

# FARMER'S ADVOCATE

AND HOME MAGAZINE

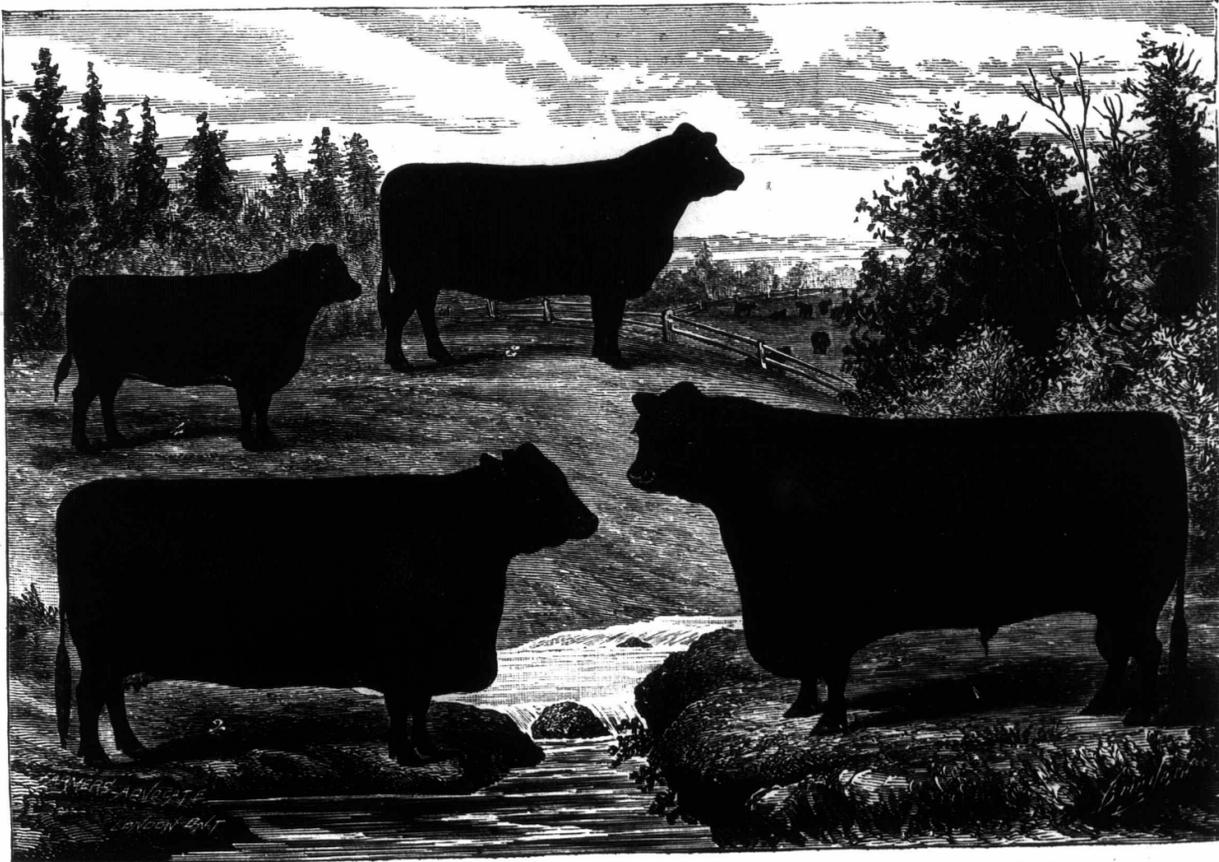
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LONDON, ONT., NOVEMBER, 1885.

Whole No. 239.

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GROUP OF ABERDEEN POLLED ANGUS CATTLE.

THE PROPERTY OF MESSRS. HAY AND PATON, KINNOUL PARK STOCK FARM, NEW LOWELL, ONT. SEE PAGE 331.

Dr. R. C. Kedzie says he could by the hour detail cases from his own observation of invalidism, of prolonged sickness, where father, mother, sister and brother have gone lingering down to death because of a foul well; of typhoid in all its types and degrees traceable direct to contaminated drinking water. A cesspool or privy-vault within the cone of filtration—possibly including an area of 200 feet diameter—leaching its revolting poison, which may easily be conveyed to a much greater distance by subterranean streams, is the most common and fruitful source of the deadly "filth diseases;" and the dry-earth, coal-ash or saw-dust closet is one way of escape.

