, gritty roads, may possibly need shoes; the average farm horse is better without. If any farmer requires more work than a team can do barefoot, when once used to it, he needs more horses.

#### The Provincial Exhibition and the Dominion S. S. Herd Book.

Editor *Farmer's Advocate*:

SIR,—As your paper gets a wide circulation among the farmers and breeders of the Dominion, would you allow space for a short letter on the above heading, "The Provincial Exhibition and the Dominion Herd Book?"

I have waited long for some person better posted to take up the subject, but having failed to see any communication on it, I take this opportunity of putting the matter before the breeders in as brief a space as possible.

It will be fresh in the memory of most breeders that when the British American Shorthorn Association was formed, the cry was that the Americans would not accept the pedigrees of the Canadian Shorthorn Herd Book.

The B. A. S. H. A. was formed, a revising committee appointed, and three volumes of what was known as the New Herd Book published. This book met with such success that parties not registering in it could not sell, and were obliged to register in it; but lately, the bulk of breeders came to the conclusion that it would be better to amalgamate the old Canadian Herd Book with the British American Herd Book and form one grand Dominion Herd Book.

This amalgamation took place last winter. With what results? The same President and part of the same revising committee of the B. A. S. H. A. were appointed, and they went to work. The standard for the Dominion Shorthorn Book was to be the same as the B. A. S. H. B., and here is where, I think, the trouble comes in. It was published in some papers that the standard was to be the same as the B. A.; consequently those having their stock registered in it naturally thought they were all right and voted on that head; but to the surprise of not a few, they are told that the standard is the same as the B. A., but we have not been living up to the standard. The consequence is that about one-half (and I think I am justified in saying the best half) of the cattle will be thrown out of the Dominion Herd Book. Now, I hold, if it had been properly understood when the vote was taken, there would have been few breeders who would have wanted a higher standard than the B. A. Herd Book. I see by the prize list of the Agricultural and Arts Association, that the Dominion Shorthorn Association seems to have had a hand in their rules, as animals in the Durham class are to be registered in the Dominion Herd Book. Last year it was English, American, or either of the Canadian herd books. Why the change? It looks very much as if some of the breeders wanted to play a lone hand this fall. The Shattuck cup seems to have been changed from the "best fat ani-

mal" to the "best fat Shorthorn steer or cow of any age." Is Mr. Oke not to be allowed to compete for it this year with a grade? I understood it was a grade that took it last year, and I don't see how he or any one else can be thrown out this year on account of pedigree. I see in the July issue of the *Journal* that the work of compiling the new herd book goes steadily on. Out of the shattered edifices of former records the good stones are being selected. If the editor would like to have a few specimens of the good stones, let him take the last catalogue of the sale under the auspices of the British American Association, and he will get a few, or I will give prices, and breeders can judge how precious they all were and how fit for D. H. B.:

Careless Prince, \$15; Carleton's Pride, \$40; 2nd Earl of Stafford, \$25; 4th Earl of Stafford, \$15; 3rd Earl of Stafford, \$15; 5th Earl of Stafford, \$10; Eunice of Rugby, \$31, etc., etc. Now he can get plenty of the rejected stones that will run up all the way from \$50 to \$500; in fact, it seems that he has forgotten that the stone that was rejected has become the chief corner stone.

Now, I do not give these figures to depreciate any person's stock, but merely to show the comparison, as in our own case the worst is eligible while the best will be thrown out.

ROBT. McQUEEN, Salem P. O., Ont.

#### Mud on Horses' Legs.

The Mark Lane Express contains a series of interesting articles on the Veterinary Treatment of Farm Animals, from the pen of Prof. Brown, V. S., in which he makes the following allusion to the above subject:

Ordinarily, horses on returning from work have their legs, and probably a portion of their bodies, scraped and washed. The subsequent process of drying, if attempted at all, is imperfectly performed, and the surface of the skin is left moist and cold until the natural heat of the body causes the evaporation of the moisture at the cost of a large expenditure of heat. Considerable disturbance of the function of the skin may be traced to the effects of the evaporation. The occurrence of mud fever and the different forms of disease which have been mentioned, is thus explained.

A happy inspiration induced some one to adopt the expedient of leaving the wet mud on the legs of the horse returned from work, to form a protective covering while the drying process was proceeding. On the following morning the dried mud was brushed off without difficulty, and forthwith "chapped heels," "mud fever," and "grease" ceased to appear in the stables where this plan was adopted.

Further experience has shown that if mud can be washed off at once by driving the animal into a pond, and then continuing the journey home, no harm results. The mischief is done by the washing, especially if warm water is used, when the animal has arrived home and is to remain stationary for the night in the stable.

In the case of hunters it is considered advisable to wrap the muddy legs in flannel bandages; hay-bands will form an effective substitute in the case of the farm horse, but the essential thing is to refrain from any washing or attempt to remove the mud until it is dry enough to be brushed off.

## Garden and Orchard.

### Ontario Fruit-Growers' Association.

The summer meeting of the above association was held in the town of Lindsay, on the 7th ult. There was a fairly good attendance of fruit-growers, but the number of farmers was small, owing, no doubt, to the busy season.

Mr. Thos. Beall, Lindsay, was chiefly instrumental in arranging the program. He associated business with pleasure, having, after one day's sitting at Lindsay, arranged for a cheap excursion by boat to Bobcaygeon, touching at Sturgeon Point, where the excursionists had an opportunity of inspecting the vineyard of Mr. Jas. B. Knowlson, son of the recently deceased John Knowlson. Mr. Knowlson is an affable gentleman, and made the visit of the fruit-growers exceedingly enjoyable. Towards noon the boat sailed for Bobcaygeon, where an afternoon session was held, the fruit growing peculiarities of that section having been discussed. A cordial vote of thanks was tendered to Mr. Beall for the ability he displayed in making the affair so agreeable and intellectually profitable.

The following subjects were on the program: *Strawberries*—Time for planting? Hills or matted rows? Varieties for different soils? Four of the most desirable varieties suitable for cultivation in this vicinity for market purposes? *Pears*—Four of the most suitable varieties for cultivation here? The best method of cultivation? *Apples*—Why are there so many failures in our apple orchards? The right time for pruning? Should orchards be cultivated after the trees commence to bear fruit? Most desirable aspect? Are wind-breaks necessary? Name ten varieties that may be profitably grown in this vicinity for market purposes? *Plums*—Can plums be profitably grown in this vicinity? What varieties? To what insect pests are plum trees liable? What are the remedies? *Grapes*—What varieties are suitable for cultivation in this county? The hardiest sorts? Methods of planting and supporting? Comparative standing of white, red and black sorts? How best protected during winter? The proper season for pruning? *Roses* were also on the list. At Bobcaygeon the apple question was again discussed, and there was also a discussion on tulips and hedges.

W. W. Hilborn, Arkona, regarded early spring as the best time for planting strawberries. He preferred the matted row system, not letting the rows spread more than one foot wide. He had the best results from changing the plantation after one crop of fruit was taken off. He regarded the Crescent Seedling as the best variety, as it gave a greater yield by one-half than any other variety. For the best four varieties he named the Wilson, Manchester and Capt. Jack to be added to the Crescent; but in a sandy soil he would substitute Daniel Boone for Capt. Jack, the latter flourishing best in a clay loam. He considered that it took more work to clean out an old patch than to plant a new one. By planting out in August, however, one-fourth to one half a crop could be secured the next season.

W. M. Robson, Lindsay, agreed with Mr. Hilborn that matted rows were the best. A member thought that three crops at least should be taken from each plantation. Mr.

Morris, Font Hill Nurseries, believed in matted rows one foot wide. He would mark out the rows with the plow  $3\frac{1}{2}$  feet apart, would plant in spring, manuring well the previous fall, and would cultivate thoroughly through the season. He found the second crop to be as good as the first and earlier. He recommended the Crescent, Wilson, Sharpless and Jewell. The Manchester did not always do well. Mr. Croil regarded the matted row system as the best for raising berries for the market, but fancy varieties should be grown in hills in order that they might get the best chance. He thought that two crops at least should be secured before changing the plantation. Mr. Demsey regarded the second crop as the best. He used the narrow row system, planting  $1\frac{1}{2}$  feet apart in the row. He applied the following mixture as a fertilizer: 10 barrels unleached ashes, 500 lbs. bone dust, and 500 lbs. superphosphate per acre. He regarded the Crescent and the Wilson as enough varieties for profit. He planted in spring. The matted rows could not be made too narrow, and too many fertilizers could not be applied.

A. M. Smith, St. Catharines, agreed as to the varieties named, but said that Mrs. Garfield and the New Dominion should be planted for late berries. Mr. Hilborn said that the Garfield was not prolific or profitable enough. He would substitute the Manchester for it. The plants of the New Dominion were not hardy with him. Mr. Robson, Lindsay, praised the Early Canada, it being very early. Mr. Morris said he had it once, but plowed it under. Mr. Hilborn said the Early Canada was the best and earliest if the late spring frosts could be escaped. Mr. Robson said he got double price for it, which compensated for occasional losses.

With regard to pears, Mr. Beall, Lindsay, said he could not name four varieties which would flourish in his vicinity. Clapp's Favorite and Flemish Beauty included the whole list. He tried 30 or 40 varieties and they all failed except these two, and he had no trouble with them. Henry Glendinning, Manilla, said that the two varieties named by Mr. Beall were the only sure ones in his neighborhood; other varieties blighted badly. D. W. Beadle, St. Catharines, said these two were the hardiest varieties that he knew of. There were some new Russian varieties, but he could not speak of them yet; it might take ten years before confidence could be placed in them. Mr. Wanzer said he had saved pear trees from blight by placing iron shavings around the trees.

The failures in apple orchards were exhaustively discussed. Mr. Beall, Lindsay, gave two leading causes of failures: (1) The undrained land, the soil and subsoil in that section being a heavy clay; and (2) Growing varieties that were too tender. The usual practice was to drain  $2\frac{1}{2}$  feet deep, which he did not consider deep enough. They attempted to grow too many varieties. He could not name ten varieties suitable for that section. He named the following eight varieties, which could be grown successfully: Red Astrachan, Duchess of Oldenburg, St. Lawrence, Keswick Codlin, Colvert, Snow Apple, Haas and Wealthy. These he named in the order of ripening. The Russets did not thrive there. Other causes of failure were: Not getting the

varieties ordered; not having the land prepared when the trees arrived, and sticking the trees into a hole instead of planting them. With regard to pruning he changed his mind several times; he did not prune much now. He did not plow or sow after the trees began to bear; but he cultivated lightly and manured well. Grass might be grown if the orchard were well manured. He favored pasturing the orchard with sheep. He recommended a northwestern aspect. Wind-breaks were very necessary. He did not want a thick wind-break, but something that screened the wind in its passage through, breaking its force.

Henry Glendinning, Manilla, mentioned as a leading cause of failure, the fact that farmers did not know what they wanted till the tree-agent called, and then the agent didn't know what the farmer wanted. It was usual for the farmer to select the varieties represented by the nicest plates, and these were usually unsuited to the district. The farmer had then no place fit to plant the trees in, but usually selected the lowest and springiest ground, and planted them carelessly. He lived only 14 miles west of Lindsay, and was successful with more than the varieties named. He recommended the Fameuse, the Golden Russet, the Talman Sweet, and the Ben Davis. The King of Tompkins did badly, but the Northern Spy flourished until this year, last winter having burst the bark. Of the Baldwins, few were left. He generally pruned in June. He recommended seeding down with June grass and top-dressing. He preferred a southeastern aspect. They liked early blossoming in their section, as they were not afraid of the late spring frosts; they suffered more from high winds. Their greatest losses were in fall, not in spring. Dry, hot winds were as injurious as cold winds. The Ribston Pippin and the Keswick Codlin suffered from high winds while in blossom. He regarded wind-breaks as extremely necessary.

Mr. Morris disapproved of late cultivation, as it made the trees too tender to stand the winter successfully. He mentioned another cause of failure, viz., allowing the trunks of the trees to grow too long. He would let them grow about four feet high, and then let three branches spread out from the main stem, which should grow up at an angle of about 45 degrees for a distance of two or three feet. From the tops of these branches the head of the tree should be formed. He contended that this method of pruning prevented the trees from leaning over, and also prevented damages from extremes of heat and cold. A team while cultivating the orchard could easily walk under trees pruned in this manner. He regarded June as the worst month in the year for pruning; spring was the best time, as soon as the severe weather was over. He advocated constant cultivation from the day of planting till the death of the trees; but the cultivating should be done early in the season—not later than July, when buckwheat should be sown to shade the ground. He favored shallow cultivation. With reference to wind-breaks, he agreed with Mr. Beall. When the breaks were too close, the trees were subject to damage by the codling moth. He recommended the following varieties for the Lindsay section: Wealthy, Duchess of Oldenburg, Yellow Transparent, Wallbridge, American Golden Russet, Talman Sweet, Alexander, St.

Lawrence, Canada Baldwin, and Mann, the latter variety being a good late keeper.

W. M. Robson, Lindsay, said the Keswick Codlin died with him, the Wagener was going the same road, and the Ben Davis was not hardy. He regarded over-pruning as another cause of failure. Dr. Herriman, Lindsay, who took a great interest in fruit growing, had been observing the surrounding orchards for many years, and found that wind-breaks were the principal cause of success. He observed that the following varieties were the most successfully grown: Wagener, Alexander, Snow, Talman Sweet, Golden Russet, Northern Spy, and Keswick Codlin. Mr. Demsey regarded sand as being better than heavy clay for apples. He believed in cultivating early in the season, and draining five feet deep. He regarded mulching as producing the same effects as tillage.

W. M. Robson gave his experience with plums. He was troubled with the curculio, but not with black knot. He thought plums could be profitably grown in the Lindsay section, but only two varieties succeeded, viz:—Pond's Seedling, and Lombard. He tried 20 or 30 varieties. Mr. Beall did not think that plums could be grown for profit in the Lindsay section. The climate was all right, but there was something wrong with the soil somehow. The Lombard variety succeeded best with him. He had no difficulty in destroying the curculio; he applied Parisgreen, one application just when the blossoms were beginning to fall, and another about a week after.

In the discussion on grape culture, Mr. Beall laid down the rule that any variety would flourish in the Lindsay district that did not ripen later than the Concord. Mr. Beadle thought the rule rather indefinite, for a difference of 10 days in the time of ripening could be made by growing an over or under crop. But cutting off half the fruit, the balance of the crop would ripen much earlier, and the aspect with reference to light and heat also made a great difference in the time of ripening. Mr. Demsey said that splendid samples and great weight could be obtained by cutting out all the bunches but one or two, and then taking out several berries from these bunches. It paid to thin out the Delawares and probably the ConCORDS too. He regarded bone dust and ashes as the best fertilizers for grapes; he scarcely ever applied farm-yard manure.

Mr. Pettit, Winona, one of the most extensive grape growers in Canada, was called upon to relate his experience in the management of the vineyard. With regard to pruning, he said much depended upon the age and strength of the vine. He could not explain properly without being in the vineyard and showing practically how the vines should be pruned. He would not let the wood grow too great a length of time; the less old wood the better. He did very little summer pruning. The leaves should not be clipped when the fruit began to ripen. He used ashes, salt, compost, and farm-yard manure as fertilizers. His soil was a heavy clay wash from the Niagara Escarpment. If all the varieties which ripened before the Concord flourished in that district, they had a very large list. Mr. Demsey said that American varieties should not be pruned like the European. He avoided old wood as much as possible. He trained the vines on two wires, the first about

a foot and a half from the ground and the second five feet. Their own weight bent the tops of the vines down, which was as good as pruning.

At the Bobcaygeon session apples were again discussed, and it was stated that the borer was a leading cause of failure. As a remedy it was suggested that an application of soft soap and lys be made once a year about the latter part of June or the first of July. Mr. Morris thought the same varieties would flourish there as in the Lindsay section.

Hedges were the chief subject discussed. Mr. Beall used to favor the native black spruce, but now he was a friend of the Norway spruce. He would transplant in spring, just when the buds began to shoot. The trees should be planted as soon as possible after being taken out of the ground. The proper distance apart for hedges was two feet. He pruned once a year, early in August.

Mr. Morris said the black spruce only lasted a few years. He considered the white spruce better than the Norway. He pruned about the middle of June, as at that time more buds would be formed, and a denser growth secured. No buds were formed in August. He planted 2½ to 3 feet apart. Mr. Hilborn praised the Scotch pine, it being a rapid grower, and made an excellent wind-break. Mr. Croil said native cedar made the best fence. A. M. Smith used cedar and Norway spruce. Mr. Beadle did not believe in much pruning; he would merely break off an occasional straggling branch. Nature did not demand pruning. Mr. Morris answered that hedges must be regularly pruned.

#### Papers for Amateur Fruit Growers.

##### XI.

[By L. Woolverton, Grimsby, Ont.]

##### BLACKBERRIES.

August is the month of blackberries. With us at Grimsby the Kittatinny begins ripening about the twelfth of this month, when the Cuthbert raspberry is yielding its last fruit for the season, and continues in bearing until about the middle of September. Of course, like other fruits, it will be earlier this year than usual, and begin ripening very early in August.

There are at least thirty varieties of cultivated blackberries, but among them all the Kittatinny stands pre-eminent. It gets its name from the Kittatinny Mountains of New Jersey, near which it was discovered by a Mr. Woolverton. The magnificent size of the fruit never fails to win exclamations of surprise among the pickers; and it ripens so perfectly that it is a most delicious table berry. One at a time, however, is enough for your mouth, unless you find an unusually small berry, or have an unusually large mouth.

My young Kittatinny shoots were cut back about the 1st of July, and have fine stocky trunks and numerous spreading branches, while the bearing canes present the heaviest load of fruit they have done for years. The fruit grower will harvest a heavy crop of small fruits with much gratitude in a season like this, when peaches and apples are so great a failure.

My *Snyders* are an astonishing sight. Such tremendous loads of berries I never saw. But herein is the fault, that though they bear so much more heavily than the Kittatinny, the berries are not nearly as large, and consequently do not sell as well in the market. The

*Taylor* is claimed to bear about as well as the *Snyder*, and to be larger; I have not tried it, but I have the *Stone's Hardy* and *Early Harvest* in bearing, and both these are keeping up their reputation for fruitfulness. These kinds are all hardier than the *Wilson* and *Kittatinny*, and need to be chosen where the soil and climate are too unsuited to these latter named varieties.

The cultivation of the blackberry ought to be kept up until fruiting season, especially in a dry summer, to keep the ground moist and increase the size of the fruit; but it should not be kept up much longer, because a late growth of wood on the young canes will be too tender to endure a severe winter.

The uses of the blackberry are various. Nothing is more luscious, eaten fresh, than a fully ripened Kittatinny berry. One would make a very wry face eating an uncooked *Lawton*, it is so deceitful with its black outside and hard green core concealed within, but not so with the *Wilson* or with our favorite above mentioned. For pies there is nothing more delicious, and for this purpose alone they should be canned in abundance; while for preserving in the old fashioned manner, their rich, tart flavor makes them agreeable to the taste of most people.

The old canes of the blackberry and raspberry bushes should be cut out, as soon as the fruit bearing season is over. This will give a better chance for the development of the new canes, besides giving the plantation a much more tidy appearance. A top dressing of manure or ashes should then be scattered along the rows in order to keep up the fertility of the plants.

##### THE FRUIT BUSINESS

this season is by no means encouraging. Papers and pamphlets issued by nurserymen interested in the sale of fruit trees and plants, have been full of extravagant statements concerning the enormous profits of fruit culture, until men of every profession and trade have coveted the business that would yield such bonanzas of wealth. Many have even been tempted to leave their customary vocation and to invest their all in a business concerning which they were almost totally ignorant, and, like the boy who tried to find the pot of gold at the foot of the rainbow, they have found their golden dreams to terminate in bitter disappointment.

There are so many difficulties to face, so many disappointments to meet, and competition is now so keen, that the fruit business has little, if any, advantages over other pursuits for the proper investment of time and capital. At Grimsby, for instance, peaches have now failed more or less completely for four seasons, cherries for three seasons previous to the present, and apples have been a poor crop for three years, and this fourth now promises to be even more disappointing.

The competition in small fruits, too, is becoming so keen that prices generally rule very low, leaving the grower very little after paying for baskets, pickers, express charges, etc. Indeed, in the vicinity of New York and Boston strawberries have been so cheap that they would not pay for picking; while even in Canada we have instances of persons so disgusted with apple culture that they have grubbed up their orchards. Nurserymen tell us that there is no demand at present for apple trees for orchard planting, and that almost all that are

sold just now are for the purpose of supplying the needs of the family.

To succeed, then, in the fruit business is as difficult as it is in almost any other business. Any person entering upon it must have just such preparation as is required to enter upon any other vocation. If a man have thorough knowledge of the business, and some experience in the same; if he has energy and perseverance, backed up with some capital, he may count upon ultimate success, but otherwise failure is almost certain.

All this, however, is no hinderance in the way of an abundant supply of fruits of every kind for home use. Every farmer and every citizen who has a garden may have the luxury of fresh fruit of his own growing for use every month in the year, and no fruit bought in the markets can equal that gathered in the time of its greatest perfection of beauty and ripeness from one's own trees and vines.

And here there can be no question about profit. The express charges, the commission for sales, the baskets, etc., which eat up so large a share of the profits of fruit growing for markets, have no place in the house keeping account, and I venture to say that no acre on the farm will yield the farmer greater satisfaction and profit than that which is devoted to the fruit garden.

#### Improve Our Native Grape.

Capt Moore, at a meeting of farmers held in Boston, and reported by the Massachusetts Ploughman, said with reference to the above subject:

Now, instead of crossing the foreign vines upon the natives, it seems to me that the true way is to improve these native varieties. You understand that there has been no attempt to improve our native grapes till within the last fifty years. The native grape was wild, as wild, perhaps, as the European varieties fifteen hundred or two thousand years ago. It has been subjected to a course of improvement with success. With only fifty years, you must remember, in which the improvement has been made, you have got up to the Concord, and many other seedlings are now following, which are as good, or better, in quality, than the foreign grapes. Now, it seems to me that the true way to improve these varieties is by crossing the best seedlings from our native stock. You can cross the best variety on the native, if you choose, and it is possible for you to get as good a grape as the Concord, which was the result of this process. Its mother was a rather ordinary variety. One good variety sporting in a year to any extent does not give assurance that it will continue to sport, but you will find a great many improvements in the course of time, and, perhaps, one in a thousand will be a success. But in the course of time our native stock can, without deteriorating in its quality, withstand our temperature, and be brought up to a point as good as the foreign varieties and still retain its hardiness.