Mr. Thomas Taylor, microscopist of the Department of Agriculture of the United States, recently made a discovery which completely outwits the manufacturers of oleomargarine and butterine, who have been placing their vile stuff upon the market in the disguise of genuine butter. He first crystallizes the fatty acids of the samples to be tested and then places the crystals under the microscope. On turning the polarizer on the crystals of pure butter he sees a well-defined St. Andrew's cross which rotates with the polarizer, while the crosses which he finds on the crystals of oleo., butterine, beef and swine fats, are of the stellar form, and do not follow the rotation of

the polarizer. "Oleo. must go" now sure enough.

SIR,—I send you two new subscribers for the FARMER'S ADVOCATE. We like your paper better every year, and this is our tenth year. If it does not come when we expect it, we are greatly disappointed.

WM. BARWICK, Petrolia.

[We are gratified at the tone of the above, and hope every farmer not taking the ADVOCATE will consult his own interest and that of his family and friends generally by not only becoming a subscriber himself, but will actively canvass his neighbors, and persuade them to do the same.—ED.]

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## THE FARMER'S ADVOCATE

—AND—

### 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. 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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1. \$1.00 per year in advance; \$1.25 in arrears. Single copies, 10 cents each.
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3. Remittances at the risk of the subscriber unless made by registered letter or money order.
4. Subscribers who desire to change their P. O. address must send both old and new address.
5. The FARMER'S ADVOCATE is continued until otherwise ordered. The name of a subscriber is taken from our list with the same promptitude in all cases that it is put on, provided all arrears are paid up, but we cannot stop a paper unless the name of the Post Office, as well as that of the subscriber, is sent to us.
6. The address label shows when your subscription expires.

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Address—  
THE FARMER'S ADVOCATE,  
360 Richmond Street,  
LONDON, ONT., CANADA

#### Our Monthly Prize Essays.

Our prize of \$5.00 for the best original essay on *The Advantages and Disadvantages of the Proposed Model Farm for the Dominion*, has been awarded to Mr. J. S. Pearce, London, Ont. The essay appears in this issue.

A prize of \$5 will be given for the best original essay on *How can Public Expenditures for Agricultural Purposes be Turned to the Best Interests of the Farmers?* Essays to be handed in not later than November 15th.

A prize of \$5 will be given for the best original essay on *The Advantages of Planting Nut-bearing Trees.* Essays to be handed in not later than December 15th.

## UNPRECEDENTED OFFER!

Good till December 1st only.

In consequence of some of our old subscribers complaining that we have given greater advantages to new subscribers, and in order to advance your interests, and increase our circulation, we make you the following offer:—

For two NEW subscribers' names, accompanied with \$2.00 cash, we will send you the Farmer's Advocate free for the year 1886.

This offer is made solely to our present subscribers.

DEAR SIR,—I have taken the ADVOCATE for several years, and am so well pleased with the course it has pursued, that I am determined to increase its circulation among my brother farmers. I now send you four new names, and will endeavor to send more.

GEORGE IRWIN, Micholston.

## Editorial.

### On the Wing.

When on the wing we endeavor to keep our eyes and ears open to see or hear of anything that may be of profit or interest to you. In our recent trip to our old homestead, the Westwell Farm, we found lots of walnuts on the trees, also butternuts and hickory nuts. Some of these trees were saved and protected by us forty years ago. One black walnut tree that we had reserved sold a short time ago for \$100 as it stood. The black walnut makes a large, handsome tree, and produces the most valuable timber of any raised in our Dominion. The hickory makes the most valuable bending timber and produces the sweetest nuts; the butternut tree produces the most oily fruit. We know of no safer, nor we believe more profitable, investment than the planting of suitable varieties of trees; and for pleasure and profit combined, we know of none that we would more strongly advise you to plant at the present time than the nut bearing varieties in localities in which they are adapted. They will gladden the hearts of the children. We can look back with great pleasure to the gathering of the nuts in autumn and eating them in winter. Let us plant for our children's pleasure, for our profit, and the good of the country. The crop of nuts will be found profitable, the tree will be found beautiful, and who would despise the receipt of \$100 for a single tree of black walnut, or \$50 for a fine hickory tree? Bear in mind that nuts are a nutritious article of food as well as luxury.