Now, to do that, you must select the best berries, those which are well ripened. The berries which are used must be kept from drying in the winter, because they will vegetate better. It is the best way to take out the seeds and put them in a box of dry sand, or it would be better still if they should be put out doors where they will freeze, because freezing adapts them

better to the out-door life, and in course of time, from that process, you will get more or less improvement. But many of the grapes will not be good. You will find, as I have found, that many which you will get will be strong growers, but these strong varieties will prove to be deficient in the female organ in the blossom and will not bear any fruit.

I have had thrifty vines with abundance of blossoms, and imagined I was going to get such grapes as we read about in the Scripture, where it took two men to carry a bunch between them on a pole. But in a few days I found that the blossoms were aborted. I had not looked to see if the blossom was perfect or not. The next year I found that these blossoms had no female organ and could not bear any fruit. I wondered afterward whether such varieties as that in a vineyard, growing only the pollen, would not be desirable to start the fruit of varieties that are deficient in pollen. But I had become disgusted and destroyed the vines and could not experiment with them.

#### Business Men as Fruit-Growers.

It may seem an exaggerated assertion, but it is nevertheless true, that many business men and mechanics have better and more profitable gardens than professional gardeners. We have often observed this fact. We know mechanics laboring for their daily bread, who understand more about the principles of gardening than farmers or market-gardeners, and the same is true with reference to some professional and business men. They take a special fancy to fruit and vegetable growing, delight in the literature of the subject, and they make greater progress than many who have been brought up in the garden. It is an undeniable fact that many who have been tillers of the soil all their days study the least, and are apt to be convinced there is nothing to learn beyond what they already know. The same remarks are applicable to far too many farmers in our country.

While in Lindsay a few weeks ago, we visited the garden and orchard of Mr. Thos. Beall, who has been a leading business man in Lindsay for many years. About 20 years ago he purchased five acres of land in the suburbs, and as it was a bill of expense in its uncultivated state, he resolved upon making the land pay for itself, which object he has completely accomplished. Having a natural taste for fruit-growing, he laid out an orchard, and planted a large number of small fruit bushes, retaining a small plot for a vegetable garden. To-day he is one of our leading authorities on fruits, and is an active member of our Fruit-Growers' Association, amongst whose members he is held in high esteem. He undertook the work as a pastime and a pleasure, and without neglecting his regular business, he has made fruit-growing a financial success.

Specially worthy of mention are the black walnut trees which he planted on north and west sides of his orchard as wind-breaks about 16 years ago. He planted the nuts at that time, and although some of them did not germinate for two or three years after planting, the smallest trees are now about 9 inches in diameter at the base and about 25 feet high. Some of the trees are 12 to 14 inches through, and all are in a flourishing condition. They were planted 16 feet apart, and the limbs of the trees are now

beginning to embrace those of their neighbors. They bear fruit regularly and he sells the nuts for \$3.00 per bushel. He has also basswood, pine, cedar, and butternut trees, but his favorite is the walnut. He says it grows nearly as fast as the basswood, and we made some measurements in order to be fully convinced of his assertion. For ornament and profit combined, his next favorite is the basswood where bees are kept—and he has several colonies in the shade of his magnificent basswoods. He does not recommend the planting of maples, as there is little profit in them, and a basswood or a walnut will grow as large in ten years as a hard maple in twenty or twenty-five.

In the shade of his wind-breaks, and between the rows of apple trees, he grows a large number of gooseberries, raspberries, strawberries, and grapes, where they seem to flourish as well as in locations more fully exposed to the sun, but he manures his orchard thoroughly. He gets a splendid quality of strawberries where the plants are grown in the shade, but they ripen about a week later than the same varieties grown in the sunshine. His English gooseberries (Whitesmith variety) have mildewed badly, and he intended to dig all the bushes up, although, by the application of 50 lbs. of sulphur he has succeeded in checking the mildew to some extent. His American varieties have not suffered from mildew. From 300 bushes he obtained 27 bushels, which he sold for 12½ cents per quart delivered at his house, thereby realizing \$108 in all, being an income of about \$1,000 per acre.

He regards his section as excellent for grape growing, especially for the earlier varieties. He has 35 varieties of grapes, amongst which are 200 plants of the Niagara variety, which are in a flourishing condition. He has all the leading varieties of small fruits, but does not believe there is any profit in experimenting with many new varieties. Unleached ashes are his favorite fertilizer.

#### Various Notes on Forestry.

(Concluded.)

Having referred to the terrible desolation of several other countries, he closes with the following statements: 1. That the forest areas exercise a positive climatic influence upon the surrounding country. They modify the extremes of heat and cold, and render the temperature more equable throughout the year. 2. That the deforesting of large areas of hilly and mountainous country affects to a very large extent the quantity of water that comes from springs and flows into rivers. The more apparent is this when the deforesting occurs in the headwaters of important streams. Then the water-power is destroyed or greatly impaired, navigation impeded, commerce interfered with, and droughts and floods are more frequent and more severe. 3. That the interests of agriculture and horticulture are greatly subserved by the proper distribution of forest areas through their climatic and hydrographic influence. 4. That a country embracing within its border the headwaters of all the streams and rivers that interlace it, when stripped of its forest covering, becomes a barren waste, incapable of supporting man or beast.

With reference to the profits of tree-planting, he cites cases of some towns in Kansas and

Nebraska, where 25 years ago, cordwood sold for seven, eight, and even ten dollars per cord, and it can now be had for \$3 to \$4, when the population is many times greater. Governor Morton explains that this reduction is caused by protecting the natural groves from fire, and the planting of artificial groves. An authority says: "I estimate the cost of preparing an acre, and getting the cuttings of soft maple and ash, at \$3 per acre, and a man can plant 2½ acres in a day. That is all the cost for 10 years, except interest and taxes on land. I have 1,226 trees per acre. Seven years from planting I cut one-fourth, or 340 trees, equal to 15 cords of wood; the eighth year 15 cords more; the ninth the same; the tenth year you see my profits. I should out what is left, 456 trees. Allow four trees to the cord, so as not to over-estimate it. I have several trees only 10 years old which are 14 inches in diameter and 50 feet high. Four, I think, would make a cord. Allowing six trees to the cord, we have 76 cords, and with 45 cords cut before, 121 cords. At \$3 per cord, allowing \$1 for cutting, I have \$242." Saxony, from her 400,000 acres of forest land, receives an annual net income of about \$1,250,000; Batavia, from her 3,000,000 acres, an annual net profit of \$4,500,000. He reckons that a farming country should not have less than 25 percent of its area in wood land. He calculates that it would require 16,971,420 acres to keep the United States in railroad ties.

Mr. Wm. Little, Montreal, read an interesting paper on the destruction of forests, in which he quotes: "Fatal inroads have already been made in the great pine forests of the North Atlantic region. Its wealth has been lavished with an unsparing hand; it has been wantonly and stupidly cut, as if its resources were endless. What has not been sacrificed to the axe has been allowed to perish by fire. The pine of New England and New York has already disappeared. Pennsylvania is nearly stripped of her pine, which only a few years ago appeared inexhaustible. The great northwestern pine States—Michigan, Wisconsin and Minnesota—can show only a few scattered remnants of the noble forests to which they owe their greatest prosperity, and which not even self-interest has saved from needless destruction."

Mr. Little quotes Mr. Joly, a Canadian authority, as saying: "For some years past the idea has been gaining ground amongst men who take an interest in the future of the country, that our great pine and spruce forests are getting rapidly exhausted, and that before long a trade which enables us to export annually over \$20,000,000 worth of timber, will sink down to wofully reduced proportions. Thinking men have begun to sound the note of alarm. Let us now try and make an inventory of the timber resources of the Dominion, beginning in the west. On the Pacific shores, in British Columbia, the bountiful gifts of Providence are still stored up for us. How long these treasures will last us and what advantages we shall derive from them, depend in a great measure upon ourselves. From the Rocky Mountains to the Province of Ontario there are scattered here and there certain tracks of well-timbered land, but they are the exception. That timber will be required for the local wants of the

people who are now only beginning to settle on our fertile prairies."

Our governments are bungling our timber business in a most shameful manner. In some instances vast tracks have been presented to speculators for political considerations, who realize millions out of limits which they have never seen. If our government would spend a little of their surplus in replanting the timber lands which they have sent to destruction, instead of appointing agents to scour the country to gather statistics, some benefit might accrue to agriculture. But when the revenue from the sale of timber limits begins to diminish, the politicians howl in order to catch the farmer's political ear. Our farmers are not so pig-headed, however; they can see at a glance that if the money is not in the treasury, the timber limits remain untouched, which is a far better state of affairs than a surplus in the treasury.

#### Scraping the Bark off Trees.

A reason often given why the rough bark of trees should be scraped off and why a thick coat of lime-wash should be applied, is that this treatment will kill insects, says J. J. Thomas, in Mich. Horticulturist. Before resorting to either of these processes with the hope that they will prove an effectual remedy for insect troubles, it may be well to inquire what insects make their home in the rough bark of trees and perpetuate their species there. The curculio does not, but inhabits the soil beneath the trees for at least a part of the season; the orchard caterpillar deposits its rings of eggs on the young twigs; bark-lice choose smooth rather than rough bark; the peach grub goes to the root and not to the rough bark, and the apple-borer more frequently damages the small smooth trees. A few of the codling worms crawl under the rough bark, but destroying only these would make but a small impression on the whole numbers. Good judges think that scraping the bark renders it more susceptible to the cold of winter; and coating the bark with a shell of lime is of little use. It is much better to promote growth by good cultivation or by a top-dressing of manure, and to kill insects on the branches by direct attack wherever they may be found. If lime is applied to bark, it should be in the form of a thin wash which will scarcely change the color. Trees thus treated usually grow better than others, because those who take this care usually give good attention generally.

Prof. S. A. Forbes also made some valuable comparative tests of insecticides on fruit trees, and finds that, under favorable circumstances, Paris green will save to ripening, at an expense of ten cents per tree, seven-tenths of the apples that would be likely to be injured by the codling moth; that London purple will save about one-fifth of them, while lime will save none. The observations made confirmed statements made by others that the codling moth is double-brooded, and that it does not attack an apple until it is about the size of a pea. He also comes to the conclusion that it is entirely useless to attempt to combat the curculio by means of any insecticides applied to the fruit.

In Germany a small nursery is attached to nearly every common school, and the children are taught to grow trees from seed and cuttings, to graft and to bud, so that they acquire some practical knowledge of and intelligent interest in the growth of trees and shrubs.

#### Sheaves from Our Cleaner.

Hogs in the orchard until apple-gathering time, is going to become a popular thing. They will destroy thousands, yea, millions of embryo insects, by picking up the blasted fruit as fast as it drops. Hens, too, can do good work in an orchard, if they have the run of it.

An English paper says that American horse-breeders are taking the cream of English horse-flesh out of that country. The same journal also asserts that the English horse on importation into this country, develops new vigor and increased size, and that in this country he is destined to reach the highest state of perfection; also, that England must soon look to America, not only for work horses, but for breeding-stock.

Of the many combinations of food, Mr. Thos. Russell, Exeter, Ont., finds the following profitable, the ration being for 15 head of cattle: About four bushels of chaff or chaffed straw (clean wheat or oat), no hay, are put into a box; one wooden pail of bran is added, with two pails of meal, one part ground peas, and three parts bruised oats. Four bushels of pulped turnips are added, and a small handful of salt. The whole is dampened with one and a half pails of water, and two hours after one-half of the mixture is fed, the second half being fed four hours later than the first. Two of these mixtures are used during the day, the first at 9 a. m. and the second at 5 p. m., and is fed in four feeds, viz., at 5.30 a. m., 11 a. m., 2 p. m., and 8 p. m., the last half of the second mixture always being fed the following morning. A small quantity of uncut hay is put into the racks with each feed, save in the case of the grades, when oat straw is used instead of hay. They are let out to water twice a day, 9 a. m. and 3.30 p. m., and are left out for an hour and a half in the forenoon, when the weather is fine. This ration is fed from November until some time in May. A less quantity is fed during the summer, and only morning and evening, with a further difference that green feed is cut instead of straw, and the cows suckling calves get an addition of bran. In the first part of the turning out season they are housed at night, but not when the weather gets really warm.

A writer in the "Philadelphia Press" says: My neighbor had two orchards, separated by an east and west road. They both bore the same year. One season the canker worm got possession of the south orchard and completely stripped the trees of leaves, but did not cross the road. This was the bearing year. The south orchard bore no fruit that year. After a short time the trees leafed out again and the orchard appeared as well as ever. The next year the south orchard bore a fine crop and the north orchard failed. As this south orchard now bore in the off-year, when apples were dear, the crop from this alone was worth more than both orchards usually brought. This was many years ago and this habit has remained permanent. Many years ago in central New York we had a cold snow storm when the apple trees were in full bloom. The fruit was killed and we had no crop that year. The next year we had a fine crop of fruit, and thus the bearing year was permanently changed. That the bearing year can be changed by picking off the fruit is beyond any reasonable question. In most cases it will be advisable not to change the bearing year, but to secure a medium crop each season. How the labor compares with the advantage is a question for each one to consider, but the object is within our reach.

## Poultry.

## Amount of Food Required Daily.

In an experiment in England for the purpose of determining the daily amount of food consumed by different breeds of fowls, the following was the result:

Dorkings.....	6 ounces,	391 grains.
Games.....	4 "	275 "
Buff Cochins.....	17 "	296 "
Langshans.....	7 "	31 "
Dominicks.....	4 "	336 "
Brown Leghorns.....	4 "	398 "
Hamburgs.....	4 "	120 "
Polish.....	4 "	28 "
Guinea Fowls.....	4 "	182 "

It will be seen that the Buff Cochins eat much more than any of the other breeds, and to show the increase of weight in proportion to food consumed, it may be stated that each gained daily as follows for twenty days:

Dorkings.....	138 grains, and laid 130 eggs per year.
Games.....	92 "
Buff Cochins.....	77 "
Langshans.....	123 "
Dominicks.....	92 "
B. Leghorns.....	107 "
Hamburgs.....	92 "
Polish.....	46 "
Guineas.....	75 "

It will be noticed that the Hamburgs gave the largest number of eggs and the Brown Leghorns next, but the Dorkings and Langshans made the largest daily gain in growth, while the Cochins, though consuming enormously of food, did not show its effects either in eggs or the first twenty days growth. Taking the three highest for weight at six months, the following was the result:

Dorkings weighed 10 pounds, 1 ounce, and 685 grains.

Buff Cochins weighed 9 pounds, 13½ ounces. Langshans weighed 10 pounds, 5 ounces, and 437 grains.

The greatest gain was made by the Langshans, but for the food allowed the Dorkings are entitled to the honor. We give the above as the result of experiments in England. In this country the conditions would be reversed perhaps. Hamburgs seldom lay as many as 239 eggs, but in England the climate seems best adapted to both Dorkings and Hamburgs. In estimating the results the kind of food should be considered, which was not given. We use corn largely in this country, and hence experiments here would be conducted differently. Chicks when hatched usually weigh about one and one-half ounces, those from the large breeds having an advantage. We intend to conduct similar experiments for the benefit of our readers.—[Farm and Garden.

## Lice and Red Mites.

First let me tell you all that if you would use the "ounce of prevention" when you set your hens, and would always coop the broods in a clean coop, your chicks would not be troubled with big lice, or little lice, or lice of any kind. When you set a hen, put a handful of tobacco leaves, or some fine cut tobacco, or a dose of sulphur, or snuff, or carbolic powder, insect powder, anything (except kerosene or grease of any kind) that hen-lice don't like, in the nest, and rub the old hen's feathers full of sulphur. If you will do this the chicks will come from the nest entirely free from lice. Then put them in a clean coop, and see that they have some place to wallow in the dust, as soon as big enough, and they will stay free from lice. But if you were not wise in season,

and your chicks and turkeys are now suffering for your sins of omission, you must do the next best thing—get rid of the lice. For the big lice that "stick so," you must take a big pin, and catch them. You will not often find more than three or four on a chick, and those stick to the head. After you have removed the torments rub the head with a mixture of sweet oil and carbolic acid, which will prevent any more nits hatching, and also prove "kind o' soothin'" to the wounds made by lice; for be it known that these big head lice actually bore their way right into the flesh. I have seen them half buried in the chick's head, and when they are that bad they must be removed at once, else the chick will quit living. For common chicken lice on young chicks and turkeys, there is nothing so good and safe as carbolic powder, or insect powder, and the best way to apply it is to dust it well into the feathers of mother hen just at night, so that it will have all night in which to do its work. The chicks will get their share as they nestle beneath the hen. If the first application does not do the work effectually, repeat until not a louse is left to tell the tale. Usually two applications are sufficient. The coops occupied by chicks or turkeys infested with lice, should be thoroughly whitewashed, and moved to a fresh spot of ground.

After chicks and turkeys are three months old, kerosene may be used for lice, and no ill results follow—provided the oil is used in a sensible manner. Do not wet the chickens all over, but rub a little of the oil on top of the head, under the wings, and into the feathers on the under part of the body. Don't mix any sulphur with the coal oil; the oil alone is sure death to lice. But let me tell you that if chickens are kept free from lice until they are three months old, and after that age furnished with a wallow of dust and ashes, and their coops occasionally treated to whitewash or coal oil, they will not be troubled with lice enough to hurt.

About those red mites, or spider lice—well, I do think they are just the meanest "critters" that ever vexed fowls and their owners. When they once get in a fowl-house, nothing but a "stern unrelenting warfare" will clean them out. They don't stay on the fowls during the day, but hide on the under side of the perches, and in cracks and crevices about the roosts and nests; at night they come forth from their "retreats," and just swarm on the fowls. To begin the war of extermination, catch all your fowls, and rub coal oil into the feathers on the under part of the body, and under the wings. You needn't be so particular as with chicks, for a little kerosene more or less won't hurt old fowls. After you get through with the hens, stop a minute and think how uncomfortable you feel with a million hen lice crawling up your arms; then carry everything that is loose out of the hen house, and whitewash the house thoroughly. If there is an earth floor in the house, or a floor covered with earth, scrape off the top, and put it somewhere where the fowls cannot get at it; then spread on fresh earth and scatter lime freely. This part of the work done, shut up the house as close as possible, carry in an old iron kettle half full of live coals, pour on a pound of sulphur, shut the door, and turn your attention to the "movables" out of

doors. Wet the perches thoroughly with coal oil and set fire to them. If you can get new perches just as well as not, better let the old ones burn all up, but if you must use the old ones again, put the fire out with an old broom and a pail of water, and the lice will be out too. Whitewash the nest boxes, and pour coal oil into all cracks where the lime does not reach. After you get through with this, and have "changed your clothes," the house will be smoked enough, and you can open it to air. The next day, and about every day for a week after this house-cleaning, examine the under side of the perches after the fowls have left the roost; if you find a single mite, wet the roost thoroughly with coal oil, for if but a half dozen of the little bloodthirsty wretches escape destruction, they will "bring forth after their kind" with astonishing rapidity; and next thing you will know, the house will be "just swarming" with red mites again.

While I am talking about lice, I may as well tell the poultry keepers who do not even suspect the presence of red mites in their fowl houses, that it wouldn't do a bit of harm if they were to examine the under side of the perches for the "dark red patches," which are simply millions of red mites.—[Fanny Field, in Prairie Farmer.

Two ounces is probably the average weight of eggs, but some often reach three ounces. Those from pullets are not only lacking in size, but also in weight, proportionately. Some of the small breeds lay eggs larger in size than do the larger breeds, such as the Black Spanish, but if large eggs are desired they can only be procured from fully matured birds, no matter what the breed may be. No amount of food will compensate for youth or imperfect growth. The hens over a year old lay the largest eggs.

Poultry can be forced artificially the same as plants. This has been shown the past season by comparing the progress made by chicks raised in brooders with those under hens. Pullets hatched the 15th of January began to lay May 1st, although they were not quite four months old. This shows that by subjecting the chicks to artificial heat, and forcing them in growth, the reproductive functions are also stimulated, but such pullets will cease to lay when they reach maturity much sooner than will those that develop slowly. What is gained in the beginning is but a hastening of nature, and the period of life and usefulness will be correspondingly shortened.

The importance of plenty stable room with an abundance of ventilation during the hot months cannot be over-rated. The health of the stock demands it. Horses accustomed to hard work are not usually subject to colds, so that there is no danger to be apprehended in maintaining a constant and abundant circulation of fresh air, even when the nights turn moderately cool. The practice also tends to make the horses hardy.

The one judge system is gaining ground at our exhibitions. It is contended that under this system, the whole responsibility being placed on one judge, he would refuse to act unless he was competent and able to shoulder the responsibilities, whereas, under the present system, when an incompetent judge acts, he throws the responsibility of his bad judgment upon his fellow judges.

### The Apiary.

#### Fruit-Growers and Bee-Keepers.

That bees are an important factor in the economy of nature, has long been proved. Only a few days ago I came across the following in the American Bee Journal:

"Most of the readers of the Journal are aware that in England melons, cucumbers, pumpkins and squashes cannot be raised in the open air; they are all raised in green-houses and hot-bed frames, and many hours have I worked in the garden at home in England, with a fine, long camel's-hair brush, conveying the pollen from blossom to blossom, where the bees could not get to do the work; and even now in this climate, if we do not have good weather for the bees to work on the fruit blossoms, and especially on red clover saved for seed, we get but a poor crop. Last year I had a good crop of mammoth clover seed, while a few miles from here there was none, and I think I owe it to my colonies of Italian bees, for they worked on it first-rate."—W. ADDENBROOKE.

A few weeks ago I heard two old farmers discussing bees and buckwheat. "I tell you," said one, "buckwheat is a good thing for bees." "Yes," replied the other, "but the bees are not a very good thing for the buckwheat." "No, I suppose not," said No. 1. And thus the conversation ran on until I ventured to ask Mr. Farmer how he knew that buckwheat was injured by the bees. "Why, they take something from it, don't they? If they do, it injures it. How can it be otherwise?" replied my farmer friend. I then explained that I was a bee-keeper, and that I also raised buckwheat; that my buckwheat, which was at times fairly "swarming" with bees, yielded fully as well, if not better, than buckwheat that was far removed from the busy workers. I explained how necessary were the bees for the fertilization of blossoms; that if the blossoms were covered with muslin, so that the bees had no access to them, they produced no fruit. My opponent contended that it might not be lack of visits from bees that made the covered blossoms unfertile, but lack of heat from the sun's rays, as the result of being covered. I then cited to him the experiments of Prof. Lasenby, of Ohio, in covering strawberries with boxes, and fertilizing one variety with the pollen of another. Specimens that were left unfertilized produced no fruit; those that were fertilized did.