When in Boston we purchased a plant of the Japanese Ivy. No plant or tree that we have seen gave us so much pleasure this year as the sight of this new plant. We first saw it on Mr. Landreth's house in Bristol, Pa., covering the side to the eaves of a three-story building; it was as rich and grand as it was possible to be, putting us more in remembrance of the ivy-clad castles and walls in England, and quite as grand and rich as anything we have ever seen there. Mr. Landreth introduced it from Japan. It is now growing up the sides of nearly all the fashionable houses in Boston; it is crawling up some of the best houses in Rochester; it is growing on the house of Mr. W. R. Meredith, M. P. P., in this city, and is now to be introduced to you by us. You may not have seen it, but you will be delighted with it. Be the first to introduce it into your locality; it is the best climber you have ever seen, and we feel safe in commending it to you; it will please you and anyone that sees it.

We appreciate the *Catalpa speciosa* so much that we went to the expense of having an engraving made of it; this is the hardiest variety of the *Catalpa*.

When recently in Rochester we saw some fine chestnut trees bearing a much superior chestnut to those commonly grown in Canada, and the trees came into bearing much earlier; these we shall introduce to you this year.

We shall give these beautiful and valuable plants to you for obtaining new subscribers for the ADVOCATE; see prize list in this and following issues. The plants will not be sent until the spring.

## Agricultural Exhibitions.

Since our last issue we have visited another exhibition, in Waterloo. Here we saw many of the finest animals in Canada, many of which had carried off Dominion and Provincial prizes, and perhaps other animals exhibited here would have compared favorably with the prize winners had they been there. We heard some complaints of partiality having been shown at the larger exhibitions.

The exhibition was good throughout; perhaps the exhibit of bread, preserves, wines and vegetables might be considered above the average. There appears to be a great difference in opinion as to whether the height of carriage horses should not be reduced to 15½ hands, as it appears that many good carriage teams will not quite come up to the standard in height, and are too heavy for the roadster class. We are rather inclined to maintain the standard on that class, as on the whole they are the most valuable class for the country, more particularly so where the land is rich; in localities where the land is not of the best, a lower standard might be encouraged.

## Hog Cholera.

For some time past we have noticed reports of the existence of hog cholera in Essex Co., Ontario. Some of our notices about stock diseases having been too slightly regarded when furnishing information to the proper authorities, and even our reputation for veracity or knowledge having both been maligned by some having great power and influence, and even our attempts to do good having been turned against us, we have said but little about this case, as the first information we had came to us through the papers supported by the Government. At the annual meeting of the Agricultural and Arts Association in this city, we asked the President if the reports we read were correct. He replied that he was not aware that the hog cholera existed in Canada, but Mr. Chas. Drury said that it did, and that the Government was taking means for its suppression. We have now made due enquiries into the matter, and find from the most reliable resources that over 1,200 hogs have died of the disease within the past year; that it has existed near Malden for about 18 months; that the introduction of the disease is not yet clearly defined, some supposing it may have arisen from dead hogs that were washed on shore, supposed to have been from the other side of the line; or it might have been imported by smuggling a pig across, which we have heard hinted as having been done; others think the railroad may be blamed for it. One case pretty clearly shows that strong circumstantial evidence would point strongly to the railroad; an isolated case is found 20 miles from the seat of the disease; near this is a watering place where the hogs are watered and the cars cleansed. The cleaning of the cars takes place in this way: A strong stream of water is forced through the cars by means of a hose, the force of which washes all the excrement out of them. This operation causes the hogs to squeal, and the squealing of the hogs causes the hogs that are running in the adjoining farm to come to the fence to ascertain what the trouble is. The stench from the cars is sometimes very great,

and the stench from a diseased hog is very great, so great that the disease is supposed by veterinary authorities to be carried, under favorable circumstances, the distance of one mile, and impart the disease to hogs at that distance.

There are at the time of writing about 120 farms under quarantine, having about 600 diseased hogs on them. We would suggest that wagons with water-tight boxes be immediately constructed with a block and pulley attached, so as to raise the hogs into the top of the wagon, the hogs to be then killed and dropped into the wagon; and as the wagon is filled, the hogs to be taken to some spot and burned; that no hog be allowed to go on any farm where the disease exists for one year, and all manure to be at once removed and plowed under or burned. The cost of this would be a mere nothing in comparison to the prospective loss of our reputation for having the most healthy stock. Further, we would suggest that extra precaution should be taken to prevent hogs from being kept within a certain distance of railroads that carry American hogs, or the prevention of their importation or passage through our country. The health of our stock is the greatest thing to be regarded; this is where legislation may do good to the farmers. The farmers' interests should be regarded before the interests of the railroad companies, when the health of our stock and our markets are likely to be affected. The precautions now being taken, although rather late, will, we believe, prevent any danger to our export stock, and in a short time we hope to report that in this small spot where the disease exists it is entirely stamped out.

#### Government Expenditure for Agricultural Purposes.

It being the settled policy both in the Dominion and the Provincial Government to expend public moneys for agricultural purposes, we have been accused of criticising these expenditures without first proving that they are unnecessary or unjust. Mr. W. H. Lynch, in his defence of the course pursued by the Government in distributing his dairy pamphlets at the public expense, pertinently puts the case in the following words:

"I would suggest that, when attacking such measures, you prove logically that the measures are evil, and that the personal connection exists. The question of Government interference with private economies is one that ought to be treated broadly. It is a question for fair discussion. Taking the Government policy as it is, I think the real question is not whether the Government should interfere in the amelioration of industries, that being a settled policy, but what is most deserving of Government aid. From the farmer's point of view, I think it is not in place to complain of the expenditure of a few thousand dollars to promote agriculture, while millions are being expended on railroads, etc. The farmer may reasonably demand that such small sums be expended properly."

We have merely pointed out, it is true, that the sanguine expectations of the farmers have not been realized, and that the effects of many agricultural expenditures have been demoralizing. We have not yet suggested how these appropriations should be turned to the best interests of the farmers; for this would be an acknowledgment that agricultural expenditures are justifiable. In order to treat this question

logically, we would be forced to discuss the principles of taxation, which is a political issue. We have no desire to get into a wrangle with politicians, and we have therefore considered that we could best serve the interests of the farmers by restricting ourselves to problems pertaining to agriculture proper. We presumed the farmer was aware that both parties were bidding for his vote, and that, if he was a loyal citizen, desiring that truth only should prevail, he would not draw his inspiration from the sophistries of either political party, but would diligently and scrupulously study the merits of the question, and then take such action as would be conducive to his best interests. We have not space to discuss a question in full, upon which many volumes have been written; but as we are driven into the issue, we shall consider it briefly from the farmer's standpoint alone, leaving other organs to fight the battle for their own adherents.

The true function of government is the protection of life and property, and as taxes are indirectly imposed for the support of government, each citizen should contribute in proportion to the amount of security which he enjoys. Now, if more money be exacted from the people than is necessary for legitimate requirements, the surplus must either remain in the treasury in trust for the people, or it must revert to them. If it reverts, then it should go back into the pockets of each citizen in proportion to the total amount exacted. From this view a surplus cannot be defended; but the practical difficulty still remains that parties cannot agree as to what sums should be regarded as a surplus—or a deficit, as the case may be.