I also told that oft-repeated story of how the fruit-growers of a certain town in Massachusetts, years ago compelled the bee-keepers in that vicinity to move their bees out of town—the bees injured the fruit, so said the fruit-growers. In a few years they were persuading the bee-keepers to bring back their bees, as the crops of fruit had been exceptionally light since the removal of the bees. The bees were brought back, and with them came abundant crops. I told him that crops of red clover seed could not be raised in Australia until humble-bees were imported to fertilize the blossoms. I then waxed eloquent, and declared that the beautiful colors were not given flowers simply to please the human eye, the grateful fragrance to regale the human olfactories, nor did the nectar flow simply that it might be gathered up and used to tickle human palates; these things were the blossom's advertisement, which attracted to it the honey-loving bee, which came, bringing with it the fertilizing pollen

from distant flowers. When I had finished, my opponent said: "Well, I don't know anything about it; maybe you are right, my friend."

Now, those of you who know that bees are largely instrumental in the fertilization of blossoms, and that the removal of the nectar in no wise injures the fruit or grain, may be inclined to smile at the old farmer's views, but he is not alone in his ignorance; even editors—yes, and agricultural editors at that, have exhibited lamentable ignorance upon this subject. The agricultural editor of a very prominent New York weekly paper very gravely informed an inquiring correspondent that bees were an injury to buckwheat, taking the same ground as did my farmer opponent. It was this same editor who said he had watched, with interest, the progress of the Italian bees ever since the first pair (!) was brought over from Italy.

It is nearly always ignorance that leads to trouble about bees. In Wisconsin, the past season, the owner of an apiary was sued for damages alleged to have been done to sheep while grazing in a pasture of white clover. It was claimed that the bees came in swarms and drove the sheep from the pasture! It is well known to those who are conversant with the habits of bees that, when foraging, a bee is timid, and will flee upon the approach of any object. The plaintiff in the suit was not only ignorant of the habits of bees, but seemed to forget that were it not for the services of the bees in fertilizing the white clover blossoms, there would have been no white clover pasture for his sheep. The judge in this suit decided that there was no law applicable to the case, and dismissed the suit. The plaintiff probably mistook the attacks of the troublesome gad-fly for the attacks of bees, which he saw working upon the clover. In California, recently, a bee-keeper has been sued by a fruit-grower for alleged damages done to grapes. The suit was in a justice's court; the apiarist was beaten, but has, I believe, appealed to the higher court.

As to whether the bees really do injure fruit, is a question that has been frequently asked. I presume many fruit-growers will unhesitatingly say they do, and they know they do, while bee-keepers are equally certain that it is impossible for bees to pierce the skin of fruit. At the convention of bee-keepers held last December in Detroit, Prof. A. J. Cook said: "People have several times told me that their grapes had been destroyed by bees, and I have offered to come and witness the destruction, if they would let me know when it is going on, but I cautioned them to first be sure that they had a case; I have never been called. Bees do sometimes attack grapes, however, but it seems when the weather has first caused them to crack or something else has attacked and opened the skins." At Aurora, Ills., there is an experiment station of the United States in charge of Prof. Nelson W. McLain. The professor in his report says that he placed colonies of bees in a building, deprived them of food, except fruit of different kinds, which was placed upon shelves around the sides of the room. All specimens having cracked skins, or that were intentionally perforated, were entirely consumed except the skins; but although these bees were starved to death, not a sound grape, apple, peach or fruit of any kind was injured,

It is a physical impossibility for a bee to cut open the skin of a grape; its mandibles are not capable of cutting.

Now, then, although I deny that a bee can attack and destroy a sound grape, I do not deny that bees are sometimes a source of great annoyance, and perhaps some loss, to the grape grower. Even if the skins of his grapes are cracked, or have been pierced by wasps or birds, the grape-grower may not wish them sucked dry; or if he does not care for the loss of the cracked grapes, the presence of the bees is a great annoyance in gathering the fruit. Bee-keepers should not ignore this; neither should the grape-growers forget that the bees are their best friends, inasmuch as they fertilize the blossoms, and thereby produce the fruit. In the spring, when there are but few insects to fertilize the blossoms, the bees are very valuable. Both bee-keepers and fruit-growers should learn to bear and forbear. If I understand the matter, the injury and annoyance that grape-growers suffer from bees, are often of short duration, only lasting a few days, and, if all parties would exhibit a neighborly spirit, it is probable that the bees might be shut in their hives a few days, with no great loss to the bee-keeper, as bees never frequent cider-mills, nor suck the juices from fruit, unless there is a dearth of honey, and the loss of honey would not be great. If the weather is warm, the hives would probably require a great amount of ventilation.

But let us suppose that bees do injure grapes or other fruits, and that the bee-keeper cannot, or will not, keep his bees at home, can the fruit-grower, in justice, ask the bee-keeper to pay damages or to move his bees away? It may help us to turn the telescope and look through it from the other end. Let us suppose that the juices of fruits were injurious to bees, that when stored and used for winter food it led to disease among bees. Could not bee-keepers, then, as consistently complain if a vineyard was started near them, as fruit-growers can now complain when an apiary is brought into their neighborhood? Bees have existed as long as have fruits, and the keeping of one is as legitimate and recognized a business as the raising of the other, and if there are times when the two industries clash, it is doubtful if the difficulties can be settled by legal proceedings. In my own opinion, however, there is a moral law to priority of location. If bees are the cause of loss and annoyance to a grape-grower, and this loss or annoyance is not counterbalanced by the benefits derived from the bees, then the man who knows this and plants a vineyard in the vicinity of an apiary, is morally bound not to complain of the depredation of the bees, while the bee-keeper who brings an apiary into a grape-growing district should feel himself morally bound to keep his bees from annoying his grape-growing neighbors.—[W. Z. Hutchinson, before the Michigan Horticultural Convention.

The destruction caused by the bot-fly amounts to £2,000,000 in Great Britain and Ireland, and the estimated loss caused by ergot in the grasses reaches £1,000,000. The latter is the chief source of abortion.

The Royal Agricultural Society (England) recommends McDougall's preparation for destroying bot maggots on cattle, also later on as wash to prevent the attacks of the warble flies.



Veterinary.

Inflammation of the Foot—Laminitis—Founder.

This consists in inflammation of the sensitive parts of the foot, but predominating in the anterior portion of the laminae, where the greatest strain comes in standing.

Causes.—The disease may arise from direct injury as in over-exertion on hard roads, blows, bruises or freezing of the feet, pricks or binding with nails, continued injury from a badly applied shoe, or the constant strain upon the feet during a long sea voyage. It may also occur from a sudden chill, from drinking cold water when heated and fatigued, from overloading of the stomach with grain, from mucocenteritis, the result of an over-dose of purgative medicine, or from diseases of the lungs (pneumonia, bronchitis). Small and deformed feet and large flat ones often suffer. Horses with heavy fat carcasses are also predisposed.

Symptoms.—When not caused by direct injury to the foot, it is usually ushered in by fever and general stiffness and soreness of the surface, with or without shivering, but independent of any tenderness of the foot. If not relieved these are soon followed by tenderness of the foot, usually predominating at the anterior part, but sometimes settling in the heel and causing pedal sesamoiditis. When acute inflammation is developed in the laminae of the fore feet the horse is in a high fever, with full hard pulse, excited breathing, distended nostrils, extension of the fore feet forward, so that they rest only on the heels, and bringing of the hind feet far forward beneath the belly, to bear as much of the weight as possible. If moved, the horse groans, sways himself back on his hind parts, and drags the fore feet on their heels, or balancing himself on the hind, lifts both fore feet at once and brings them down again on their heels. The affected feet are warm, even hot, and the animal refuses to have them lifted because of pain consequent on standing on one. If they are struck with a hammer the animal winces and groans. The arteries on the pasterns throb violently. The hairs of the mane and tail may often be pulled from their follicles, showing the general implication of the skin.

If one fore foot only is affected it is kept raised and advanced. If the hind feet, they are advanced beneath the belly, and the fore feet carried as far backward as possible to bear the greater part of the weight.

Treatment.—In the initial stage, with general stiffness but no special tenderness of the feet over other parts, vascular and nervous tension may be relieved and the disease suddenly cut short by full doses of sedatives (lobelia, tobacco, aconite), with warm clothing to encourage perspiration. Even at a more advanced stage when the feet are becoming congested and tender, the same may be resorted to, the feet being enveloped in warm poultices, and the animal encouraged to lie down by supplying a clean comfortable bed of straw. Or in place of poulticing the feet, we may seek to improve the circulation by walking without shoes on a soft newly plowed field, the heels having been slightly lowered, if very high, to allow pressure on the sole, or the patient may even be walked on a hard surface after a long

bar shoe with broad web and a slight rising at the heel and toe (rocker fashion) has been applied. But walking can never be resorted to when the extreme tenderness and fever show that active inflammation has set in. In this case a mild laxative (aloes) must be given (unless already purging) and followed up by acnitate or other sedatives, the feet must be enveloped in large poultices and the animal encouraged to lie down. Should he refuse to lie down, the hoof-wall should be rasped down to let the sole come in contact with the ground. In severe cases the coronet may be scarified with a sharp lancet and the foot placed in a bucket of warm water or fomented with the same to favor bleeding. In the course of two days, if the suffering, fever and local tenderness are increasing rather than abating, the sole may be thinned and opened at the toe, so as to evacuate any serious exudation and limit the separation of the horn from the quick, the poultices being kept on after as before. In the course of ten days or a fortnight the inflammation should have subsided far enough to warrant the application of a blister to the pastern and an ointment to the hoof, while the patient is turned out on a soft wet pasture or kept standing a part of his time on wet clay.

CHRONIC LAMINITIS—CONVEX SOLES—PUMICE FEET.

If the inflammation persists in a slight form, an excessive growth of soft, spongy horn takes place in front of the laminae at the toe, separating the coffin-bone from the hoof-wall and allowing its anterior border to press upon the sole or even to perforate it. The hoof-wall becomes covered with rings usually running together at the toe, where it bulges out below and falls in above. Complete restoration cannot be expected in the worst cases of this kind, but much may be done for the majority. Put on a thick broad webbed bar shoe beveled toward the inner side on its upper surface, and thinner at the heel than the toe, dress the sole and wall daily with hot tar, apply gentle blisters around the coronet, and keep in a very soft damp pasture. The new growth of horn may grow down almost perfect in appearance, but it retains an undesirable brittleness.—[Law's Veterinary Adviser.

The common practice of pasturing meadows in the fall is not sufficiently considered by our farmers. It is ruinous to the meadow to put on much stock after the hay crop is removed, but much more so on some soils and in some seasons than others. Some varieties of grasses are also more easily killed out than others. All these facts can be ascertained by a little observation. The farmer who practices soiling soon finds out that in some instances it would be cheaper to continue soiling the cattle after the hay crop is removed than to suffer the meadow to be damaged. There is no wonder that many fine meadows are "winter-killed;" but the winter is not to be blamed, the soil is not to be blamed, the grass is not to be blamed, the stock is not to be blamed, but the farmer is to be blamed. Besides, the soiling system has the advantage of saving the manure for any special purpose. As a rule, the cost of soiling will be compensated by the better condition of the meadow in future crops. Each farmer should know how much tramping and eating his meadow will stand just as accurately as he knows how much feeding pressure his cows will stand.

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.

The "Advocate's" Policy.—We like the ADVOCATE very much, and think you have taken the right course to weed out "scrub" animals (not only native, but thoroughbred as well), by educating farmers to see the necessity for so doing. We think you are doing much to induce farmers to improve their surroundings by introducing trees, etc., suited to their localities. We hope the Council will succeed, and think it a good idea to get the opinion of farmers in different parts of the country on the various questions of so much importance to the tiller of the soil.—B. J. C., Andover, N. B.

Women's Out-door Work.—In reading the correspondence in the July number of your paper, I was amused as well as interested in reading J. E. A.'s article on "What Out-door Work should Farmers' Wives and Daughters Perform?" Sure enough, the writer must have her hands full, if she has her share of this "deplorable" out-door work to do. I believe in what is called "Woman's Rights," but is it to be so understood that all over this "prosperous Dominion" such a state of affairs exists as our fair friend represents? It is not my intention to argue on all the phases of her subject as she has some plain and stubborn facts that will stand; but taking a glance around, we see in most instances where a large number of cows are kept, not "mother," nor Mary or Sue alone, do the milking. Where "Dad, and Dave, and Jim, and Fred" are all milking. Mother looks after the putting of the milk into the milk pans, or factory milk can, as the case may be, and sister is getting the breakfast ready. And at night, Dad and the boys have to quit an hour before sundown to have milking, feeding pigs, etc., done before dark. Would the like of this suit our friend? It is a fact, and in general is the case. Exceptions there are when four or five cows are all that are to be milked, a dog is kept to churn, and some women say it's "hard work to keep him at it." If that is the case, it must be harder for themselves to do it, without a doubt. I have heard of a lady who pretended she could not eat tame strawberries at one bite each, because her mouth was so small; she would tell you so, so proud of it was she. Who is it that pretends to have shoulders so constructed that she is not able to carry 20 pounds of milk by each arm? If our friends, the men, go to town in the evening, they might get the filthy weed for themselves. It must be rarely that women clean the horse and cow stables. As it is, I have heard some bragging of it; I think it was not the work, but their ability to do so that was their intention when boasting. A little gardening will do a woman no harm. I know of three sisters—one married a preacher, the second a merchant, the third a farmer; they were a farmer's girls. The first two died long ago. The third is living, a robust, healthy woman; her husband is now a retired farmer. All three were alike healthy when young. It is believed by all that the fresh air and the gardening which she did were her life preservers. A glance at the machinery indoors, with that out of doors, sewing, knitting machines, washers, wringers, mops, etc., which grandma doesn't believe in, are a comparison worth study. Theology alone will not work out the great problem, "Woman's Rights."

"Let every woman know her place, And when she finds it, keep it: A tidy house, and pleasant face— A broom and fan to sweep it." Keep women cheerful, for if they get in the dumps, the best medicine known will have no effect. Arr

women always weak? No—some like to work at the haying better than at the fashionable spinning-wheel—the pianoforte. Let them all have a good education and a knowledge of music, if their tastes run in that direction.—W. H. B., Lanark Co., Ont.

**Pruning Grapes.**—Will you please insert in your next issue an article on the care and pruning of grape vines. There is much want of information on this subject by many of your subscribers.—T. B. M., Rodney, Ont.

[The best grape growers do the least pruning, as a rule. The vines or the fruit cannot flourish if many leaves are pruned off, although, if the vines are allowed to grow too rampant, you will get too much wood with little fruit. The summer pruning should mainly consist in rubbing off the superfluous buds as soon as they begin to shoot. When the fruit begins to make its appearance, the tender ends of the vines may be nipped off with thumb and finger—not too close to the grape clusters. Early in the season, select the bearing vines for next year, not pinching them back at all, and the less fruit they bear the better. If there are any weak branches or inferior clusters, they should be removed. If this kind of pruning has been neglected until too late in the season, the knife must be used to a small extent in order to let any air and sunshine into the clusters. Read also our report of the meeting of the Fruit Growers' Association in this issue.]

**Who is Responsible for Accidents of the Hired Man?**—A has a man hired for eight months. At the end of three months he gets his leg broken. A pays the doctor bill. Is he compelled by law to do so? Having been compelled to hire another man, how long is A bound to keep the first man free of charge?—FAIR PLAY, Drumblane P. O.

[If the accident happened by the man's own neglect, A is not responsible for anything; but if the cause of the accident can be traced to A, the man can sue A for as much damages as he can prove against him. If A is not responsible, the contract for eight months is broken.]

**Devon Cattle.**—Please state in your next if Devon cattle are suitable for this country; also their advantages if any, and their failures and defects. I should very much like to hear the experience of some of your subscribers and others on the subject through the medium of the ADVOCATE.—F. S. J., The Meadows.

[The Devon is a general purpose animal. It is hardy, strong and excellent under the yoke. The quality of its beef is scarcely excelled by any other breed, but it is a slow maturer, does not attain so great a size as the strictly beefing breeds, and cannot therefore be fed with so much profit. It produces a good quality of milk and medium quantity. The Devon is the best family cow for general purposes, where quality in all respects is sought, but it is not a profitable breed for milk, cheese, butter or beef. If market prices were based on quality alone, the Devon would be the most profitable of all known breeds.]

**Adulterated Salt.**—In your July issue I notice Mr. John Ransford, of Clinton, has been calling the farmers' attention to certain brands of salt that are being offered for sale, "short weight," but he, in his philanthropy, has forgotten to call the farmers' attention to a much more serious fraud than that of short weight in the salt industry, which I will endeavor to make known to them how to detect. He is correct in saying a barrel of salt, according to custom (when salt was higher in price), weighed 280 lbs. or 300 lbs. gross, but not 350 to 400 lbs., as some of this "adulterated salt" unfortunately does. I will therefore tell the farmer when he finds a barrel of salt weighing over 280 lbs., to beware—something is wrong, the secret of which I will explain before concluding—a wrong which will perhaps in the use you put the salt to, produce more injury than if you paid the same price for 50 lbs. of pure salt. Now, this salt I refer to is made from an impure brine which requires malignant adulterations before it can be made into salt at all. These adulterations are cheap trash, and produce a very poor grade of salt. However, this salt will present a nice white and exceptionally fine appearance; but by taking a handful you will find it contains no "grit"—it has a fleecy or slimy feeling. If such is the salt you are asked to purchase, don't buy it; and if you are so unfortunate as to have any of it on hand, throw it out. This adulterated salt is very deliquescent; of course all salts are, but this, owing to its nature, is very much more so than the ordinary salts, hence it never can be made into dairy or table salt. Mr. R. also tells us a movement is on foot to legalize a standard size barrel, in which to put a certain weight; but I would like to ask him why the instigators of this movement, when asking the County Councils to memorialize the Government, have not asked that an inspector be appointed, which will guarantee the public an honest article and fair weight. In his benevolence, it behooves him not to eschew this important matter, and have those manufacturers "close up" who are not able to produce a similarly pure salt to that made in

Goderich; or find some use for their impure stuff, and confine them solely to it. Then and then only will the public be relieved from a spurious and dishonest salt. I can with experience and authority advise the purchasing public that they will get much better value for their money by paying \$2.00 for 100 lbs. of pure salt, than 10c. for a ton of this adulterated salt. In the former they know what they have; in the latter they do not. I am the unfortunate possessor of salt works in Seaford in which salt cannot be made without adulteration, and for that reason I have abandoned the manufacture of it there until such time as the price warrants me that I can make the necessary improvements to obtain pure brine. I will not place this adulterated stuff in the hands of a worthy public, hence I confine my productions to Goderich and Dublin. At the present prices I would tell the farming community they will rarely get full weight of pure salt; but it can be had by paying higher for it. Therefore where you are offered such brands containing weights specified by Mr. Ransford, beware of it, and be sure when you purchase, even if it is 50 lbs., it is salt, not spurious stuff made from trashy adulterations, cheap and injurious. I would therefore in conclusion urge Mr. R. to root out those producers of this slimy, adulterated stuff in his good work, and have a proper inspector appointed.—JOSEPH KIDD, Goderich, Ont.

**Buckwheat vs. Turnips—Maggot in the Bark of Apple Trees—Length of Day for Farm Hands.**—1. Would buckwheat be a substitute for turnips in feeding beef cattle, and what would be the feeding percentage of buckwheat and bran over turnips, per 100 lbs. of each? I have some cattle to fatten next spring, and I think, acre for acre, I can grow more feeding value in buckwheat than turnips. 2. There are some of my apple trees dying from a maggot eating between the bark and wood. Please name the cause and cure. Trees are about seven years old. 3. Are there any hours limited by law during which farm hands are compelled to work? 4. I wish to get a post office in this section of the country. What steps are necessary to be taken?—C. G. K., Ancaster, Ont.

[1. Buckwheat has a higher nutritive value than turnips; but their feeding values cannot be compared unless the buckwheat is taken in its green state, in which case it ought to produce more satisfactory results than turnips. Fed dry, however, if cut early and cured in good condition, buckwheat will still have a slightly higher nutritive value than turnips, but cannot be substituted because it is no longer a succulent food. The succulent state of a food is often more important than its nutritive properties, for which reason turnips would be better than buckwheat, providing your stock received no other succulent food. Buckwheat, as a winter food, can be substituted for clover or timothy, its nutritive value being about the same as clover. The seed of buckwheat has nearly the same nutritive value as rye and barley, but is lower than oats and peas. If you have no roots, bran is the best substitute; although not being succulent, it keeps the bowels open, and makes a good ration with buckwheat. Comparing the nutritive values of these foods with oats at \$1.00 per 100 pounds, green buckwheat is worth 15 cents for the same weight, turnips about 13 cents, wheat bran about \$1.10, and buckwheat seed about 80 cents. 2. There are several insects that eat through the bark of trees. Keep your trees strong and healthy by cultivation and manuring, and you will not be apt to suffer from insect attacks. Your best remedy is to apply a coating of thin lime wash to the bark. 3. The only law, in the absence of a special agreement, regulating the hours for farm hands, is the custom of your neighborhood. The nature of the work may have some modifying considerations. For instance, if you engage a hand for harvest work, not for general purposes, he is not usually expected to lengthen the ordinary hours of field work by performing chores early and late. 4. Write to the Postmaster General, Ottawa.]

**Stable Floors—Stone Drains.**—If you can give any advice concerning the following you will much oblige. We intend keeping cows for dairy purposes and wish to have our stable the best possible: 1. What is the best material for flooring stables for cattle and horses? Flags are about the cheapest here, and we think would be least liable to absorb the liquid manure or give off offensive odors. Some prefer cedar blocks or small stones. 2. Your June number contained a communication and answer on this subject. In conversation with a neighbor, he told me he put in a drain with small stones 25 years ago, and that it was as good to-day as the first year, and works perfectly. He dug about 3 feet deep, by a foot wide, filled half full of small stones, covered over with pea straw and filled in the clay. He left no passage, as they are sure to fill up.—W. M., St. Mary's, Ont.

[1. Flag stones are very good for stable floors providing you can get them perfectly smooth and flat, so that there will be no depressions to retain the liquid. Mortar or cement should be used in the

spaces between the flags. If mortar is used, the top coating of about an inch in thickness should have some finely sifted coal ashes mixed with it. A stable floor made of Akron cement is very serviceable but a cheap and substantial floor can be made as follows: Put a layer of gravel on the bottom of the floor; upon this put about two inches of ordinary mortar, and while the mortar is yet soft, sift coal ashes over it through a fine sieve until the plaster is just nicely covered, and then rub the ashes well into the mortar with a trowel. In two or three weeks the floor will be dry and solid. Such a floor will stand a large amount of wear and tear. Cedar blocks retain too much urine. 2. In a stiff clay soil, stone drains have been known to last for many years, but there is always more or less risk connected with them. If the drain stops up, there is a difficulty in finding out the spot. Where stones are convenient and abundant, the subsoil uniformly heavy, and where there is a good fall, we would not denounce the construction of stone drains, especially where tiles cannot be easily procured.]

**SRR.**—I notice an advertisement in your paper of a fanning mill manufactured by Manson Campbell, of Chatham. I would like to know if it is a good mill. If you will let me know about it in your next issue, you will confer a favor by so doing. I place great confidence in your valuable paper; I feel satisfied that the mill must be worthy of merit, or it would not be advertised in your paper. I see no mention at all of a host of worthless ones that I know of myself. I want to get a mill (independent of cost) that will take out cockle and all other obnoxious seed from my wheat and other grain. If such a mill is manufactured, where is it to be found? I have been out of Canada for eight years, and have forgotten the firms that manufactured fanning mills in Canada. Any information thankfully received.—T. H. R., Colpo's Bay, Ont.

[We do not know any mill manufactured in Canada that will give you better satisfaction than the mill you refer to. Mr. Campbell has added a cockle attachment to his mill which does its work effectually. These mills are in use from Nova Scotia to British Columbia, and we have heard many farmers speak highly of them.]

**Treatise on the Horse.**—Would you please answer in your journal the name of a good, useful work on the horse, suitable for a farmer? What kind of an authority is McClure on the horse? Is sulphite of soda a good medicine for horses?—E. J. S., Ashdown.

[1. R. McClure, M. D., on the "Diseases of American Horses, Cattle and Sheep," is a standard work. W. Williams, M. R. C. V. S. (Edinburgh) is the leading authority on veterinary science and practice. On horse breeding, Mr. J. H. Sanders, Chicago, has written the most recent work. 2. Sulphite of soda is an antiseptic, disinfectant and alterative. It relieves tympany. To the horse it is given in ounce doses.]

**Partial Paralysis in the Horse—Lameness.**—1. I have two young horses three years of age, one a stallion and the other a mare. The stallion last year was let into a field of clover, second growth, and when we found him he was lying on his side and in great pain. We gave him soda to expel wind, hauled him home on a sleigh, put him in slings, and in a few days he was able to walk, but very unsteadily. He was not very well fed. This spring, as I could not let him out to pasture, I fed him in the stable on hay, oats, bran and potatoes. He walks with a weak step in the hind feet, and up hill spreads his legs very wide. 2. The mare got the joint at the junction of the humerus and scapula put out of place. In consequence the joint sticks forward, and the other day we noticed her lame, so I made an examination and find that the scapula has been sprained forward. She walks with her head down, heel up and toe on the ground, and in stepping she swings her foot in a circular direction. As we have no veterinary surgeon in the neighborhood, would you kindly inform me what to do?—J. A. M., Johnstone, P. E. I.

[1. Your stallion is troubled with partial paralysis, and it is not likely that he will completely recover after being affected so long. Apply once every 8 or 10 days a mustard blister over the loin, and give some stimulating medicine, such as powdered nux vomica, in half drachm doses once a day in feed. 2. See that the lameness is not in the foot, instead of in the shoulder. In shoulder lameness the patient generally places his foot down flat. Poultice the foot with hot bran, and if anything irritating is there, it will soon manifest itself. When the coffin joint is sprained, it is often indicated by resting the foot on the toe. If it can be clearly traced to shoulder lameness, the remedy is to apply cold fomentations and a stimulating liniment. The swing of the foot in a circular direction is not always an indication of shoulder lameness.]

The Household.

Special Baths.

A few words on special baths and their uses, would not seem uncalled for just at this time. First, the sponge bath, the form of bathing where the water is applied to the surface through the medium of cloth or sponge, no part of the body being plunged in the water. The practice of systematic, daily sponge-bathing is one giving untold benefits to the follower. Let a person, not over-strong, subject to frequent colds from the slightest exposure, the victim of chronic catarrh, sore throat, etc., begin the practice of taking a sponge bath every morning, commencing with tepid water in a warm room (not hot), and following the sponging with friction that will produce a warm glow over the skin, and then take a five-minute brisk walk in the open air. See if you do not return with a good appetite for breakfast. After having used tepid water for a few mornings, lower the temperature of the bath until cold water can be borne with impunity. The daily cold sponging of a sensitive throat or lungs will often result most satisfactorily if persistently and conscientiously followed. The cold, ante-breakfast sponge bath should, however, be avoided by the weak person and the ones whose lungs are already diseased, as the reaction following might not be strong enough to prevent colds which might hasten fatal results. Another use of the cold bath is to induce sleep by calling the blood to the surface; the congested brain is relieved and sleep comes in consequence. It is on this principle that the winding of the leg in a cold wet cloth proves so efficacious in provoking sleep.

There is still another use of the sponge bath that must not be passed over; it is the bath par excellence for the invalid, and by the addition of rock salt or of alcohol it is made stimulating and at the same time soothing. It is the only form of bath that can be given the fever-stricken patient, by the layman, and when soda or rum has been added, care being taken to squeeze the sponge quite dry, to prevent wetting clothing, no evil results can follow, except in the exanthemata. Hot baths—102°-110°—are invaluable in cases where an immediate reaction is necessary, as in croup and convulsions. They cause relaxation of cutaneous capillaries, relieving nerve centers. When a child is taken in convulsions, it should be quickly stripped of clothing and plunged (all but the face) in the hot bath. Five or ten minutes will suffice to relieve the spasm, when the child may be taken out and rolled up in hot blankets. For croup a longer time may be necessary, and it is well to put a wet cloth on the child's head.—[Amelia A. Whitfield, M. D., in Good Housekeeping.

Trifles.

A noted man once said, "Attention to trifles makes perfection, and perfection is no trifle." How many there are who excuse their little faults, extravagances and neglect of duties, thinking and saying they are but trifles. They do not stop to think the whole world is made of trifles.

What make or mar the happiness of our lives? Answer, Trifles. And yet we call them little things. To treat little things with contempt is no mark of a superior mind. I think

it quite the other way, and they who indulge in it will grow worse instead of better. It may seem to you but a trifle that you have not answered the last letter from an absent relative or friend, and I am sure you might have written a letter the receiver would have thought no trifle. And if we neglect our friends, they will neglect us sooner or later.

There are many who are always making promises, and just as constantly breaking them, probably thinking they are but trifles. I think this one of the worst kinds of trifling. I never can think it a small thing to break a promise; it seems to me it is something sacred. I think it of great importance that parents should keep their promises to their children, and also impress upon them that promises are to be kept. Dexter Smith says of trifles:

"Some kindly act performed, or gentle word,  
Will oft cement a friendship once begun,  
As mighty rivers feel their heart-strings stirred  
By little streams that down the hill-sides run."

Breakfast, Dinner, and Tea.

What do I want for breakfast, dear?  
My wants are all in my mind quite clear:  
You—with your cheerful morning smile,  
And a pretty dress, my thoughts to beguile  
Into thinking of flowers; an earnest word  
That will all through my busy day be heard,  
And make me sure that my morning light  
Beams strongly true, e'en while dancing bright,  
Be certain to give me these, all these,  
And anything else you can or please.  
But dinner—what will I have for that?  
Well, dear, when I enter, doff my hat,  
And turn to the table, I want to see you,  
Standing, just as you always do.  
To make me lose all the forenoon's fret,  
And cheer for the afternoon's work to get;  
Tell me all your news, and I'll tell mine,  
And with love and joy and peace we'll dine.  
Be certain to give me these, all these,  
And anything else that you can or please.  
And what for tea? Have I any choice?  
Yes, dear, the sound of your own sweet voice,  
And your gentle presence. I always feel  
The cares of the day, like shadows, steal  
Away from your soul light; and evening rest  
Come just in the way I love the best.  
So, when you are playing out twilight tea,  
With a special thought in your heart for me,  
Be certain to give me these, all these,  
And anything else that you can or please.  
—Junata Stafford, in Good Housekeeping.

What Shall the Children Read?

This is a question that every mother should decide herself, and judge whether it is good or bad before the child reads the first line. Don't say you've not time—take the time to read a large share of the book, or glance over the paper before it is laid on the table for public use. A quick, intelligent eye, and a mother's eye, also, will do wonders in a turning over of leaves, reading here and there a few words, seeing if the language is pure, the style graceful, the moral healthful. Much of harm is done to the young people by their reading sensational stories of the "blud and thunder" style, smuggled in and read secretly or in some cases openly, in illustrated weeklies. It has caused many boys to rob and fly from their homes, seeking for "worlds to conquer," "bringing up" in a police station and returned home.

Much of the blame is to be traced to the mother—too much indulgence from a mother has ruined more families than a father's harshness—bad books and bad companions being easy stepping-stones to wickedness. A good mother will do a great deal towards forming her children's character. The first few years they are wholly under her influence, and she is all to them; then the school-life begins, and teacher and school-mates broaden the view; but the mother must not relinquish her watchfulness,

but interest herself in their studies, plays, companions, and make herself necessary to their happiness. Keep hold of the children; don't let them grow away from you. A mother should never grow old to her sons and daughters; be one of them and gain their confidence; be their companion, even if you lose the acquaintance of some of your own age. Better make good men and women of your children than be a leader of fashion. But about their reading, "What shall they read?"

If possible, select the books, papers, etc., yourself. You can easily look over the book notices in a weekly, and this usually gives a tolerably fair criticism of scientific works, biographies, histories and novels. Boys usually like tales of adventure, and to a reasonable amount they should be gratified, for what would a man be without bravery and courage? When my boys were at the age to be attracted by such reading, the principal of the grammar school they attended put a list of books on the blackboard for the use of pupils who cared to profit by it. There was the War of the Rebellion, Life of Washington, and others I fail to remember, but various kinds; and for light reading, one or two of Scott's and Dickens's novels. I always felt grateful to him, and think the plan might be followed by the teachers.

At the public libraries, sometimes an attendant will tell of a popular work, but that is not always safe to go by, as not always is a popular book a good one. You must find out about the books in your own way, but be sure to find out in some way. There are many books and papers in the world, some people say too many, but there are more good ones than bad ones, and you must sift them out. Don't trust the innocent child to do it for himself. If a home-life is what it should be, bad books and bad companions will not be there; and mother at home evenings will be a friend and playmate to the boys and girls. By this I don't mean they are to have no friends or mates, but you'll see they will feel so proud of their mother they'll bring them to see you, and you will be able to judge whether they are fit associates or not. In all this, remember the mothers have the love of their children, the fathers the respect, it is said, but let us have both.

TO REMOVE IRON RUST FROM WHITE GOODS.  
—Wet the stained place in cold water, then mix equal quantities of cream tartar and table salt, and place the mixture upon it until the dampness has absorbed in a measure the stain. Place the goods in the sun, and wet the place as often as dry until the rust is entirely removed. To remove fruit stains from table linen, if recent, stretch the article tightly across the tub, and pour boiling water on the stained places, but it must be done before applying soap. Mildewed linen may be restored by putting soap on the spots while wet, and covering them with pulverized chalk. Ink stains, where logwood has been used in the manufacture of it, may be removed by the application of chloride of lime. To remove grease from silk, lay a woolen blanket upon the table, upon which spread the garment smoothly, right side downward; lay a piece of brown paper over the greased spot, and apply a flat iron hot enough to scorch the paper; about eight seconds is usually sufficient time to remove it.

## Family Circle.

## COUSINING!

BY MARIE HARJEN.

I fully intended to pass my summer at Saratoga. In fact, I had already signified my intention to Henry—my husband—and given him due notice that I should need plenty of money to enable Augustus and myself to live nicely, and dress as befitting our station.

Augustus—"Gussie," we always call him—is eight years old, and the cunningest, cutest, cleverest child in the world, I do believe; I suppose I ought not to say so, but I can't help knowing it, if I am his mother. He is so quick and so funny! The other day he ran into the kitchen and got a bottle of blue, and painted all Bridget's fresh-baked pies in the funniest way. I had to laugh, though Bridget was as cross as two sticks, and Henry said he ought to be punished instead of being laughed at. The idea—punish a child for a little harmless fun! True, it was too bad to spoil six nice pies; but then, children must have some amusement.

But I started to tell you why I did not go to Saratoga. Henry must needs go and speculate in Wall street, and the result was, he got the worst of it, as greenhorns usually do; and so, having no money to pay expenses, I was obliged to give my plan up to get lots of pretty things for Gussie and I, and I was just determined I would not stay home all summer.

I was so disappointed I cried my eyes nearly out, and let Henry see just how cruel and selfish he was. I had pinched and managed every way, in order to get lots of pretty things for Gussie and I, and I was just determined I would not stay home all summer.

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the obelisk more than the clothes of a Christian child. Henry was obliged to take him out and buy him another suit; but I took the old ones along, thinking they would make quite a nice present for some one.

It was almost noon before we got to the depot, and we were hardly seated before Gussie began to tease me for something to eat. The mishap with the clothes had driven the thought of lunch quite out of my head; and in the hurry I had left the basket I had had packed with dainties standing on the hall table. What to do I did not know, but I bought the child half a dozen bananas, and myself a "Fashion Book;" and would you believe it, while I was busy looking at the "plates," Gussie ate every one of those bananas? I confess I was frightened at first; but he began immediately to ask for something more to eat, so I only had to laugh.

Some people at the far end of the car were eating their lunch from a basket; and before I knew it, dear little Gussie marched up to them, and in his frank baby way, asked for something to eat.

They gave him a biscuit and the leg of a chicken, and you should have seen the little fellow devour it! When he had it all eaten, he began running up and down the aisle, giving all the passengers playful taps with the chicken bone—he did look too cunning for anything! But of course a stop had to be put to his innocent fun.

One old man had fallen asleep, and his head, which was fearfully bald, was lying on the back of his seat. Gussie, running along, hit it a little blow. Goodness! you should have seen the rage he was in; he jumped up and seized poor Gussie by the arm, tore the chicken-bone from his grasp, and threw it out the window, all the time shouting, "What do you mean, you young rascal, by trying to brain me, hey? Do you think my head was made for you to play shindy with; hey? You're a nuisance, sir—a nuisance! and you ought to be soundly thrashed, sir; that you ought. Where is your mother?"

I was so astonished at what was going on, I had not spoken a word, but at this question I recovered myself. I arose and confronted the man.

"I am his mother," I said, with a withering look, "and I am astonished that a little fellow can't stretch his legs without such a time about it. As for your mother, she is a good deal older than you are, and she has a head hanging way out in the aisle if you didn't want it knocked." With this I turned my back upon him and led Gussie away.

The poor child was so upset that he cried at the top of his lungs for about a half hour, in spite of all I could do to comfort him. At last I bought him some candy and some pop-corn, and that quieted him.

But I really think the child must have been more frightened than I thought, for in about an hour he began to grow restless and feverish, complained of a dreadful headache, and at last was fearfully seasick.

I had a dreadful time with him, and what made it worse was the heartlessness of the passengers. The old man with the bald head rubbed the red mark Gussie had given him, and growled: "The little imp will have to keep still for a little while;" and one woman remarked to another, quite loud enough for me to hear: "Should think he would be sick—his mother has let him eat trash every minute since we started."

I think such remarks perfectly brutal; but I pretended not to hear them, though the tears sprang to my eyes in spite of myself; and one old Quaker lady seeing them, came to me and said:

"Thee must be wiser next time: the child would be better if thee forbade candy and pop-corn. But I will help thee nurse him, for he feels very badly just now." And she did, kind old soul that she was!

I never was so glad to get anywhere, I think, as I was to arrive at Aunt Sarah's. She lives in a fine old place surrounded by trees, and has an orchard as fine as any in the State, while her flowers, even in June, were lovely. I had planned to stay here one week, but as soon as I saw the place I resolved to stay just now.

I am a good liver, and Gussie likes nice things too. So I asked Aunt Sarah if she couldn't give me a piece of chicken, as I felt rather hungry.

"Our spring chickens are too small," she said, "and the old ones would take too long to prepare; but I can give you a nice piece of ham."

"No, I thank you," I answered, coolly, "I never eat pork." But Gussie spoke up and said he wanted some ham.

"No, dear," I said, "mamma don't want you to eat pork; it's not nice." But he insisted so earnestly that at last I consented.

Aunt Sarah did not like it, I know, but as she offered to have it cooked for me, I am sure it was no more trouble to have it brought for Gussie.

When it came, Gus didn't want it, he had eaten so much cake. So I gave him a second dish of preserves instead.

I think auntie must have told Uncle John about it, for next morning at breakfast, when I asked for some cream toast for Gussie, he spoke up and said:

"Jane—I hate to be called 'uncle'—don't you think you ought to teach your boy to be satisfied with what food is placed before him?"

"Oh," I said, pleasantly, "Gussie is so delicate, I find it necessary to invent little dishes to tempt his appetite."

I think that is a mistake," said the old bear, "and while you are here we will try the experiment, for I never allow your aunt to be annoyed by such foolish and unnecessary things. Let him eat

the good, wholesome food the rest have. He will be all the better for it."

I bit my lip, but said nothing, for I was determined to stay my visit out.

Aunt Sarah was real good, and looked so much like mother I couldn't help liking her; but once in a while she would say something too provoking for anything, such as:

"Jennie, you are spoiling that child of yours even worse than your mother spoiled you, and that is unnecessary;" or, "Gussie would be quite a nice boy if you would only make him mind, or showed the least bit of judgment about him." And once she said: "I declare, I believe Gussie is growing almost as selfish as you are, Jennie."

Not very pleasant: still I should have got along pretty well if it had not been for Uncle John. He had no patience with Gussie at all. Just because he let the pig out, and the obstinate creature marched through the cucumber vines and over the strawberry bed, he scolded him like anything. And when he chased the Alderney calf down hill and she fell and broke her neck, he was grumpy for three days, and told Gussie he had rather given fifty dollars than had that calf injured, and he had a mind to give him a sound whipping to teach him to obey.

It was but two days after he began to get over his rage, when poor little Gussie got into fresh trouble.

One morning he crept down out of his chair while we were at breakfast, and pinned Uncle John's coat-tails fast to the table cloth; then he ran out into the garden, and came rushing in, screaming "Fire!" Uncle John jumped up and started for the door, and of course the table cloth was jerked off, and all the dishes thrown down and smashed! Gussie was more frightened than any one else. A hay-stack really was a fire, and in his excitement he had forgotten all about the coat-tail that he had made fast to the table-cloth.

Aunt Sarah fairly danced with fright and dismay, and Uncle John was so angry that he took my poor boy over his knee, and spanked him right before my eyes!

"There," he said, setting him down awfully hard, "young man, if you play any more pranks around here, I'll flog you till you won't know yourself from a bowl of jelly!" and he pranced up and down the room with the table-cloth dragging behind him.

What a fuss over a few old dishes, and a spot or two on the carpet! I really could endure no more; so I packed my trunk, and commanded Uncle John to have the double wagon sent to the door at once. I had the satisfaction of knowing I put him to some inconvenience, for I had heard him say he intended driving to H. on important business that very afternoon.

I presume he thought he had gone too far, for he had the horses at the door long before I was ready, and told me that no sacrifice was too great for him to make in order that I might not lose that train.

Aunt Sarah parted with me quite coolly, and did not even ask me to come again, though she could not let me go without one of her ugly remarks. "That boy of yours is enough to pester a hen in consumption," was her final sa'ute—a remark I did not deign to notice.

Consumption, indeed! Well, her hens are too old to fear that disease.

My next visit was to cousin Hannah. She lives on a farm, and is not very well off; has to work pretty hard, for she has a big family of children, one a little baby.

My Gussie did enjoy himself there, though we couldn't stay very long, for he did keep me in trouble all the time. Hannah's children are nice little things enough, but terribly stupid. Hannah is very religious, and has taught all her small fry to tell the truth on all occasions; the result is, they never do anything naughty but they march in and make a confession to their mother.

My Gus was forever getting them into some scrape, and they were forever sitting on the stool of repentance in consequence—it was ridiculous. One day he got Johnnie who is only six years old, and the stupidest of the lot—to play he had been captured by the Indians, and tied to a tree. Just as he got him safely tied, Gussie saw Dick going fishing, and he forgot all about Johnnie and went with Dick.

Toward night a thunder-shower came up, and then Gussie recollected that Johnnie was out in the orchard tied up, but he was so scared that he didn't dare tell anybody; but just as soon as it stopped raining, he ran and untied him. Of course, Johnnie had been frightened, and had called and screamed till he was so hoarse he couldn't speak; but for all that, I did not see any reason for crying over him as Hannah did, and keeping him in bed for two weeks, even if he did have a cold and cough. I was sorry for him, but no one seemed to consider my boy, and how wet he got his feet going out in the wet grass to untie Johnnie. I had to take his supper up to him with my own hands. I put him right to bed—I was so afraid of croup. Every one was so taken up with Johnnie, who has lived in the country, and accustomed to get wet often.

I told Hannah I was sorry, and really thought Gussie had been to blame; but I did not see the sense in petting any child as she did Johnnie, for it would spoil him as sure as she continued to do it. Hannah and Tom were both a little cool for a day or two; but after a little the affair was forgotten till Gussie got into another scrape!

One rainy morning the children were all in the dining-room playing, and Mary—the oldest girl—was told to watch the baby; but Mary was very fond of reading, and finding one of my magazines, she settled herself in a big chair, and forgot all about the baby, who was playing on the floor.

Gussie is too cute for anything, and as soon as he saw the baby sitting there, he thought of some fun. He came up to my room and got the bottle of "Stratena," a book of pictures, and the scissors; and what

he did with them, I don't know.

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did he do but cut out pictures, and paste them all over baby's fuzzy little head.

I thought I should fall off my chair. I laughed so when Hannah brought her in to show me—she did look so funny! Her little head was bristling with pictures, and a dog was hanging to one eye-brow, and a cat to the other, while a paper bug clung to the end of her little pug nose.