This is the real issue which divides our political parties, and as business is always business, an illustrative example may be given in the case of two farmers of conflicting trains of thought. Farmer A. is a man of "economy." He detests laying out money; his policy is to save it at any expense. He will not extend his operations because he cannot do so without laying out money; he will not keep down the weeds, drain his land or keep good stock, for all this requires hard cash which he is hoarding up for his banker. Farmer B. goes to the opposite extreme. He rushes into every speculation in order to win awe and the applause of his neighbors, and secure the highest offices and honors in their gift. In political business, unfortunately, there is no farmer C. Farmer C. is a calculator. He never has a surplus. He keeps books. Instead of depositing his immense profits at five per cent., or squandering it in luxury, or speculative undertakings, which may lead to bankruptcy, he estimates that he can make twenty per cent. by investing in drainage or other legitimate enterprises, and he never feels embarrassed when the tax-gatherer or other creditor knocks at his door. It is needless to explain that farmer A. is a low, and farmer B. a high, taxationist. Farmer C. is the critic. He is independent. He soliloquizes thus:

"It's just half a century ago. I remember the time well. I was a poor, penniless settler—the first in this county. How cordially I used to greet every coming pioneer. We were all jolly good neighbors then, for in point of wealth we were all born and brought up equal. How we struggled, not to get ahead of one an-

other, but to keep away the wolf from our doors! We had no free soil to tread upon, but the air we breathed was pure and free. Our hearts were stout, and our arms strong. Speculators claimed our lands, and well do I remember seeing them driving our cows and our oxen to the auction block when we fell behind with our installments. These wolves were too many and too strong for us to drive away. They looked like dear lambs when they first came to us to bargain away their titles. We did not pray to our paternal government to protect us. These wolves have gone away with our forests, but a worse species has come in their place. The first brood only exacted its pound of flesh; the second preys upon our vitals as well. If we had received encouragement then, there might be an excuse for asking us to encourage other native industries now. We have proved that farming is fit to survive; let the pioneers and the champions of other industries follow our example. How many years of encouragement do they ask and need? But they say we are not taxed for their protection, that the price of our articles of consumption is not increased by high taxation, that home competition brings down prices lower than ever. If so, then they are championing our interests only, and battling against their own. What on earth can tariff encouragement mean, if prices are not increased thereby? Why all this clamoring for a high tariff to keep out foreign commodities, if the prices of home-made articles rule lower? If we are to be prevented from getting cheap goods on account of foreigners slaughtering our markets, then who is to indemnify us when our crops are slaughtered by storms and bugs? One form of indemnity is said to be that we get a home-market for our farm products. Then the same authorities boast of the enormity of our agricultural exports, so that according to this manner of reasoning the height of our prosperity will be attained when we shall have immigrants enough to consume our surplus agricultural products, and when, at the same time, all these surplus products shall be consumed by hungry millions abroad. What does it concern us where our consumers are? We are most concerned in the number of consumers, not in their location; and by placing them at our doors we lose a large number which would otherwise have been engaged in the transportation of commodities, and in the construction of vehicles of transport. The time is now past when the price of any appreciable quantity of our products is ruled by local markets. The representatives of our industries combine for their own aggrandizement, and if they demand high taxation that fact is to me proof positive that, in their minds, somebody else has to foot the bill. When they demand that commodities shall not be manufactured where they can be most cheaply produced, then this fact is to me proof positive that the demon of monopoly stalks abroad. And yet I emphatically deny that protection, in the long run, protects. Encouragement, in the long run, does not encourage. Yes, it does: it encourages tyranny in its basest forms. It debases the will and the self dependent spirit of a free people. It creates multitudes of dupes and lobbyists to be played upon by a corrupt government at the expense of the people, alternated with the government being tyrannized over by corporations of the very people whom it has debauched. As to the claim that light agricultural expenditures are justifiable because they in part indemnify us for the millions squandered in building up soulless corporations, there should be no uncertain sound. What we receive are definite sums spent in definite projects; what we pay in the form of encouragement bounties is unascertainable and so fixed for the purpose of blinding us as to the enormity of the exactions. Whether encouragement encourages or not, I have only to do with the fact its promoters believe it does, and if we are justifiable in claiming an indemnity, it is on this ground. Moreover, I am convinced that agricultural expenditures have not encouraged, and whether they have done so for not, I shall vociferate against them with equally certain tone.

### Winter Warmth for Stock.

For several years past writers in agricultural papers have been laying great stress upon the importance of warm stabling for all classes of stock; investigators have been experimenting upon the effects of cold upon the production of flesh and milk, and now the craze has taken such a firm hold of peoples' minds, that recent writers have been insisting upon the necessity of putting stoves in stables. They have become so scientific that they know that food is fuel used for the production of animal heat, and so proficient mathematicians that they can calculate to a nicety that wood or coal is cheaper in the production of heat than hay or corn.