"I can't see how you can laugh," said Hannah, in a very offended voice. "I shall punish Mary, and I think you ought to punish Gussie very severely."

"Pshaw!" I said, "why, no harm is done!" "No harm!" said Hannah, indignantly, "why, none of these things will come off; I don't know what kind of stuff he has stuck them on with, but water makes no impression on it."

It was true; the baby's head could not be freed from its pictured ornaments, till we had worked and worked with warm water and hot cloths, picking up an end here and there, and clipping them off with the scissors. Poor baby's little head was as red as a beet anax, as incident of hair as a billiard ball when we got them all off, and her eyebrows were invisible as well.

Tom was awfully angry, and looked unutterable things, though he said very little. As for me, I went about the house looking sympathetic and grieved, but when I got into my room I laughed till I had a stitch in my side every time I thought of it. Upon my word, that boy of mine is original—no one but Gussie would have thought of turning a baby's head into a bulletin board.

After this things were not very pleasant. Gussie was watched by either Tom or Hannah all the time, so the poor child could not have a bit of fun; and, to cap the climax, Tom began to devote all his leisure time to writing instead of taking Hannah and me for a drive or row as he used. Altogether, the place grew too stupid for anything; so I told Gussie we would not stay any longer, but go and visit cousin Matilda.

I must say neither Hannah nor Tom urged us very hard to remain, though I had been very kind indeed to them. Aunt Hannah the pattern of my last year's dolman, and gave her my old cheese-cloth dress to make over for Mary, but she did not appreciate them one bit. Tom drove me to the station, and saw me fairly off. The last I saw of him, he was standing on the platform grinning like a Cheshire cat. I am sure I don't know what at!

When I got to cousin Matilda's, I found she had left home for a week or two. I should have gone in and made myself at home, but the girl said she had leave to visit her sister while her mistress was away, so that settled that question.

I did make the creature get me some dinner—very unwillingly, I must say. After dinner I got a carriage, a terrible old thing, and drove over to Cousin Jane's.

Judge of my surprise to learn that Jane, her husband, and one child, also Cousin Mary and her husband (who live in the same place), had all gone, three days before, off on a little trip—where, no one seemed to know.

I actually had to stay at the hotel that night, a miserable place, where I had the worst supper and breakfast I ever saw, and the mosquitoes were so thick poor little Gussie could not sleep at all.

Early in the morning I started for Aunt Fortune's. Aunt Fortune is a maiden-aunt of Henry's, and brought him up. I never had seen her but once, and had been avoided visiting her when I left home, but everybody failed me so, I was really obliged to go.

She lives in a place even more beautiful than Aunt Sarah's, but I didn't like her face much—it was so stern I almost felt afraid of her.

She seemed pleased to see us, and kissed Gussie affectionately, telling him that he looked like his father.

All went well enough the first evening, but next morning Gussie began to chase the chickens with the carriage whip in his hand, and one chicken ran right in the way, and I don't know how it happened, but the lash got around its neck and killed it.

I confessed that I expected Aunt Fortune would make an awful time, but she did not. She took Gussie by the hand, made him put the whip in its place, go get a little garden shovel, dig a hole, and bury the chicken; then she asked him to sit on the piazza with her and help shell some peas for dinner.

To my utter astonishment the little fellow seemed to like it. They sat there and chatted for the longest time and then they off together to look for eggs.

After dinner she brought me some muslin, lace, and ribbon, and asked me to make her a cap. "Henry says you are very clever with your fingers. Now let's see what you can do for me!"

Gussie and Aunt Fortune went off together to pick strawberries, and I sat there and sewed just as fast as I could. I am clever with my fingers, and I tried my best, and I made the prettiest cap I ever saw, if I do say it.

"don't you tell me you want, Jane Carsons. You git up and drink every drop of this this minute or I'll hold your nose."

Ugh! I shudder to think of it! There was no use to resist that woman, and I actually had to drink all that loathsome mixture; and what was almost as bad, I was kept in bed all day, and only allowed a cup of tea and a slice of dry toast.

My head did not ache so hard, but I was hungry enough; and I could have cried with vexation. Next day I took those wretched old caps and made them. Meanwhile Aunt Fortune had Gussie like a little lamb. I don't believe he did a naughty thing while he was there, and what was the queerest part of it, he loved Aunt Fortune devotedly, though she made him mind.

Every day for almost two weeks I was made to work like a slave. I could not get out of it; there was always something that required "nice" fingers, and Aunt Fortune would always say: "Jane, my child, you have nothing to do, and a little labor is wholesome." So the "little job" always fell to my lot to do. I got so tired of it, that I made up my mind to go home even if it was August.

One day, auntie took Gussie to the village with her, leaving me, as usual, with a little task; in this case, some mats to "crochet" for her bureau. I worked away for a long time; then having to measure, I went to Aunt Fortune's room to get the size I desired.

In lifting up the pin-cushion, I came across a letter, minus an envelope. Truly I never did such a thing in my life before, as to read any one's letters; but I caught sight of my own name, and before I really knew what I was about, I had picked it up, and read it from beginning to end. This was it:

"Dear Aunt Fortune:—Yours just received. Am sorry you refuse to join the retreat of the proposed victims! We know you are as wise as you are good, but in this case you're rash—awfully rash! You can have no objection to my going to New York, where we speak. All the rest have promised to join us in New York, where we hope to see Henry, before Jane finds her way home. I will write you again from the city. Meanwhile accept my best love and profound sympathy. May the Lord help you!"

"P. S.—If you find you can manage, please confer an everlasting favor on your devoted relations by keeping the 'infliction' as long as possible. TOM."

The letter fell from my hand, and I stood stupidly staring at the floor for at least ten minutes. I was aroused by the sound of wheels, and knowing Aunt Fortune had returned, I recovered my wits sufficiently to put the letter where I found it, and escape to my own room, where I had a real good "crying" spell.

The whole selfish plan was clear as daylight to me: Tom's writing—which occupied all his leisure time—was letters warning all my relations to shut their doors in my face; and inviting them to join him in a sly visit to New York—perhaps to my very house—in my absence.

At first I thought I would go straight home—with-out one hour's delay; but then, I reflected, what excuse could I give for so sudden a flight! I could not say I had read that unfortunate letter, and I could not leave Aunt Fortune's house without some excuse.

I bathed my face and eyes, and tried to get as if nothing troubled me; but in spite of myself, I could not hide from Auntie's sharp eyes the fact that something was wrong. The moment I went down to tea she saw something was amiss.

"What is the matter, Jennie?" she asked, kindly. "Nothing—only my head aches, and I feel very tired," I answered, with perfect truth, for, indeed, my head did ache furiously.

"Poor child," she said, stroking my head gently and tenderly, "your head is very hot, and your pulse too quick; I think you are ill, dear."

For answer I threw my arm around her neck, laid my tired head on her shoulder, and burst into a torrent of tears.

I was half frightened as soon as I done it, and expected to be sent to bed and dosed with "boneset;" but instead of that she put her arm around me, and soothed me as she would a little child.

"Poor little girl," she said, "there, there, don't sob so; Auntie will take care of her. Come to bed, my child," leading towards the stairs. "Come, Auntie will sit beside you and bathe your poor hot head."

So I was taken tenderly up stairs, undressed, and gently helped to fix my aching body in the most comfortable way on the soft, dainty bed, and Aunt Fortune's homely hand drew down the curtains, smoothed my pillow, and bathed my hot head with the softest touch.

After awhile, Gussie stole quietly in, and put his little cool hand on mine; but Aunt Fortune held up a warning finger, and he did not speak, and presently tip-toed away.

But, in spite of Auntie's care, my head ached harder and harder, and my ideas grew confused. I could not remember where I was without an effort which sent a cutting pain through my temples, and forced a groan from my lips in spite of myself. Then I began to grow frightened, and tried to set up and tell Aunt Fortune to send for Henry, but I could not say what I wished. The last thing I remember was Aunt Fortune's voice saying, "Jennie, dear, don't try to speak, your old Auntie knows just what to do; try to sleep, dear, try to sleep"—then a burr-r-r-r in my ears, and I knew no more.

poor, thin, colorless hand, which seemed to belong to me, refused obedience, and fell over the bed's edge, weak and helpless; but my motion had disturbed my nurse, and she arose and bent over me. Hannah, and none other!

"What is it, dear?" she said. "Have I been sick? Why are you here?" I asked, feebly.

"Yes, Jennie, very sick," she replied, "and I am here to help Aunt Fortune nurse you—but you must not talk."

"Is Henry here?" I persisted. "Yes, Jennie, and you shall see him soon; the poor fellow is worn out, and is lying down."

"And you are worn out too!" I said, in spite of her efforts to keep me quiet. "Go and lie down; please do, I'll go to sleep if you will. If you don't—for she began to shake her head—"I'll talk all the time."

So she laid down on the lounge, and soon by her breathing I knew she had fallen asleep.

I lay very still, but I was too weak to solve the riddle, and, while groping helplessly for the clue, I fell asleep.

When I next awoke Aunt Fortune was in the room. As soon as she saw I was awake she came to my side and kissed me tenderly, saying in her brisk, cheerful way, "Now you are a very nice girl to look so bright, and I am going to give you some nice beef tea; and then if you are very good you shall see Henry and Gussie."

I did just as I was bid, and succeeded in finding favor in dear Aunt Fortune's eyes, and was allowed to see Henry and kiss dear little Gussie. Henry was completely unnerved, and trembled like a child as he took me in his arms and held me closely and silently to his heart. And Gussie came in so softly, but oh! how tightly he held my hand, and how lovingly he stroked my cheek and whispered, "Mamma! Mamma! I don't be sick any more; I love you so!"

One day I was lying in that delightful state—neither sleeping nor waking—but partaking of the delights of both, with Hannah sitting near to see that I lacked for nothing, when Aunt Fortune came softly in.

Thinking I was sleeping, they began to talk in gentle tones. Said Hannah: "I am really sorry to go home, Auntie. You were right—Jennie is much better than I thought her, and I own I did her great injustice. If she had died, I should never have forgiven myself that I made no effort to discover the virtues that underlie her faults."

You are a good woman, Hannah," replied Aunt Fortune, "and have nothing of which to repent. Jennie is selfish and vain; but she is patient and lovable, too. We should remember that her father and mother spoiled her by over-indulgence, and she has never learned the lesson which all must learn before they can grow into great and good women—the lesson of self-sacrifice and self-discipline—but I love her, Hannah, and I love her boy, and I will not let her ruin her own life or his, if a word from me can prevent it."

"It shall prevent it!" I cried, sitting up in bed, and the tears streaming down my cheeks. "I never knew that there were such good people in the world as you and Hannah are, Aunt Fortune; and I did not know how bad and selfish I was—indeed! indeed, I didn't! If you'll only teach me, I'll do everything you tell me."

"I've been so ashamed," I went on eagerly, wiping off my tears with the corner of the sheet in my excitement; "so ashamed, all the time I've been living here, and you have been doing everything for me—and if you will only forgive all the selfish things I've done to you, Hannah, I'll try very hard to be just as good as you are."

Aunt Fortune and Hannah were so surprised that I had got most through speaking before they recovered themselves; then they both came and kissed me, and Hannah asked me to forgive her and Tom, who was sorry for what he had done, that he had insisted upon doing penance by staying home and taking care of all the children, while Hannah came to help nurse me.

And Aunt Fortune told me that Aunt Sarah and Uncle John had come as soon as they heard that I was sick, and offered to take me home and care for me; but as they were not allowed to do that, they were waiting till I got well enough to travel, to take me to the White Mountains to "get back my roses."

Well, I did get better, and I did go to the White Mountains, and had a splendid time. I tried, oh, how I tried, to be thoughtful and unselfish, and I did not altogether fail, for one day Aunt Sarah said: "Jane Carsons, I declare you're another critter! I believe it done you good to git sick." And Uncle John patted me on the head, and said: "You are not so bad—n-o-t-s-o-b-a-d."

I repeat it, I tried; but needed help, and when I got home I wrote to dear Aunt Fortune, and begged her to come and stay with me all winter, and, to my supreme delight, she came.

I intend to return her visit next summer, for I think she loves me, and I know I love her. As for Gussie, it is a question already under discussion who shall keep him longest with them, Uncle John or Aunt Fortune; and with Tom and Hannah he is also a favorite, having improved so much as to need only to be put on his honor to do whatever he is made to understand is right.

We ought always to make choice of persons of such worth and honor for our friends that if they should cease to be so they will not abuse our confidence, nor give us cause to fear them as enemies.

### Minnie May's Department.

**MY DEAR NIECES.**—It is said by a French writer that "The distinctive sign of a high born woman is shown by what she knows about the kitchen," and it is true enough. There is no degradation, but everything honorable in the knowledge of what is most necessary for our happy and healthful living, our most familiar needs.

Nothing sounds worse than to hear a girl or woman boasting of her lack of knowledge in domestic matters; and more shame for her if she has allowed her mother or elder sisters to do all and bear the brunt of everything, while she is content to revel in *social accomplishments* or laziness.

Mothers, do justice by your daughters and prepare them for all conditions, adversity as well as prosperity, for there are none, even in the highest social scale, that may not by some cause or other be reduced to abject poverty.

We also wish that our girls could themselves see and understand the value of their home training; we would then have less helpless wives and mothers. But there is many a woman, whether she be mother, wife or sister, who fails, and ever will fail, in her efforts, through lack of an encouraging word from those about her. She may try to do her best, but one thing goes on to another until she is blamed for every thing she does.

If she does not retort or say much in any way, do not think it is *not* because she cannot feel. She grows dull and hopeless and almost indifferent. If only those around could be made to see the real situation of affairs and show more sympathy and interest in small matters; it is *she* instead of *they* who have reason to feel discouraged sometimes, and that alone checks her confidence and love more than any thing else.

If we emphasize failings too much, we destroy self-respect, and then a hopeless feeling comes in, which takes away all spirit from effort.

Try the encouraging and sympathizing word, my friends, especially with the sensitive heart, and see if it does not make a different being of the worried and wearied *household slave*, whose evident care for your comfort (though you may have been indifferent or blind to the fact) shows plainer than words how constantly you have been in the mind of that house mother, even while "breathing the stress and strife of the day," and *anyone* that can nurse a bad temper after that deserves to suffer for it.

Dear girls, learn to do and to know all you can, but be, at the same time, real helpers and sympathizers one with another.

MINNIE MAY.

#### Work Basket.

A PRETTY BUREAU SCARF is made of sapphire blue ladies' cloth, long enough to cover the top of the bureau and hang about eighteen inches down the side. A strip of velvet of a darker shade of blue, three inches in width, and extending from edge to edge of the width of the scarf, is fastened near each end in a vertical position, and red worsted of varying lengths, and about one-half inch apart, tacked down with gold silk floss, worked in the herring-bone stitch running down from the velvet, the

longest piece coming within one inch of the edge. Above the velvet work five open Japanese fans made of various colors of worsted and filled in with silk floss. Daisies may be embroidered on the velvet if desired.

**BOX OTTOMAN.**—Where space has to be economized, especially in the bed-room, this article is particularly useful for clothes or hats and bonnets, according to the size. Any packing case will do, if tolerably stout. First screw a pair of hinges to the cover and four castors to the bottom; then line the box neatly with pink or gray glazed lining, fastening securely by tacks or glue to the bottom and outside of the box. Next make a cushion to fit the top and fasten at the four corners. Now cut a strip of the material, cretonne, sheeting or whatever stuff is intended as covering, the depth of the box, and long enough to go round it, allowing for fullness. Hem the lower edge neatly and gather the top into a band the exact size of the box; this band is nailed on the top edge of the box. Then cut a piece sufficiently large to cover the cushion and lid, and to this stitch a frill, either kilted, gathered or box plaited, and fasten the whole with fancy nails to the lid in such a way that the knitting falls over and hides the band of the box valance. Add a cord or ribbon loop in the middle of the lid to lift it by.

**SCRAP OR WORK BASKET.**—The oblong chip basket in which fruit is bought at the stores can be made into useful as well as ornamental baskets by staining them with red or blue and lining with silk or satin, and tying a ribbon bow on the handle at each side. The small sized basket of the same kind without handles when gilded inside and out, are very pretty satchels for table or bureau.

**CHRISTMAS CARDS.**—Square ones of uniform size, with the white margins cut away, may be used as tiles around a fireplace. They are put on with flour paste, in which a small quantity of powdered resin has been boiled and varnished thickly several times.

Shells filled with flowers constitute very pretty table ornaments.

**GIPT'S FERN CASE.**—This fern case consists of three bars crossed at the top and fastened into a triangular base. A basket is suspended from the center of the case, and the base is decorated with shells, acorns, or corals. The best method of making this case is to have the base first made of wood, then lined with zinc. The sides should hold glass neatly filled into the bars, thus inclosing the plants from the outer air. The height should be about three feet, and width of base two feet on each side. Choose only the smaller growing ferns, and avoid those which branch widely.

One way to beautify a baby carriage and to make the young occupant to appear to advantage, is to make a pillow-case for his pillow of blue silesia; to this may be fastened on the upper side a soft cover of darned net, with an edge of torchon. Fasten this to the silesia with small bows of narrow blue ribbon. Make each bow unlike the others. This can be placed on the pillow when the baby is to be taken out in his best—at other times a plain white pillow-case edged with Hamburg or torchon is good enough for the best of babies.

**HOLDER FOR TEAPOT.**—Materials—Half an ounce each of pale blue and white Germantown

and two No. 14 needles. Cast on 55 stitches with the white. Knit first row plain. Second row, ten plain. Pin in the blue, but do not break off the white. The wool must be carried along the back. Knit seven plain with the white, seven plain with blue, seven plain with white, seven plain with blue, ten plain with white. *Third Row.*—Ten plain with white; bring white wool forward and take blue back between the needles; seven plain blue. Bring forward the blue and take white back; seven plain white. Arrange the wool as before, and seven plain blue; then seven plain white; again seven blue, and finish with ten white. Repeat these two rows until there are four ribs of the blue on the right side, having knitted across eight times. *Ninth Row.*—Seventeen plain white, seven blue, seven white, seven blue, seventeen white. Repeat this until you have four ribs of the blue. Then reverse the colors again by knitting ten white, seven blue, seven white, seven blue, seven white, seven blue, ten white. Continue this until there are seven squares of white knitted in the length. Cast off and sew up the ends of the centre part, leaving the white edge open. Finish with a tassel of each color at both ends.

#### Answers to Enquirers.

**DAISY.**—A simple and effectual remedy for dyspepsia is to abstain from drinking immediately before and during meals, and for an hour afterwards.

**W. L. K.**—1. We think the following a good recipe for whits-wash:—Whiting, four pounds; common glue, two ounces; stand the glue in cold water over night; mix the whiting with cold water; heat the glue until dissolved, and pour it hot into the former; make of the consistency to apply with a common whits-wash brush. 2. A bridal present should never be presented in person; it should be sent to the bride, with the card of the giver attached.

**A READER.**—1. No costume that attracts attention by its oddity is in good form. A black parasol harmonises with any costume. 2. It is said that water in which potatoes have been boiled is effectual in destroying worms which infest house plants.

**YOUNG HOUSEKEEPER.**—To make "elderberry wine"—Crush the fruit, then press through a fine sieve, afterwards through a bag made of unbleached muslin. To 1 gallon of juice allow a gallon of water; then to every gallon add 3 lbs. of loaf sugar; fill a jug or keg (reserving some to fill up with), add  $\frac{1}{2}$  cup of yeast or more, according to the quantity of juice; cover the bung-hole with a bit of net, and set aside to work. Fill up from day to day with the reserved juice that the refuse may flow over the sides. It will usually work from two to three weeks. It can then be racked off, bottled and corked.

**PATTY.**—1. Is your sleeping room thoroughly ventilated? If not, it may be the cause of that tired and listless feeling you complain of every morning. 2. You can sweeten your rancid pie-plates by boiling them in wood ashes and water.

#### Recipes.

**BLACKBERRY SYRUP.**—To two quarts of blackberry juice add half an ounce of cinnamon, half an ounce of nutmeg, half an ounce of

allspice, and a quarter of an ounce of powdered cloves. Boil these together, so as to compound the species with the juice of the berries and to preserve it; while hot add a pint of the best French brandy. Sweeten with loaf sugar to the taste. Three pounds will probably be right for this quantity. Bottle it, and exclude the air. Excellent in case of summer complaint; give to an adult a teaspoonful at intervals of three or four hours, if necessary. To a child give a teaspoonful three times a day, or oftener if desirable.

**FIG CAKE.**— $\frac{1}{2}$  cups of pulverized sugar,  $\frac{1}{2}$  cup butter,  $\frac{1}{2}$  cup of water,  $\frac{1}{2}$  cup corn-starch,  $\frac{1}{2}$  cups flour, whites of 6 eggs, 2 teaspoons vanilla, 2 of yeast powder; beat the sugar and butter to a cream, add vanilla and water, then corn starch, flour and beaten whites of eggs; bake in jelly pans, three in a moderate oven. Filling—whites of 3 eggs, 3 small cups pulverized sugar; put the sugar in a stew-pan and moisten with  $\frac{1}{2}$  cup of water, boil until a thick syrup; do not stir while boiling. Pour the boiling sugar slowly into the beaten whites of eggs, beating all the time, and beat until perfectly light, then take out enough to ice the top of the cake, and stir into the rest one pound of figs cut in small pieces: this will form a stiff paste: spread the cake as if with jelly, then ice the whole cake. Flavoring the icing with vanilla, instead of figs: raisins or sliced citron may be used.

**WATER GEMS.**—Two cups entire wheat flour, two cups cold water, two eggs. Bake in hot gem-pan. These are excellent for those people with whom milk disagrees.

**CRUSTY GEMS.**—One cup milk, one cup entire wheat flour or Graham. Bake in a dozen gems, and they will be very sweet and nutty, though small and mostly crust.

**BUNS WITHOUT YEAST.**—Four cups flour, one large tablespoonful butter, two thirds cup of sugar, two teaspoonfuls extract of lemon, two heaping teaspoonfuls cream of tartar, and one rounding one of soda; or, if baking powder be used, three heaping spoonfuls; one large cup rich milk or sweet cream, a handful of currants. Roll one inch in thickness, cut out with biscuit-cutter, and bake twenty minutes in quick oven.

**CREAM JUMBLES.**—One cup of sweet cream, one teaspoonful lemon extract, one tablespoonful currants, one teaspoonful cream of tartar, one-half teaspoonful soda, flour to roll out rather thick. Eaten while fresh, they are delicious.