This boom is a natural sequence of others that have demoralized our stock industry. Fancy stock has always been tenderly reared, the fancier the stock the tenderer the rearing, and it is therefore no matter of surprise that such an extreme has been considered justifiable. Experiments have been abundant enough to prove that animals will not gain flesh so rapidly under a low, as under a high temperature, and that the warmth of the body, at a low temperature, when the food is insufficient, is sustained at the expense of accumulated fat. Under such conditions we find that hardy cattle, such as our natives, have an accumulation of muscle to protect their bones from cold, while fancy stock soon becomes literally reduced to skin and bone. Muscular tissue is developed by exercise, and as our aristocratic breeds enjoy little of it, their supply of muscle must be proportionately reduced. We have only to look to the human family for examples of the same tendency. Our enemies will here giggle and jump at the conclusion that we are advocates of straw-stack accommodation, and wish to revert to the dark ages of our stock industry. We are the champions of moderation, and much as we deplore the system of our fathers, if we were called upon to pronounce judgment between the two extremes, it is quite probable that we would raise two cheers for our forefathers for every one for the modern speculators. When a cow gets "on the lift," occasioned by a superabundance of chink holes in the stable walls, and wheat straw in the manger, the disease is not actually contagious, and no veterinary is required to establish the cause, symptoms, and treatment. If veterinary science must be encouraged, no better law could exist than one enforcing the present system of high temperature and high feeding. The feeding of warm food is a boom in the same direction.

However desirable it may be to encourage a good quality, care must be taken that this be not secured at the expense of a still more desirable quality. Healthfulness demands that all domestic animals should have a considerable amount of exercise, and if they are prisoned up in warm stables, they will suffer more from an hour's exposure to cold than they would otherwise suffer in a whole day. It is quite natural that hardiness should be entirely overlooked by our city "authorities," for this quality is specially characteristic of our natives. It is forgotten that heat can be more cheaply produced by keeping the skin in a state of constant activity by cleanliness and friction, and this method, with requisite exercise, makes the

stove effectual in the barnyard as well as in the stable. Another loss sustained by warm stables is this:—In autumn cold weather begins, while the pastures are still green, and here hardy animals will thrive better than tender ones in the stalls, and besides there is a great economy of labor.

If hardiness were estimated at its intrinsic value, there would be a great re-action in our live stock industry. This quality is more valuable in dairy than in breeding breeds. What farmers want is a breed that will give a large flow of milk under average normal conditions as to food and temperature; the forced or abnormal system is prejudicial to the health and longevity of any breed. Hardiness gives health; health produces vigor, and none but healthy and vigorous animals can give wholesome products, or sustain quantity for any considerable length of time.

It seems to us that the average farmer has been progressing rapidly enough without the aid of booms; he soon finds out for himself that comfortable stables and liberal feeding, with plenty of exercise, are all that is necessary for his present requirements.

### Stabling for Cattle.

The *Milch Zeitung*, a dairy paper published in Bremen, Germany, contains many practical articles from the pen of able authors, and in a recent issue it has a lengthy treatise on the above subject, from parts of which we make the following translation:—

It is a great mistake to believe that cattle can live without injury to their health, in narrow, uncleanly stalls, where there is defective ventilation. The breathing of impure air is very prejudicial to their health. The unhealthy condition of the stalls is unquestionably the cause of many diseases, and frequently brings on abortion. It cannot be too emphatically insisted upon that farmers should not shut up their animals in these narrow prisons, where there is little light or air, where dung and filthy water and other unbelongings collect, and where cleanly people cannot enter without disgust. Such cattle cannot thrive, and more especially do young, growing cattle suffer, and with a regard to cows, both the quantity and the quality of the milk are seriously affected.