**CORNERED BEEF.**—Cut boiled corned beef, when cold, in rather thin slices, and place in spider with one cup boiling water and a piece of butter the size of an English walnut. Boil two or three minutes, keeping the spider covered so the meat shall steam through; then remove to a hot platter, and thicken the water with a little flour; pour over the meat.

**TO PRESERVE NATURAL FLOWERS.**—To preserve natural flowers so that they will look natural, either single or in bouquets, dissolve by agitation and digestion in a closely-stoppered bottle three-quarters of an ounce of clear pale gum copal, coarsely powdered and mixed with an equal weight of broken glass, in one pint of pure sulphuric ether—ethyl ether. Dip the flowers in this liquid, remove quickly, expose to the air ten minutes, then dip again, and expose as before. Repeat dipping and dry in four or five times. Most flowers thus treated will remain unaltered for some time if not handled.

**She Came not.**

Few situations are so sadly pathetic as that of love waiting in vain. This is the key-note running through most of "Evangeline," one of the finest poems of feeling in the language, and gives a tearful meaning to the fidelity of Casabianca, the boy who "stood on the burning deck." The world does not often know the incidents of death and separation among the poor, but now and then an enterprising newspaper reporter learns the facts, and records them with a skilful pen. The following touching chapter in the history of a humble New Orleans family appears in the *Picayune* of that city:

Mrs. Jane Cummings had watched all night with her sick baby, the youngest of five children, and in the morning closed its eyes in death. At noon she told her son Willie, a boy twelve years old, to "stay and watch the house" till she came back, and started to find an undertaker and arrange for the baby's burial. The husband and father was far away from the city at work, and she felt that none but herself could perform the sad duty.

Willie Cummings, true to the trust reposed in him by his mother, kept his post. The sun beat down its scorching rays on the little white head. Clouds then came and obscured the sun; the lightning flashed and it began raining, but still Willie remained, his eyes strained to catch a glimpse of his mother returning.

The afternoon passed, the sun went down, and she did not come. It grew dark, and Willie's little brothers Johnnie and Charlie, and his four-year-old sister, Mamie, huddled together on the porch with him, waiting and wondering. Some sympathizing neighbors came in to look after the children, and joined them in their sad vigil, trying to speak comforting words.

One by one the younger children succumbed to nature and fell asleep, but Willie remained. Waxen candles had been placed at his little dead sister's head, and Mamie was asleep in the absent mother's bed.

Eleven o'clock came, and a cab drove up. "Does Mr. Cummings reside in this house?" queried a male voice.

An affirmative answer greeted the questioner, and the man in the hack stepped out. Not knowing that the family were unaware of what had detained the mother, he blurted out, "Mrs. Cummings is lying in the dead-house at the Charity Hospital."

A shriek of agony from Willie and a wail of sorrow and sympathy from the ladies present proved too plainly that his words were the first intimation they had of what happened. Mrs. Cummings, after leaving her house, had proceeded down Howard to Felicity street, then to the corner of Liberty, when she crossed and started out Euterpe street. She intended to walk to the undertaker's, for she was poor, and to save five cents was an object with her. She was greatly excited and worried. She had been exposed to the heat of the sun for the better part of the forenoon, and was, besides, suffering with heart disease.

As she crossed the street she was seen to stagger, and she leaned for an instant against the side of the house at the corner. Gathering courage and strength, she again started, walked a few steps more, tottered, and fell insensible to the sidewalk.

It was some time before the body attracted the attention of passers by. Some saw her, but believing her to be intoxicated, they walked on. For more than an hour she lay there, the sun beating down on her, when finally two police officers came up, and the charity wagon was sent for.

Life was not extinct, and as quickly as possible she was conveyed to the Charity Hospital, and at 3 45 she reached that institution.

Dr. Jamison attended her, but saw at a glance that all his skill and science would avail nought; she was doomed, and in fifteen minutes afterward was a corpse. Eight dollars—the money she had placed in her pocket to buy her little darling's coffin—was found in her pocket.

**Princess Alice.**

Hardly any book has been published for years which has a more decided moral tone, or is more helpful to the souls of those who read it, than the letters of Princess Alice, printed by permission of her mother, Queen Victoria.

The Princess was a woman who would have adorned any station, and whose character can best be described by the word *lovely*. Her devotion to her mother, to her husband and to her children was intense. She was always ready to sacrifice her own pleasure, her time and her labor to them.

Perhaps it will be said that these are not uncommon traits, and that of thousands of women the same statement is true. That is so—but no one can read the Princess's letters, which reveal her inner life, without discovering that her devotion was of a different character and of a more earnest type than is that of most women. Her death, which was due to her ardent love for her child, also proves it.

She was deeply and sincerely religious. She referred everything that came to her to the all-wise providence of God. But her faith was at one time disturbed and interrupted. It was during her residence at her husband's capital in Hesse.

The famous German skeptic Strauss lived at Darmstadt, and the Princess wished to know him. They met in 1866, and for four years they met frequently. The philosopher had a great influence over the Princess. She began to doubt—then to disbelieve.

Strauss flattered her by proposing to dedicate to her his work on Voltaire. As she then felt she did not object to the compliment, and accepted the dedication. But the time came when she learned the emptiness and the unsatisfactory leanness of soul that infidelity brings.

She had just returned from a pleasure trip to Italy, and while still resting from her journey, was playing with her two little sons. Prince Ernest ran into the next room, and his mother followed him. They returned a moment later, but in the meantime Prince Fritz had fallen out of the window.

The poor little fellow was mortally hurt upon the stone pavement. A few hours later he died in his mother's arms. That was the time to test the value of *no faith*. A trust in God had carried her hopefully, if sadly, through the loss of her father,—Prince Albert. What could philosophy do for her now? She wrote the answer afterward.

"The whole edifice of philosophical conclusions which I had built up for myself, I find to have no foundation whatever—nothing of it is left—it has crumbled away like dust. What should we be, what would become of us, if we had no faith—if we did not believe that there is a God who rules the world and each single one of us?"

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES,—The months of July and August appear to have been intended for rest by the Author of the seasons. Through the stimulating cold of winter, the fresh, mild breezes of opening spring—even later, when all nature is awake, and we open the doors and windows to catch the sound of birds and insects, and to breathe the odors of buds and blossoms—we can work with a will and feel interested. As summer advances, while we are alive to its beauties, we like to sit under the trees, on the piazzas, or lie listlessly in the hammocks. But to most of us rest does not mean idleness, and to be obliged to spend our time for many days with head and hands unemployed, would be misery. So while it is well to have a little rest from studies and a change of scene and company in the summer season, it is a pleasure to have some lighter work to take up, and I am sure every one of my nephews and nieces might contribute something to Uncle Tom's department during the holidays; if you cannot make good puzzles you might at least write a nice little interesting letter, telling us about yourselves, what you are doing and how you were spending the holidays, and relate any pleasing incidents that you may have had. You do not know how encouraging and pleasing such letters would be to me, as well as to all the readers of our department; boys, especially, generally have lots to tell, what with their boating, fishing, swimming and outdoor sports; and the girls, though their amusements are not so boisterous, have equally as good a time as the boys, and I hope you will all try and write me a good letter for September. I will publish the best of each. I gladly welcome some new competitors in the puzzle department. I should like to have a great many more, and there would be a good chance to catch up and even pass the others yet, as the new competition only began last month. UNCLE TOM.

Puzzles.

1-DROP-VOWEL PUZZLE.

B-t-t-r l-t th-n n-v-r
T-m-nd-nd -v-r-r
-r th-ch-ne-s g-r
T-m-l-st w-c-nt r-c-v-r
Th-p-st-s p-st-nd-v-r
Th-pr-s-nt-s--r-wb.

LIZZIE C. WATT.

2-NUMERICAL ENIGMA.

My whole is the name of a poet we admire.
A 4, 5, 6, 1, 11, 10 of the lyre 2, 8, 4, 11, 10 had 7, 3, 10, 11
Of vigor and dignity, yet there was given
To this bard a richness, a sweetness and ease
Much better suited the fancy to please.
The 2, 11, 5, 10, 1, ever own
That his lyre had the soul of deep love in its tone.
And though he now 10, 11, 6, 1, 6, low,
In 11, 5, 10, 1, 2, his fame still shall glow;
While love shall find 10, 9, 3, 4, in the heart,
His cherished remembrance can never depart.
LIZZIE C. WATT.

3-TOP.

1. Qualified. 2. To regret. 3. A writing fluid. 4. A number. 5. Belonging to the earth. 6. A disease of the eyes. 7. A bright color. 8. Smoky. 9. An insect. 10. A letter. My primals is a haughty, supercilious person; and my centrals is punishment.

FAIR BROTHER.

4-TRANSPPOSITION.

Won dolg si tof fro vleihs genhadc
Dna hatt rof porpce ord,
Utb sheet wot entw aawy of tegv
Ceah herto ganec off deal.

E. MANNING.

5-DROP-VOWEL PUZZLE.

-f-v-ry-n-wh-'s pl-y-d th-f--l
H-d d--d-nd t-rn-d t-cl-y.
H-w m-ny p-pl-w-ld b-1-ft
-l-v--nd w-l t-d-y. E. MANNING.

6-CHARADE.

My first is to see, to look or behold.
My second a union assists to unfold;
My third is a description of action in space.
My total is a changing from place to place.

7-CRYPTOGRAPH.

Xselrg yjzesbdl fszex mgt nejszsb
Xkioo jrg ldr xuyrg xrm
Ejfreo xlmx sz mndlo bejszsb
Emludsz jrg yo ejlr mze yr.

8-ILLUSTRATED REBUS.



9-POETICAL PUZZLE.

"She comes in the spring, all the summer she stays,
And dreading the cold, still follows the sun;
So, true to our love, we should covet his rays,
And the place where he shines not, immediately ahun."

"And now the herald lark
Left his ground nest, and towering to descry
The morn's approach, and greet her with his song."

The authors of the above stanzas will be found in the following cross-words. Who are they?
My first is found in "Campbell."
My second in "Goldsmith."
And my third is in "Longfellow."
My fourth is in "Prescott."
My fifth is in "Tennyson."
While my last is in "Arnold."

FAIR BROTHER.

Answers to July Puzzles.

- 1-India and Colonial Exhibition.
2-PARAPET 3-HIT
ARARAT H
RABID CREEP
ARIID CURRENT
PAD DEPOSIT
ET WAGER
T ALL
A RE
4-A gift long waited for is sold, not given. APT
WHY
BIT
DECAY
DISSSENT
5-Think truly, and thy thoughts
Shall the world's famine feed;
Speak truly, and each word of thine
Shall be a fruitful seed;
Live truly, and thy life shall be
A great and noble creed.
6-Canada the Free. 7- D O E
C E M D A R
8-Base Ball. D E M E R I T
9-Longfellow, Shelley, D O D E C A G O N
E A R A C H E
R I G H T
10-To know, esteem and love, T O E
And then to part, N
Makes up life's tale to
Many a feeling heart.

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

Pricilla A. Fairbrother, Chas. E. Smith, May G. Monk, Robert Wilson, Emma Demee, Robert J. Risk, Ella Simpson, Geo. L. Montgomery, Minnie Armstrong, Mary Anderson, Frank J. Gordon, Thos. H. Murray, Annie Newcombe, Lizzie C. Watt, Wesley H. Harvey, David A. Moore, Howard J. S. Smithson, Mary Morrison, Alice Smith.

It is no great matter to live lovingly with good-natured, humble and meek persons; but he who can do so with the froward, wilful, ignorant, peevish and perverse, hath true charity.

The law of the harvest is to reap more than you sow. Sow an act, and you reap a habit; sow a habit, and you reap a character; sow a character, and you reap a destiny.

The Spider's Appetite.

It is not everybody who knows how much a spider can eat. Most of us have derived amusement, and perhaps instruction, from watching the subtle arrangements and devices of the little tactician, with a view to capture some dainty little insect, and many of us would know exactly where to place this interesting creature in the classification of animal life, but probably very few of us have any idea what a voracious gourmand the spider is. A gentleman, scientifically inclined and luxuriating in the rare possession of leisure, has recently given to the world some very curious and startling statements in regard to the archimedean appetite. He captured a spider and kept it in confinement, supplying it liberally with food, and carefully recording his observations. He estimated that the creature ate four times its weight for breakfast, nine times its weight for dinner, thirteen times its weight for supper, finishing up with an ounce of food. In the same proportion, a man of average weight would demolish an ox for breakfast, two more for dinner, a couple of bullocks, eight sheep and four pigs for supper, and then a hundred weight of fish to prepare the way for an aldermanic banquet before retiring to bed.—[Christian Journal.]

The Capacity for Thinking.

I have asked, said Mr. Goschen in a recent lecture at London—and it is a good test—can you, on a long railway journey, think out a problem on a great social subject? Will you begin to think out that problem when you have before you two hours in a railway carriage? This is simply a form of mental indolence. People can not concentrate themselves and bring their thoughts sufficiently together to do spontaneous work. It partly comes from this, again, that they will not give themselves time. From that they get out of the habit of steady thought, and they will not dwell long upon one subject. Both in-reading and in thinking you never get far unless you will have a long consecutive tete-a-tete with your book or with some problem. People read and think in the same way that they visit their acquaintances and friends. They have an exciting conversation for a few minutes, and then the visit is over. If you wish to see a landscape or explore a character you must take time, and it must be done by steady, consistent, and continuous thought. I bespeak, therefore, for reading and for thinking greater deliberation, more careful choice, consecutiveness and continuity, and above all, that it should never become necessary to hurry through anything, whether it be a lecture, book, or problem.

Drove a Duke from Her Pew.

"Be ye careful to entertain strangers," was a wise command, teaching courtesy and hospitality, "for thereby some have entertained angels unaware." The woman of the following incident was unmindful of this obligation, and but little sympathy can be felt for her chagrin and discomfiture at the result.

The Duke of Wellington once walked from Walmer Castle to Deal to attend Trinity Church. Not finding the sexton to show him a seat, he entered a roomy-looking pew in front of the pulpit and sat down. Soon after a fashionably-dressed, haughty woman entered, and, both by her manner and expression of



face, showed that she felt his presence an intrusion. As the stranger bore her indignant glances without moving, she said, bluntly:

"Sir, you will find free seats in the rear, and I beg you to find a seat there or in some other pew."

"I beg your pardon for intruding," said the Duke coldly, as he arose and left the pew.

At the close of the service a friend said to the woman: "My dear Mme. —, you were honored to-day; but why did the Duke leave you so abruptly?"

Mme. —, construing the remark as a sarcasm on the impudence of the stranger, replied:

"The presumptuous fellow! Then you saw him in my pew? I had to tell him there were seats for strangers in."

"Why, surely," interrupted the friend, with almost horror in her tone, "you knew that the man was the Duke of Wellington!"

The woman's mortification over her rudeness to the man she would have honored, caused her a fit of sickness.

**A Pithy Sermon.**

Many a sermon has been spun out to an hour's length that did not contain a tithe of the sound moral instruction and counsel to be found in the following brief and pithy sermon from the pen of that witty and racy writer, the late Rev. Dr. John Todd:

"You are the architects of your own fortunes. Rely upon your strength of body and soul; take for your motto, self-reliance, honesty, and industry; for your stars, faith, perseverance and pluck; and inscribe on your banner, 'Be just, and fear not.' Don't take too much advice; stay at the helm and steer your ship. Strike out. Think well of yourself. Fire above the mark you intend to hit. Assume your position. Don't practice extensive humility. You can't get above your level. Water don't run up hill. Put potatoes in a cart over a rough road and the small ones will go to the bottom. Energy, invincible determination, with right motion, are the levers that move the world. The great art of commanding is to take a fair share in the world. Civility costs nothing and buys everything. Don't drink; don't smoke; don't swear; don't gamble; don't lie; don't deceive nor steal; don't tattle. Be polite; be generous; be self-reliant. Read good books. Love your fellow-men as well as you love God. Love your country and obey its laws. Love honor. Always do what your conscience tells is your duty, and leave the consequence to God." — ["Good Cheer."

**Yankee Speculation.**

Some astute observer has remarked that if two Yankees were cast away on a desert island, they would each make a fortune by swapping jack-knives. This money-making propensity of the Yankee was illustrated some years ago in South Africa.

An enterprising son of New England had found his way to the Cape of Good Hope. Looking around for a chance to speculate, the idea struck him that it would pay to exhibit a party of Kafirs in London.

In a short time he had collected a half-dozen Kafirs from a farm within fifty miles of Cape Town. He had them instructed in the native

dances and took them to London, where they appeared clothed in skins and lustrous in paint.

A Kafir war was then going on, a fact of which the speculating Yankee made good use of his show-bills. These Kafirs became the rage, and thousands of Londoners and visitors to that city thronged the exhibition hall.

It happened that about that time a Dutch farmer from the Cape, named De Beer, was in London. Seeing a show-bill advertisement of the appearance of wild Kafirs, taken captive in war, he went to the hall. The performance went on as usual, until suddenly two of the Kafirs rushed from the stage, and clasping the farmer round the neck, shouted out in Dutch—

"Why, here is old Papa De Beer!"

The other Kafirs jumped off the stage and threw their arms about the Dutchman. He struggled with many Dutch expletives to release himself from their greasy embraces.

The audience, thinking the war instincts of the savages had led them to attempt to murder a spectator, were thrown into great excitement. It was with difficulty that the Dutchman could make himself heard. He finally calmed the excitement by explaining that these wild Kafirs were his own farm-hands, whom the Yankee speculator had enticed away some six months before.

**Art of Using Perfume.**

There are few ladies who resist the pleasure of using perfumes, and if they are not used in too great quantities, they are not objectionable. It is a good plan to use only one kind of perfume such as violet, heliotrope, rose geranium, etc. Instead of saturating the handkerchief, use them in the shape of sachet powders. Put them on cotton in small bags of muslin, silk, or satin, and strew them in every part of the bureau and wardrobe, so that a delicate, fresh, almost nameless perfume pervades every article of dress from the hat to the boots. Sachets filled with powderedorris root will give a sweet, wholesome odor that never becomes so strong as to be disagreeable. The use of too strong extracts of perfumery is not considered in good taste.

**Sweet-Minded Women.**

So great is the influence of a sweet-minded woman on those around, that it is almost boundless. It is to her that friends come in seasons of sorrow and sickness for help and comfort; one soothing touch of her kindly hand works wonder in the feverish child; a few words let fall from her lips in the ear of a sorrowing sister does much to raise the load of grief that is bowing its victim down to the dust in anguish. The husband comes home, worn out with the pressure of business and feeling irritable with the world in general; but when he enters the cosy sitting room, and sees the blaze of the bright fire, and meets his wife's smiling face, he succumbs in a moment to the soothing influences which act as the balm of Gilead to his wounded spirits that are wearied with combating with the stern realities of life. The rough school-boy flies in a rage from the taunts of his companions to find solace in his mother's smile; the little one, full of grief with its own large trouble, finds a haven of rest on its mother's breast. And so one might go on with instance after instance of the influence that a sweet-minded woman has in the social life with which she is connected. Beauty is an insignificant power when compared with hers.

**Little Ones' Column.**

**One at a Time.**

One step at a time, and that well placed,  
We reach the grandest height;  
One stroke at a time, earth's hidden stores  
Will slowly come to light;  
One seed at a time, and the forest grows;  
One drop at a time, and the river flows  
Into the boundless sea.

One word at a time, and the greatest book  
Is written and is read;  
One stone at a time, and a palace rears  
Aloft its stately head;  
One blow at a time, and the tree's cleft through  
And a city will stand where the forest grew  
A few short years before.

One foe at a time, and he subdued,  
And the conflict will be won;  
One grain at a time, and the sand of life  
Will slowly all be run;  
One minute, another, the hours fly;  
One day at a time, and our lives speed by  
Into eternity!

One grain of knowledge, and that well stored,  
Another and more on them;  
And as time rolls on your mind will shine  
With many a garnered gem  
Of thought and wisdom. And time will tell.  
"One thing at a time, and that done well,"  
Is wisdom's proven rule.

—Golden Days.

**A Summer Visitor.**

Have you heard the lively jade—  
(She's a gossip, I'm afraid),  
Who has lately come to town for the season?  
Making such a clack and clatter,  
Such a chatter, chatter, chatter,  
Without a grain of dignity or reason.

And she never seems to care  
To let others have a share  
In the gabble, for she keeps up such a din  
That no person can be heard  
Who may try to say a word,  
When once she takes a notion to begin.

And this saucy little elf  
Always contradicts herself,  
So she can't be called reliable, 'tis clear,  
And she has such funny ways  
Of repeating all she says  
That her talk is quite monotonous to hear.

Her name is what, you ask?  
It would be an easy task  
To learn it, for she's always, always telling,  
How it sounds on summer eves  
And she sits amongst the leaves,  
And thinks she's all the singing birds excelling.

It is all she has to say,  
As she talks and talks away,  
In the branches where cunningly she's hid;  
But of it she must be proud,  
For she always calls aloud:  
"Katie Didn't! Katie Didn't! Katie Didn't!"

**Fashionable Piano Playing.**

Oliver Wendell Holmes says:—It was a young woman with as many white flounces around her as the planet Saturn has rings, that did it. She gave the music stool a whirl or two and fluffed down to it like a twirl of soap suds in a hand basin. Then she pushed up her cuffs as though she was going to fight for the champion's belt. Then she worked her wrists and hands, to limber 'em, I suppose, and spread out her fingers till they looked as though they would pretty much cover the keyboard, from the growling end down to the little squeaky one. Then these two hands of hers made a jump at the keys as if they were a couple of tigers coming down on a flock of black and white sheep, and the piano gave a great howl as if its tail had been trod on. Dead stop—so still you could hear your hair growing. Then another howl, as if the piano had two tails, and you had trod on both 'em at once, and then a great chatter and scramble and string of jumps, up and down, back and forward, one hand over the other, like a stampede of rats and mice more than anything I can call music.

**Commercial.**

THE FARMER'S ADVOCATE OFFICE,  
London, Ont., Aug 2, 1886.

A more favorable month for haying and harvest could not be desired than July, 1886, has been. While the yield of hay has been somewhat light, the fine condition in which it has been saved will, to a large extent, make up for the deficiency in the weight.

Although many of the crops have been suffering very much for want of rain, still the cool nights and few light showers have helped them much. Pastures and root crops are suffering the most, and the latter cannot amount to much in some sections without a heavy, soaking rain.