Every stall requires the following conditions: that it offer sufficient room for the comfort of its occupant; that it be dry, no dampness being permitted to penetrate the floor or walls; that the temperature be easily regulated; that there be sufficient light; that the ventilation be sufficient to draw away the foul air with becoming haste; that it be kept thoroughly clean without wasteful labor; that the passages be spacious enough for purposes intended; that the mangers be so arranged as to produce a minimum waste of feed; that the arrangements be such as will promote a hasty retreat of the cattle in case of fire.

Having dwelt on the importance of saving the manure—"the soul of agriculture," the writer continues:—

1.—All the food and water utensils should be kept scrupulously clean, and when necessary washed out with lime water or lye. The waste food should be completely taken out before a fresh supply is placed in the manger. Such animals as hens, which render the food uncleanly, should not be tolerated in the stables.

2.—Don't be too saving of the litter; it should be frequently renewed; no wet or dungy portion of it should remain in the stall, and it should be frequently shaken up and evened about. This is specially necessary to the thriving of the stock, and to the production of clean and healthy dairy products.

3.—The animals, especially the younger ones,

should be kept clean by rubbing them at least once a day with a wisp of straw, and grooming them thoroughly with comb and brush at least once a week, being careful not to use a sharp-toothed comb. Never forget to keep the cows' udders clean, rubbing them often, but not with ice-cold water, drying thoroughly with a coarse woollen cloth. Cattle breathe, as it were, through the skin, and the importance of maintaining atmospheric communication between the air and the blood through the pores is so great that the animal may become excruciatingly tormented if this hide-breathing be prevented by artificial plugging up of the pores. The exterior dirt must therefore not only be removed by grooming, but also the finer dust and loosened scales, which, owing to the sweat from the paste, cause a plugging up of the pores and an exclusion of the air. This condition throws two much work on the lungs; the more active the skin is kept, the less work will the lungs have to perform. Neglect of this important consideration is a fruitful source of disease; and the animal products, as articles for human food, greatly suffer in point of healthfulness.

4.—The feeding, drinking, milking and outing of the cattle should be punctually attended to; otherwise they become restless, which circumstances have an injurious effect on their thrift as well as on their products.

5.—The cattle must have sufficient time between meals to allow their food to digest, so that the more difficult the food is to digest, the longer should be the time between meals; or in other words, keep the most digestible food for the evening meal, so that it will be fully digested before morning.

6.—Feed according to the natural appetites and digestive capacities of each class of animals; and arrange them so that the greatest eaters come together in one stable, thereby causing less labor in the distribution of the coarser and more indigestible foods.

7.—Keep away as many strangers as possible, and never permit dogs or hogs to enter the stables. Anything which disturbs the comfort and peace of the animals has an injurious effect upon their thrift.

8.—Plenty of exercise should be given to each animal daily, according to its ability to stand it. This advice should be strictly followed in reference to growing animals.

9.—Gentle conduct cannot be too strongly recommended. Rough handling not only makes the animals mistrustful and excitable, but also produces profitless results from the food given. Rough, soulless, and irritable cattle should never be tolerated about the premises.

Now is the time to gather up all the bones scattered about your yards. Smash them with an old axe or a sledge hammer, the finer the better, and place the broken pieces into a barrel or other vessel, interspersed with layers of good hardwood unleached ashes. Keep the mass moist, not allowing the lye or potash to escape; in a few months the bones will become jelly, and you will have a fertilizer superior to much of the stuff that costs \$40 or \$50 per ton in the market.

Mr. Henry Stewart expresses the safe opinion that phenomenal butter yields, secured under the current reckless system of cruel feeding, can no more serve as a test of the productive capacity of a breed of cows than would the time record of a spirited horse driven with lash or spur and dropping dead at the end of the course, suffice for measure of normal speed.

A firm in Pennsylvania has planted 600 acres of the *Catalpa speciosa* and contemplate enlarging their plantation.