**WHEAT.**

The weather has been very favorable for the maturing and cutting of the fall wheat, and a large percentage of it is now in the barns. The sample will be very fine. Prices rule much as they did early last month. The U. S. markets took a jump up, caused partly by speculators and unfavorable crop reports, but the late advance has all been lost, and the markets are without any material change. In the southern wheat growing States the deliveries of new wheat have been very large for the time of year; the farmers are reported as being free sellers at the current prices.

**TOTAL WHEAT CROP.**

The estimated production of winter and spring wheat in the United States in 1886, according to the special investigations of the Cincinnati Price Current, with the crop and acreage harvested in 1885 as officially reported, are shown in the following:

	Crop.		Acreage.	
	1886.	1885.	1886.	1885.
Winter	295,000,000	211,814,000	24,725,000	22,146,350
Spring	140,000,000	145,298,000	12,000,000	12,042,896
Total	435,000,000	357,112,000	36,725,000	34,189,246

These estimates imply a gain of 78,000,000 bushels in the production compared with 1885, representing 83,000,000 increase in the winter crop, and 5,000,000 decrease in the spring growth. The average quality of the winter grain will be better than last year, from present indications.

**COMPARISONS.**

As an item of interest in this connection we submit below compilations by the Cincinnati Price Current from Department of Agriculture reports, showing the annual production of winter and spring wheat and total crops, with the yearly average yield per acre, for a period of ten years—the production being stated in millions of bushels:

Year	Millions of bushels.		Average yield.	
	Winter.	Spring.	Winter.	Spring.
1876	229.4	59.9	289.3	11.3
1877	258.7	105.4	364.1	13.2
1878	309.1	111.0	420.1	13.8
1879	332.4	116.4	448.8	14.7
1880	383.2	115.4	498.6	13.8
1881	280.4	99.9	380.3	10.2
1882	383.9	120.3	504.2	14.0
1883	285.3	134.9	420.2	10.8
1884	356.2	156.5	512.7	12.6
1885	211.8	145.3	357.1	9.6
Aver.	303.0	116.5	419.5	12.4

All the available evidence considered we regard the following as representing a conservative or minimum view of the present indications as to the spring wheat production, and the aggregate crop, as compared with last years report of wheat harvested:

	Estimated, 1886.	Crops, 1885.
Minnesota	28,000,000	34,285,000
Iowa	28,000,000	30,332,000
Dakota	26,000,000	27,913,000
Nebraska	16,000,000	19,828,000
Wisconsin	13,000,000	15,665,000
N. E. States and Terr.	14,000,000	17,275,000
Total spring	125,000,000	145,298,000
Winter production	300,000,000	211,814,000

Total crop, bushels. 425,000,000 357,112,000  
We consider the chances as more in favor of a larger out-turn than these figures indicate than a smaller one, and that it is wholly unreasonable to count upon the present outlook as justifying anything less than a crop of 425,000,000 bushels, with possibilities of 10,000,000 to 15,000,000 bushels in excess of this quantity.

The stock of wheat in Chicago shows an increase of 366,000 bushels compared with a week ago, and a decrease of 6,699,000 with a year ago. Corn shows a decrease of 124,000 bushels compared with a week ago, and an increase of 1,214,000 with last year. The Chicago visible supply of wheat shows an increase of 3,142,000 bushels compared with a week ago, and a decrease of 7,293,000 with the same date last year. Corn shows an increase of 3,972,000 bushels compared with a year ago. The New York visible supply of wheat shows an increase of 3,631,000 bushels compared with two weeks ago, a decrease of 5,341,000 with 1885, an increase of 19,438,000 with 1883, an increase of 14,494,000 with 1882. Corn shows a decrease of 269,000 bushels compared with a week ago, and an increase of 2,662,000 with a year ago.

**HOGS.**

The demand for live hogs has been good for the time of year, and prices very fair. There has been some depression in the provision market during the week, due more to temporary influences of speculative operations than to any unfavorableness in the general position, which is supported by a continuance of a good distribution of product for consumption, both in this country and for export. There is some apprehension concerning the condition of a portion of the corn crop west of the Mississippi river, and if this continues, or is made more emphatic, it will not be improbable that the early effect will be to enlarge the offerings of hogs, which will mean a lighter average weight and a lessened number later in the season than otherwise would be the case. The exports of both lard and meats for the week at the four ports exceeded the aggregate for corresponding time last year. Stocks in the west are light everywhere outside of Chicago.

Special reports to the Cincinnati Price Current show the number of hogs packed from March 1 to date and latest mail dates at the undermentioned places, with comparisons, as follows:

	1886.	1885.
Chicago	1,650,000	1,620,000
Kansas City	569,381	480,000
Milwaukee	136,000	132,000
Indianapolis	200,000	111,000
St. Louis	230,000	152,000
Cincinnati	79,000	64,000
Cedar Rapids	137,600	112,850
Cleveland	120,840	79,058

**LIVE STOCK.**

The Montreal Gazette reports the British live stock trade as follows:  
The slight improvement in trade noted a

week ago has been of short duration, and since then the markets have dragged miserably without any indication of change for the better, although the lighter receipts now due may have an improving effect this week. Receipts from Canada and the United States, although smaller in number, have been fair and quite enough for the present condition of the markets, especially as supplies from elsewhere have continued to come in liberally, resulting in heavy offerings everywhere. The action of buyers has been extremely indifferent and demand has ruled very weak. There were large offerings at Liverpool to-day, but trade dragged miserably, and matters were not improved by the heavy rain storm which prevailed. Sellers submitted to reduced values and prime Canadian steers were sold at 12c. Fair to choice grades were at 11½c, poor to medium at 10½c, and inferior bulls at 8c. to 9½c. The sheep trade has come in for a larger share of the current depression on heavy supplies and a dragging demand. Values have declined one cent per pound, and at Liverpool to-day transactions were made on the following basis: Best sheep 12c., secondary qualities 10c@11c., merinos 9½@10½c., and inferior and rams 7c@8½c. The foregoing quotations are calculated at 4.80 in the £. A year ago now the cattle market was seriously depressed. The meat markets are cabled without much change. Liverpool quotes 6d for hindquarters and 8d for forequarters per lb., and London 3s 9d for hindquarters and 2s 1d for forequarters per 8 lbs. by the carcass. The following table shows the prices of prime Canadian steers in Liverpool on the dates mentioned:—

	1886. per lb. cents.	1885. per lb. cents.
July 26	12	12½
July 19	12½	14
July 12	12	14
July 5	13	14½
June 28	13	15
June 21	13½	14½
June 14	13	13½
June 7	14½	14
May 31	14	14
May 24	13½	14
May 17	13	14
May 10	11½	15
May 3	13	13½
April 26	12	12½

The following were the exports of live stock from the port of Montreal for the week ended July 24:—

	To	Cattle.	Sheep.
St. Asaph	London	36	1,490
Buenos Ayrean	Glasgow	483	943
Lake Huron	Liverpool	441	1,181
Grasbrook	London	140	737
Batavia	Liverpool	535	1,116
Erl King	London	243	789
Alcides	Glasgow	510	1,235
Dracona	Bristol	183	1,565
John Knox	Liverpool	203	1,688
Erl King	London	243	789
Texas	Bristol	249	1,429
Total		3,266	12,962

Previous week	583	2,000
Cor. week, 1885	2,749	4,561
Cor. week, 1884	1,067	2,065
Cor. week, 1883	1,865	4,316
Cor. week, 1882	705	4,583
Cor. week, 1881	1,700	5,276
Cor. week, 1880	907	7,042
Cor. week, 1879	379	6,734
Cor. week, 1878	848	2,736
Total to date	30,538	84,927
To same date, 1885	31,373	104,017
" " 1884	25,079	10,400
" " 1883	23,545	15,580
" " 1882	12,788	23,710
" " 1881	20,525	19,815
" " 1880	21,033	35,061
" " 1879	12,038	25,883
" " 1878	7,131	6,497

**CHEESE.**

June make have been all cleared out, and are now on the way to British ports. The price realized has been much better than was at one time expected, seven and one-half to eight cents being paid for the last half of the month's

make. Holders are now asking 8½c. to 9c. for July, and buyers are not disposed to pay more than 8c. to 8½c., which is all they are worth in the face of the prices quoted from England, and the disposition on the part of dealers on that side to keep stocks low and buy from hand to mouth. The dry weather has shortened the make very considerably, and should it continue will soon shorten the make seriously.

BUTTER.

The Montreal Gazette says:—  
The improvement that has been noted in creamery butter has been more than sustained, in fact, higher prices than late quotations have been paid. Exporters, too, seem to have more orders on hand than can be filled, as the quantity of desirable goods available is comparatively light. Over 20c. has been paid, and it was rumored that orders were received to-day which admit of a good advance over that being paid. The mail news received cannot be cabled encouraging, still the fact remains that high prices have been paid on actual orders. Dairy goods to-day were neglected, with the movement confined to the ordinary local trade.

Creamery, choice.....	20	@20½
"    lower grades.....	18	@19½
Townships, finest.....	00	@15
"    fair to good.....	13½	@14½
Morrisburg, finest.....	00	@15
"    fair to good.....	13	@14½
Brookville, finest.....	00	@15
"    fair to good.....	13	@14½
Western, finest.....	00	@13
"    fair to good.....	12	@12½
Low grades.....	10	@11

We would call the attention of our readers to the marked difference in price between creamery and western finest.

APPLES.

Late English advices report the crop of apples in England and on the continent as being very light. Owing to the severe frosts in England during the time the apple trees were in blossom, followed by a period of dry weather, the reports from the different fruit districts are all to the same effect—"Few or no apples this year." On the continent the reports from the different fruit districts are much the same.

PRICES AT FARMERS' WAGONS, TORONTO.

Wheat, fall, per bushel.....	\$0 75	@ 76
Wheat, spring, do.....	0 75	@ 76
Wheat, goose, do.....	0 70	@ 00
Barley, do.....	0 60	@ 60
Oats, do.....	0 39	@ 40
Peas, do.....	0 55	@ 56
Dressed hogs, per 100 lbs.....	7 00	@ 75
Beef, forequarters.....	3 50	@ 60
Beef, hindquarters.....	7 50	@ 80
Mutton, carcass.....	6 50	@ 80
Hay, (old).....	12 00	@ 14 00
Hay, (new).....	6 50	@ 8 00

PRICES AT ST. LAWRENCE MARKET, TORONTO.

Chickens, per pair.....	\$0 50	@ 65
Ducks, do.....	0 60	@ 70
Butter, pound rolls.....	16	@ 17
Butter, large rolls.....	13	@ 15
Butter, inferior.....	10	@ 11
Lard.....	10	@ 10
Bacon.....	10	@ 12
Turkey.....	75	@ 150
Geese.....	70	@ 85
Cheese.....	9	@ 10
Eggs, fresh, per dozen.....	15	@ 16
Potatoes, per bush.....	80	@ 90
Apples, per bbl.....	2 00	@ 3 00
Cabbage, per doz.....	60	@ 70
Turnips, per bag.....	30	@ 40
Carrots, per doz.....	15	@ 18
Beets, per peck.....	15	@ 20
Parsnips, per peck.....	15	@ 20
Onions, per bag.....	75	@ 1 00
Gooseberries, per bush.....	1 25	@ 1 75
Cherries (per bush).....	2 00	@ 2 25
Currants, red (per bush).....	70	@ 1 50
Currants, black.....	2 75	@ 3 00
Raspberries (per pail).....	90	@ 1 00

LIVE STOCK MARKETS. Buffalo, July 27th, 1886.

CATTLE.

Receipts, 9,299, against 13,325 the previous week. The cattle market opened up on Monday with car loads on sale. The demand was active on local and shipping account, and prices ruled 10¢ to 15 cents higher than the Monday previous. The best steers on sale brought \$4 76@5 05, and handy butchers steers \$4@4 00.

QUOTATIONS:

Extra Beeves—Graded steers weighing 1,450 lbs and upwards.....	\$5 00	@5 30
Choice Beeves—Fine, fat, well-formed steers, weighing 1,300 to 1,400 lbs.....	4 75	@5 00
Good Beeves—Well-fattened steers weighing 1,200 to 1,350 lbs.....	4 50	@4 75
Medium Grades—Steers in fine flesh, weighing 1,050 to 1,250 lbs.....	4 25	@4 60
Light Butchers—Steers averaging 850 to 1,100 lbs, of fair to good quality.....	4 00	@4 25
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.....	2 75	@3 25
Michigan feeders, fair to choice.....	3 25	@3 50
Fat bulls, fair to extra.....	2 75	@3 50

WARNING TO FARMERS!

There are now, as usual, agents scouring the country attempting to practice all sorts of sharp games on the farmers. We again caution farmers not to sign any notes until they get possession of the article purchased, and not sign any other documents unless they are thoroughly convinced of the responsibility of the parties from whom they purchase. A farmer has recently called into our office who declares that he has been bulldozed out of several hundred dollars.

Notices.

TORONTO INDUSTRIAL FAIR.

The success of the Toronto Industrial Fair, to be held from the 6th to the 18th of September, is already fully assured. The number of entries received and applications for space in all departments are already far beyond that of any previous year at the same date. All the space in the large implement building, machinery hall, carriage building, stove and honey buildings has been taken up for some time and the main building is rapidly filling up. The show of live stock and agricultural products this year promises to be unusually large and attractive. The Association paid in prizes for live stock and agricultural products last year, over \$15,000, and a similar amount is offered in these departments again this year. In the Durham class of cattle the Association have decided to allow animals on the same rules as to registration in the herd books as last year, feeling that it would be an injustice and would exclude a large number of their old exhibitors from showing their cattle if they were required to be registered in the new Dominion Herd Book for this year at least. No doubt this rule will be required after the present year. It has been decided to remove the sheep pens from their present location on the lake front to the piece of ground near the eastern entrance and adjoining the pig pens, and to drain all the ground in the locality of the horse and cattle pens, an improvement which will be very beneficial to exhibitors in these departments. The Canadian Pacific Railway will make a large exhibit of the products of the country through which their line passes from Winnipeg to British Columbia. Among the implements and machinery entered for exhibition are all the latest improvements which will prove of unusual interest to the farming community. Tuesday, Sept., 14th, has been set down on the programme as "pioneers' and old settlers' day," on which occasion a large gathering of pioneers and early settlers from all parts of Ontario will take place on the exhibition grounds, and addresses will be delivered appropriate to the occasion. Wednesday, Sept 15th, is set down as farmers' day. Cheap excursions and reduced fares will be granted on all the railways running to Toronto. Our readers, who may be intending exhibitors, should not forget that all entries must be made before the 22nd of August, except in the case of grain, field roots, and horticultural products, which must be made before the 28th of August. Anyone desiring copies of prize list and entry forms can procure them by dropping a post card to Mr. H. J. Hill, the Secretary, at Toronto.

Mr. Farnum, of Savage and Farnum, Island Home Stock Farm, Grosse Isle, Wayne County, Mich., will arrive in Montreal about the 4th of August, with a large importation of Percheron stallions and mares. Mr. Farnum will remain in Montreal three days with the horses, for the purpose of giving the Canadian farmers and customers an opportunity to see them and select from the entire lot. Mr. Farnum will be found at St. Lawrence Hall Hotel, Montreal, on his arrival.

Alma Ladies' College, St. Thomas, enrolled 180 students last year. Its courses are thorough and practical, its faculty composed of graduates and certificated teachers selected with great care, and its record unsurpassed. Rates low. For sixty page announcement, address, Principal Austin, B. D.

The attention of carriage builders and users is directed to the advertisement in another column of the Adjustable Sand Box and Improved Concord Axle. These axles are far superior to any hitherto placed on the market, and are so acknowledged by all practical carriage builders that have given them a trial. The increasing demand for them proves the superiority over all others. Anyone addressing A. F. Miles, Stanstead, P. Q., with stamps, will receive a cut showing the adaptability of the Sand Box, and the preference for the axle.

HELLMUTH LADIES' COLLEGE, LONDON, ONT.—This celebrated institution has lately closed a most successful year, and will re-open on Tuesday, 7th September, with increased facilities. An elevator and gymnasium will add to the conveniences of the college, and a model kitchen for the course of cookery will be a new feature. A graduate of the South Kensington School of Cookery has been secured as instructor. In music, literature and art studies very exceptional facilities are afforded. The staff is most brilliant, and we doubt if any college in North America excels this institution. Circulars (as announced in other columns of this paper) can be obtained on application.

We desire to call our readers' attention to the advertisement of the London Mutual Fire Insurance Co. It being one of the oldest and safest agricultural insurance companies in Canada, and has an established reputation, we would recommend our readers to correspond to the head office before doing business with any other company.

The Dominion and Provincial Exhibition under the auspices of the Eastern Townships Agricultural Association, will hold its second annual exhibition at Sherbrooke, Que., from Sept. 23rd to Oct. 2nd, when over \$25,000 will be given in prizes. For copy of prize list address R. H. Tylee, Esq., Sec.-Treas., Sherbrooke, Que.

We notice that a new grape package is being brought out this year by R. M. Wanzer & Co., Hamilton, which is designed to fill a long-felt want, viz., an easy and cheap method to place the fruit in the hands of the consumer fresh from the vine, without the bloom being rubbed off, or the berries being crushed and spoiled. The box is a large strawberry box made to fit a circle containing 6; each box is furnished with a wire handle, so that a lady may carry it home without trouble. The fruit will thus present a far more attractive appearance, easily handled by retailers, and we think will come rapidly into general use.

Several conferences have lately been held at the Colonial and Indian Exhibition dealing with the more important subjects illustrated by the exhibits to be found in the various departments, but we venture to say that no conference is fraught with so great importance as that proposed to be held on Wednesday evening next, in the Canadian section, with respect to the ocean live cattle trade. The Atlantic trade had its inception in this city, and, owing to the spirited manner in which the subject was taken up by the leading regular Canadian steam lines, with several American lines, and the admirable arrangements for the safe conveyance of live stock, the trade has now become of great importance, not only to this port, but to the country at large. Hence we hope something really practical will be the result of the conference.—[Liverpool Journal of Commerce.

**The Percheron Stud-Book.**

In view of the criticisms which have gone the round of the press relating to the standing of the Percheron Stud-Book, Mr. Edwin T. Blois, Chicago, Ill., sends us the following extracts from the proceedings of the great Percheron Exhibition recently held at Nogent-le-Rotrou, France, at which the French Minister of Agriculture and other notables from France and America were present. The occasion gave rise to enthusiastic demonstrations and a grand banquet at which rousing speeches were delivered, the dignity of the occasion being enhanced from the fact that Nogent-le-Rotrou is the grand business centre of the Percheron region. A correspondent of the *Hartford Times* makes the following allusion: "These great breeders and buyers of French horses are still 'divided in a bitter contest' over the question of the old Percheron stud-book and the new French stud-book. At present there is but one stud-book, the Percheron stud-book, which has been in existence between two and three years. No horse is eligible to registry in this book unless it has been actually born within the Percheron district, of Percheron sire and mare. Even if a Percheron mare should foal while outside the Percheron district, and the colt was known to be by a Percheron registered stallion, that colt could not be registered in the Percheron stud-book. Therefore, only horses actually born in Perche can have a regularly registered pedigree, for there exists no other French stud-book. This confines the buyers who desire to ship authentic stock to America to Perche, and gives to that region a fame beyond all the rest of France.

This has made the fortunes of Percheron breeders and excited the jealousy of the breeders of Normandy and Boullonnais horses, who now are beginning to be aroused in their interests. Finding that their clamoring to be admitted to the Percheron stud-book is of no avail, they are striving to start a rival stud-book. Hence the controversy.

The Minister of Agriculture completely ignored the new book and praised in high terms the wonderful improvement which the show demonstrated has been effected in the Percheron horse, especially since the breed has been kept within itself by the rules of the Percheron stud-book. This is a great victory for the Percherons. In this contest the fight is Perche against all the rest of France united. A good Percheron brings from \$1,000 to as high as \$9,000. The Percheron theory of breeding rests upon "in-breeding," as opposed to crossing. The Percheron stallion is often bred to his own dam or sister. While crossing will sometimes produce good colts, they claim that a horse which has been the result of long-continued in-breeding in the same family has a greater power of transmitting his good qualities to his progeny. Hence the noticeable improvement in the Percherons since the stud-book confined the breeders to the narrow limits of the Perche. And, further, it is claimed that there are certain chemical properties in the soil of the Perche which, taken into the system of the horse through the pasturage, produces bone and muscle, and that a colt born of Percheron parents and not raised on Perche pasture, while it will be superior to all other draught horses, will not equal one raised in Perche. Probably a thousand stallions will go to America from France this season, which will bring in America not less than \$1,500,000, and by far the greatest portion come from this little region of Perche.

The following account of a prolific Welsh cow is taken from the *Agricultural Gazette*, London: "She had her first calf as a two-year-old; at the age of three she gave birth to twins, and again as a four-year-old cow she gave birth to twins. She is now in her fifth year, and only the other day was delivered of the most uncommon number of three at one birth. All were calved alive, but one succumbed soon after. It will thus be seen that as a five-year-old cow she is now the dam of eight calves."

**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.

## INDUSTRIAL FAIR TORONTO, SEPTEMBER 6th to 18th.

Entries Close August 22nd.

For Prize List and Forms of Entry, address

H. J. HILL,

248-a

Manager, TORONTO.

## WESTERN FAIR

—AND—

Industrial and Art Exhibition,

—AT—

LONDON, CANADA,  
Sept. 27th to Oct. 2nd, 1886.

LIBERAL PREMIUMS.

COMPETITION OPEN TO THE WORLD.

The directors of the Association are determined to spare no effort to make the forthcoming Exhibition equal if not surpass any previous fair.

The Committee on Attractions are preparing a splendid programme of **SPECIAL ATTRACTIONS** for each day of the Fair, full particulars of which will be published later on.

Write to the Secretary for Prize List, Posters, Programmes, or any information required.

GEO. McBRIDE, Secretary.

R. WHETTER, President.

248-b

## DOMINION, QUEBEC PROVINCIAL

—AND—

Second Annual Exhibition

OF THE

Eastern Townships Agricultural Association

—WILL BE HELD AT—

SHERBROOKE, QUE.

23rd SEPTEMBER to 2nd OCTOBER

\$25,000 in Prizes. Competition open to the world. Reduced rates and cheap excursions from all points. For Prize Lists, apply to

R. H. TYLEE, Sec.-Treas.

Sherbrooke, 22nd June, '86.

247-c.

**41st PROVINCIAL EXHIBITION**

—OF THE—

## Agriculture and Arts Association of Ontario

TO BE HELD AT

# GUELPH

FROM THE

20th to 25th SEPTEMBER, 1886.

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

HENRY WADE, Secretary,  
TORONTO.

247-b

HENRY PARKER, President,  
WOODSTOCK.

## The Ontario Experimental Farm Live Stock Sale.

THE NINTH OF THE PUBLIC SALES WILL

be held this year on the

23rd September,

in the Fair Grounds of Guelph, during the Provincial Exhibition. There will be Shorthorn, Hereford, Aberdeen Poll, Galloway, Devon, Ayrshire, Holstein, Guernsey and Jersey bulls and heifers, along with some prime two-year-old steers, as also ram and ewe lambs of Lincoln, Cotswold, Leicester, Cheviot, Highland, Oxford, Southdown, Shropshire and Merino. No reserve, and special conditions will be allowed Ontario farmers. Send for Catalogue.

248-b

WILLIAM BROWN.

## FRUIT BASKETS

MANUFACTURED BY

R. M. WANZER & CO.,  
HAMILTON, ONT.

All varieties of Fruit Packages, including Grape, Plum, Huckleberry, &c., also a new Grape Package.

Send for circular.

Prices extremely low.

248-b

## ROSMARY HAIR INVIGORATOR

Removes Scurf, Dandruff, &c., and strengthens the growth of the hair.

Sent by express, prepaid, for 75c.

Wm. Saunders & Co  
LONDON, ONT.

248-d

**FOR SALE** 200-acre stock and grain farm near Burford, county of Brant; sandy loam; good buildings and orchard; 30 acres hardwood; water year round; spring creek; easy terms. Apply to RUTHERFORD & LESTER, Real Estate Agents, Hamilton, Ont. 248-c

## FERTILIZERS FOR FALL SOWING.

One barrel (250 pounds) of the "STANDARD FERTILIZER" per acre, sown with Wheat or Rye, will ensure a good catch, healthy and vigorous, and at maturity a larger crop of grain of superior quality.

THE STANDARD FERTILIZER & CHEMICAL CO., Limited  
SMITH FALLS, ONT.

Or to BRODIE & HARVEY, Montreal. 248-b

## WHEAT

**ANNUAL FALL WHEAT CIRCULAR FOR 1886** will be mailed free on application. Every farmer should send for a copy before purchasing any new varieties of wheat. 248-a

WM. RENNIE, TORONTO, ONT.

## IMPORTANT TO CARRIAGE DEALERS AND USERS.

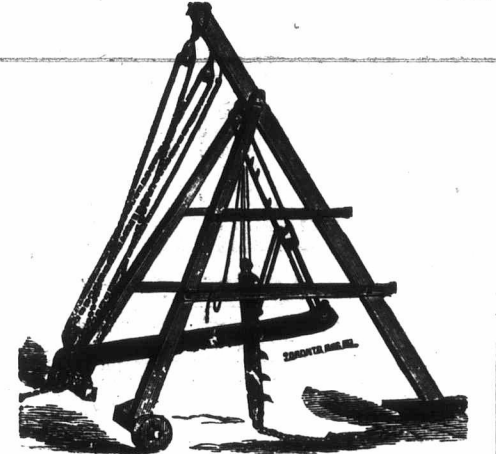
### THE ADJUSTABLE SAND BOX.

Can be applied to any vehicle in 20 minutes time by any ordinary mechanic. They are ORNAMENTAL as well as useful, and no carriage is complete without them. It is economy for every one to have them applied to their carriages, for the following reasons: 1st. You can save the wear of your axles 50 per cent; they are practical and are fast coming into general use. 2nd. You can run your carriage 200 miles with one oiling. 3rd. Water, sand, mud and dirt cannot get in upon the bearing of the axle, hence the necessity of frequent oiling and the continual wearing is avoided. 4th. Grease and dirt are not continually coating from the axle bearing. 5th. They are cheap and durable. One set will last a life time; but if necessary can be easily replaced with little expense. 6th. The first and only Sand Box ever invented to go on over a solid collar.

Livery-stable keepers generally are adopting them as a matter of economy. Every mail brings unsolicited testimonials from parties using these valuable improvements. Write for inducements, descriptions and cuts of the Adjustable Sand Box and Improved Concord Axle; if your dealer does not have these goods in stock send your order direct to me and I will forward promptly. DON'T BUY A VEHICLE WITHOUT THE ABOVE ATTACHMENTS. Address 248-y

A. F. MILES, Stanstead, Que.

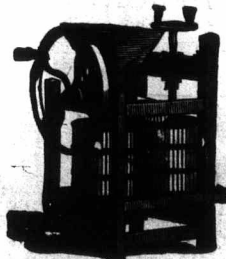
PROCURER THE BEST.



### THE WHITFIELD STUMP EXTRACTOR

The superiority of this machine consists in the rapidity and ease in which it can take out the largest stumps; the ease with which it is operated by man or beast, and the great strength and durability of this machine. It leaves no holes to fill up, nor any stumps or snags in the ground. Send for circular of testimonials and particulars about it before purchasing an inferior machine. All purchasers ordering direct from me will save agent's commission. Address JOHN WHITFIELD, Don Chain Works, Front Street, Toronto. 245-y

## H. SELLS & SONS, MANUFACTURERS OF CIDER AND WINE MILLS AND PRESSES AND CORN HUSHERS.



Best, Cheapest and most complete assortment in this line of goods in the Dominion

Address for descriptive circulars and price list,

H. SELLS & SONS  
952, 954, 956 Queen St. West  
Toronto, Ont.

## ACME PULVERIZING HARROW, Clod Crusher and Leveler.

The Best Tool in the world for preparing Wheat Ground and for Summer Fallows.

NASH & BRO., Sole Manufacturers, Harrisburg, Pa., & Millington, New Jersey.

## SORGHUM EVAPORATORS and MILLS.

Cheapest and Best. Write for free copy of the Sorghum Growers' Guide. CHAPMAN & CO., Madison, Ind.

N.B.—"TILLAGE IS MANURE" and other essays sent free to parties who NAME THIS PAPER. 248-c

## FARMERS AND THRESHERS

consult your best interests and buy the OSHAWA MOWERS.

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

### NEW MODEL THRESHERS.

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

### PORTABLE ENGINE.

No better agricultural engine made. Gives threshers satisfaction.

### HALL THRESHERS.

The best in the market for horse power. Repute long established.

### UNDERSHOT CLOVER MILL.

None to equal it. Superior to all others. Superb.

### CHAMPION REAPERS.

Of well established repute. Only a few remaining unsold this season.

### DOUGHERTY SHINGLE MILLS.

### WOODBURY HORSE POWERS.

### PLANET HORSE POWERS.

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### PITTS' HORSE POWERS.

Repairs on hand for every machine made.

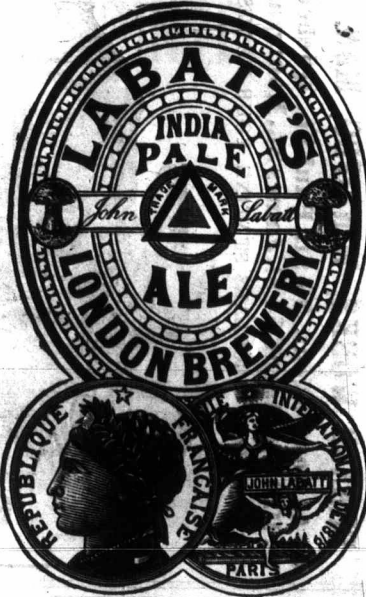
JOHN LIVINGSTONE, Trustee Joseph Hall Machine Works, OSHAWA. 247-b

## RUPTURE! EASE, SECURITY AND DURABILITY.

The Tucker Truss conveys a natural, inward and upward pressure, being a perfect retainer, permanent relief. No galling or chafing. Thousands in use in Canada, and patronized by our best surgeons. Cheap, light and durable. Try it. Illustrated pamphlet free. Address TOMS & CO., (Druggists), 274 Yonge St., Toronto. NO BODY SPRING. 248-c

## MANUAL OF CORRESPONDENCE

One of the most practical and most useful books published; every teacher should have a copy; no school should be without it; it contains exercises in capital letters, abbreviations, punctuation, errors in English, specimen letters, beautifully engraved, etc.; price 50cts. C. O'DEA, Arcade, Toronto. 247c



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

## THE LINE SELECTED BY THE U. S. GOV'T TO CARRY THE FAST MAIL.



It is the only line with its own track from CHICAGO TO DENVER, Either by way of Omaha, Pacific Junc., St. Joseph, Atchison or Kansas City.

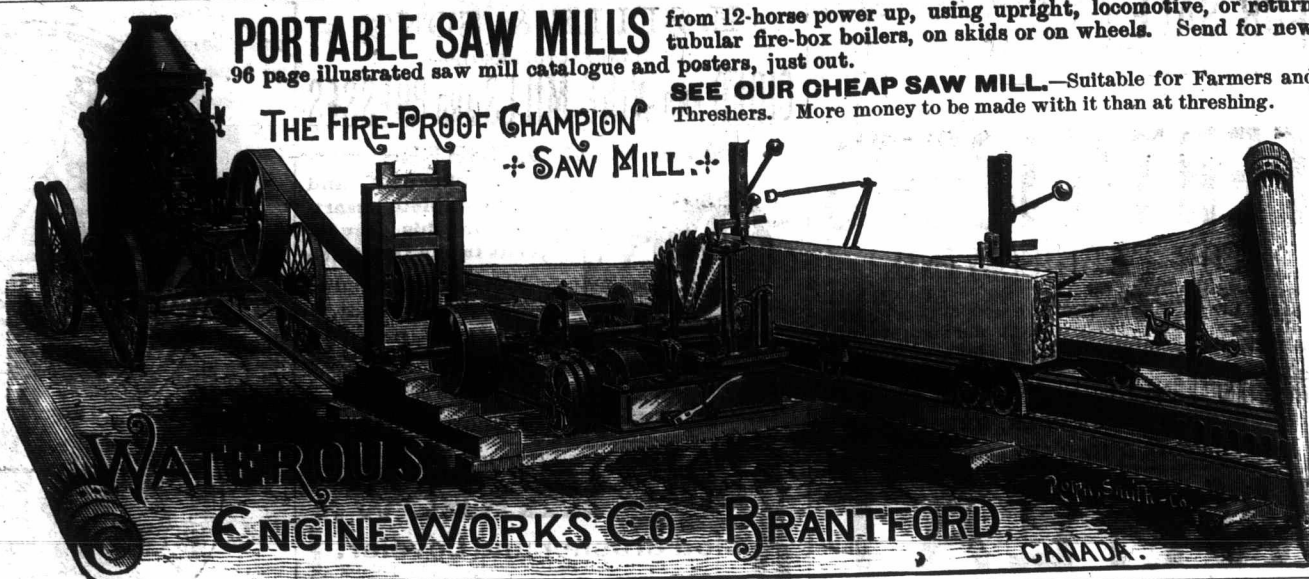
It connects in Union Depots with through trains from NEW YORK, PHILADELPHIA, BOSTON and all Eastern points. It is the principal line to SAN FRANCISCO, PORTLAND & CITY OF MEXICO. It traverses all of the six great States of ILLINOIS, IOWA, MISSOURI, NEBRASKA, KANSAS, COLORADO with branch lines to all their important cities and towns.

From CHICAGO, PEORIA or ST. LOUIS, it runs every day in the year from one to three elegantly equipped through trains over its own tracks between Chicago and Denver, Chicago and Omaha, Chicago and Council Bluffs, Chicago and St. Joseph, Chicago and Atchison, Chicago and Kansas City, Chicago and Topeka, Chicago and Cedar Rapids, Chicago and Sioux City, Peoria and Council Bluffs, Peoria and Kansas City, St. Louis and Omaha, St. Louis and St. Paul, Kansas City and Denver, Kansas City and St. Paul, Kansas City and Omaha.

For all points in Northwest, West and Southwest. Its equipment is complete and first class in every particular, and at all important points interlocking Switches and Signals are used, thus insuring comfort and safety.

For Tickets, Rates, General Information, etc., regarding the Burlington Route, call on any Ticket Agent in the United States or Canada, or address T. J. POTTER 1st V.P. & GEN. MGR., CHICAGO. HENRY B. STONE, ASST. GEN. MGR., CHICAGO. PERCEVAL LOWELL, GEN. PASS. AGT., CHICAGO.

**ENDLESS GUARANTEED THRESHING BELTS**  
 kept in stock. The best belts in the market.  
**BRANCH WORKS, WINNIPEG, MAN.**  
 W. A. Ross, Agent, 30 St. Paul St., Quebec  
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 SEND FOR CIRCULARS STATING YOUR WANTS.



**PORTABLE SAW MILLS** from 12-horse power up, using upright, locomotive, or return tubular fire-box boilers, on skids or on wheels. Send for new 96 page illustrated saw mill catalogue and posters, just out.  
**THE FIRE-PROOF CHAMPION + SAW MILL +**  
**SEE OUR OHEAP SAW MILL.**—Suitable for Farmers and Threshers. More money to be made with it than at threshing.

**WATERBURY ENGINE WORKS CO. BRANTFORD, CANADA.**

**HELLMUTH LADIES' COLLEGE,**  
**LONDON, ONTARIO.**

EDUCATION,  
 HEALTH,  
 HOME,

This institution will reopen on Tuesday, September 7th, with greater facilities than ever. Full courses in Literature, Music and Art; Elevator; Gymnasium; Cookery Lessons, Model Kitchen for pupils' sole use, Instructor Graduate of South Kensington School of Cookery, England. Twenty-two Scholarships, of value from \$40 to \$100, annually offered for competition. Also,

**LEIPSIK CONSERVATORY SCHOLARSHIP,**

Free year at Leipsic Conservatory of Music, Germany. For Illustrated Circular free,  
 Address— **REV. E. N. ENGLISH, M.A.,**  
 PRINCIPAL.

248-a

**Forest City Business College.**

This Institution Excels others of its class:—

- 1.—In the **Business Practice Department.**—The system pursued ensures a more complete business training, and the rooms and offices are better equipped than in other schools.
- 2.—The **Work is Divided** into Junior, Intermediate and Business Practice Departments, the first being in charge of a practical accountant, and each of the others managed by one of the proprietors.
- 3.—The **Teaching Staff** includes three first-class Penmen, and a practical Short-hand Reporter.
- 4.—The **College has the confidence** of leading business men, practical accountants, teachers, and particularly its own students, and has no connection with any other college ever conducted in London.

For handsome Catalogue address  
 248-1f

*Westwood and York*  
**LONDON, ONT.**

**SEED WHEAT**—**MANCHESTER, NIAGARA RED, MARTIN AMBER, DEMOCRAT,** and all the leading varieties of **FALL WHEAT,** pure and clean. Send for Catalogue, free to all who apply. Address (Late Pearce, Weld & Co.) **JOHN S. PEARCE & CO.,** London, Ont

**HOW SAFE WE FEEL! HOW VERY, VERY SAFE!!**

is the exclamation of thousands of the farmers in the country who have their properties insured with the old

**LONDON MUTUAL**

**Fire Insurance Company of Canada**

The successful pioneer of cheap and safe insurance in Canada; for nearly thirty years doing the largest business in Ontario, and increasing day by day.

**Assets 1st January, 1886, \$401,003.72, with 42,980 Members.**

**JAMES ARMSTRONG, ESQ., M. P.,** PRESIDENT. **W. R. VINING, ESQ.,** TREASURER.  
**D. C. MACDONALD,** MANAGER.

**Intending Insurers Will Note:**

- 1.—That this Company is a **purely Canadian Mutual,** and confines its business solely to the insurance of farm property, private residences, churches, school houses, cheese factories, township halls and the like.
  - 2.—That the rates of premiums are as low as is compatible with security to the insured.
  - 3.—That animals killed or injured by lightning in the fields are covered by its policies, and that damages by lightning are made good whether fire follows or not, this Company having been the first one in Canada to recognize this principle.
  - 4.—That over a **million and a half of dollars** have been paid to the farmers of Ontario in satisfaction of losses.
  - 5.—That the policies of the Company are most liberal, affording every protection to the members.
- For insurance apply to any of our agents, or address the Manager, London, Ont. 248-b



**ALMA LADIES' COLLEGE**

**St. Thomas, Ont.**

Offers unsurpassed advantages in

**LITERARY WORK,  
 MUSIC, FINE ARTS AND  
 COMMERCIAL SCIENCE.**

Rates from \$39 to \$46 a term for board, room, light, laundry, etc., and tuition. The same with **Music and Drawing** for one year for \$190 in advance. Attendance last year 180. **Re-opens Sept. 9th.**

For 60-page announcement address  
 248-b **PRINCIPAL AUSTIN, B.D.**

**London Business University**

—ESTABLISHED 1860.—

**Institute of Phonography and Telegraphy and Academy of Type Writing, Elocution and Art.**

**BEST ROOMS. | BEST STAFF. | BEST COURSE.**  
 Large attendance of ladies. Many thousands of our students now in good positions. Several families have sent in two students each this year. We assist worthy students in securing situations. Address **A. J. CADMAN, Secretary, Box 400, London, Ont.** 248-f

**Guelph Business College**  
**GUELPH, ONT.**

**YOUNG MEN and WOMEN** are thoroughly prepared for positions as Book-keepers, Short-hand-writers, Calligraph and Telegraph Operators. Students have been in attendance from nine Provinces and States within the past year. Our graduates are meeting with marked success in the commercial centres of Canada and the United States. Rates moderate; accommodation excellent; the progress of each student independent of that of all others, and graduates assisted in obtaining positions. 240-y

For terms, etc., address

**M. MacCORMICK, Principal.**

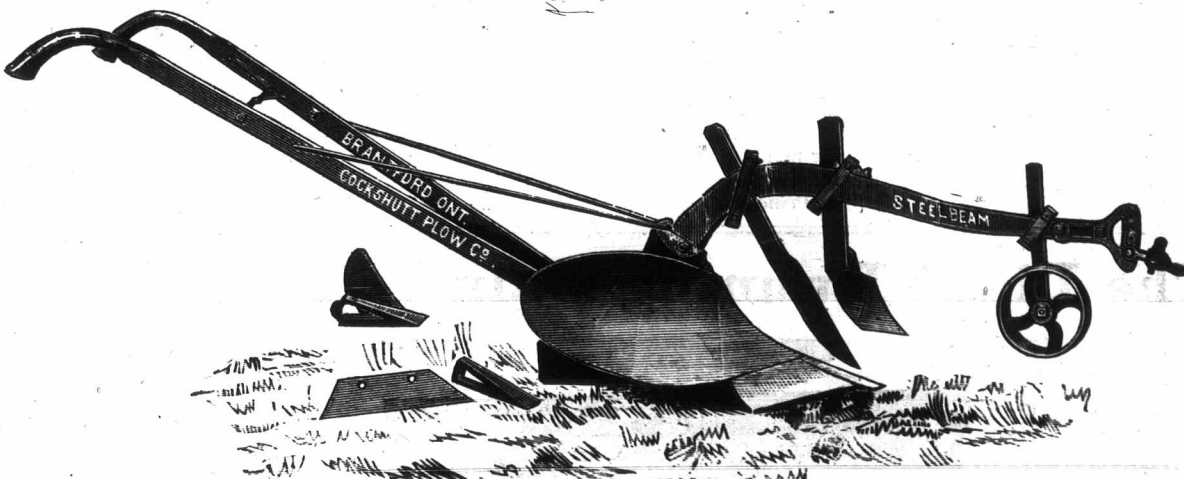
Mr. J. W. Johnson, F. C. A., Principal of Ontario Business College, Belleville, has just returned from a visit to Bermuda in the interest of the College, which is largely patronized by Bermudians. Several students accompanied him to Belleville.

# "ECONOMIST" LIGHT STEEL OR CHILLED JOINTER PLOW

With Reversible Point and Wing.

The Best Patent in the Plow Trade.

Send for One on Trial Direct if no Agent in Your Locality.



In our light series of Steel Jointer Plows the "Economist" leads in number of sales made, as being Lightest Draught, Easiest Handled, Steadiest Running and the most Economical Plow for use as a General Purpose Jointer Plow.

ADDRESS COCKSHUTT PLOW CO., LIMITED, BRANTFORD, ONT.

248-a



### The Singer Manufacturing Co's Sewing Machines are Superior to all Others for Whatever Purpose Needed.

Special Machines for Manufacturers, suited to every kind of sewing whether on the finest or heaviest material, and varying in price from \$25.00 to \$4,000.00 each. Our Family Machines are unrivalled for range and variety of work, perfection of mechanism, simplicity, durability and ease of operation. See Our Latest Catalogue, and do not be induced to buy any other machine till you have seen and tried the Improved Singer. Branch Offices in all Large Towns. Agents Everywhere.

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246-d

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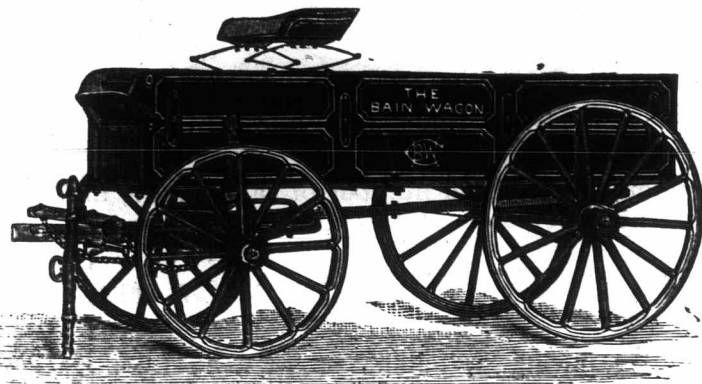
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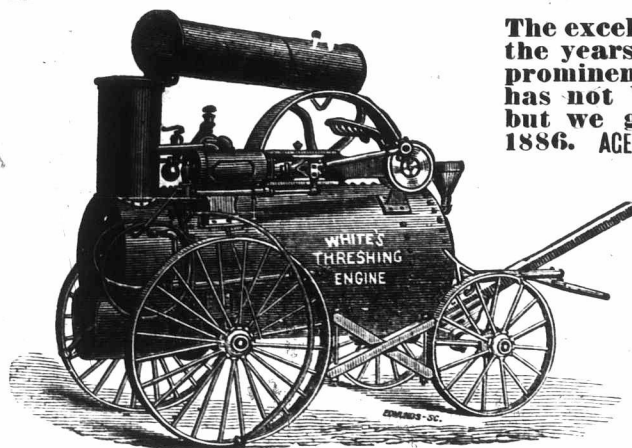
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