## Farmers' Clubs.

## Middlesex Agricultural Council.

The usual monthly meeting of this Council was held on the 17th ult. in the office of the FARMER'S ADVOCATE. The time was chiefly occupied in discussing the report of the Committee appointed to visit the Model Farm. Mr. Henry Anderson, chairman of the Committee, read the report as follows:—

On the 7th of October your committee arrived at the Farm and spent the afternoon in examining the different departments of the Farm, the garden and the creamery, as far as the time permitted. They found that the soil of the farm varied very much; it is not all first-class land by any means, but they consider this no objection to a public experimental farm. A large proportion of the land in the province is no better than the Model Farm, and it is important that students should have an opportunity of learning how to improve land that is not naturally first-class. There is a great deal of draining required; there are plenty of Canada thistles to extirpate, and if students can be shown the best methods of doing these things by practical experiments, there is no knowledge in the whole system of cultivation more necessary and useful.

They paid particular attention to the creamery. It has long been regretted that Canadians should lose such a large amount of money on account of the poor quality and low price of their butter, and the only remedy has been supposed to be the establishment of butter factories, as farmers in general have not facilities for making first-class butter at home. To attain this object it was necessary to show farmers by actual experiment that it paid better to send their cream to a well-conducted factory than to manufacture it themselves.

From an inspection of the accounts your committee is satisfied that this has been demonstrated to the satisfaction of the numerous farmers who have patronized the Guelph factory this season. Prof. Barré is a perfect enthusiast in his profession, and is only too ready to instruct all visitors.

Your committee was rather unfortunate in the time chosen for their visit, as the greater part of the live stock was away at exhibitions, and as the harvest was past they had no chance of observing the growing crops, and the principal outbuildings had been lately burnt. The afternoon passed before they had time to examine but a small portion of what was being done on the Farm, so that they can only make a general report of their impressions from what they saw. Prof. Brown kindly accompanied them and was anxious to give all the information required.

Your committee spent the night in Guelph and returned to the Farm in the morning. As it was raining they devoted the few hours they had to spare to the College. They were heartily welcomed and shown through the interior of the building; and as it is impossible in a report of this kind to go into details, we will only express our conviction that there is no better school for a young farmer to finish his education. Prof. Pantou appeared to us to be particularly well posted and familiar with the several branches under his charge, and he was certainly most obliging in giving us explanations. Your committee were kindly entertained by the Principal, Prof. Mills.

With regard to the frequent complaints that the College and Farm are too costly, your committee have no special means of judging more than yourselves and other farmers as to whether it costs more than is really necessary to secure the results attained. If it does not cost more, it is an exception to all other Government institutions.

## COMMENTS UPON THE ABOVE REPORT BY THE EDITOR OF THE ADVOCATE.

We were unavoidably absent from the meeting when the resolution was passed appointing the committee to visit the Model Farm, but we understand the object was to obtain an independent expression of opinion with regard to the merits of the institution, seeing that so many conflicting ideas existed in the minds of farmers. We leave our readers to judge if the committee has served the best interests of agriculture, and if the report is worth the money which our farmers have to pay for it. All we want is to ascertain the truth, and we would have raised no objection to the appointment of the committee had a more opportune season been selected. The ADVOCATE is the only independent agricultural journal published in the Province; we have visited the Farm at all seasons of the year and at all hours of the day, and there are still many important facts which we have not yet been able to bring to light. What then can be expected from any body of men, whether practical farmers or agricultural professors, in a flying visit to the institution?

The committee undoubtedly felt the weight of their responsibility to the farmers of the Province, and therefore put forth every effort to obtain facts which would be of service to our agricultural interests, and yet the diligent students of the ADVOCATE cannot fail to be struck with the meagreness of the information obtained. That the government creamery is a paying business for the farmers in the vicinity of Guelph; we do not deny, but the report fails to state what percentage of their profits is made at the public expense. It failed to state whether or not their methods of draining and thistle extirpation were in any way superior to those of the ordinary farmer. If the farm managers, with all their knowledge of scientific farming, have to follow the old practical rut, then where are the advantages of the institution?

Many agricultural professors have visited the Farm from time to time, and nothing has lowered such gentlemen in our estimation so much as the fact that they have with one voice spoken of the management in terms of the highest praise. But these professors are not altogether to blame; it would be unprofessional and undignified for them to return criticism instead of thanks for the toadyism of the managers.

It is true that in our private capacity we hold an office in the Middlesex Agricultural Council, and shall do all we can to forward any useful schemes it may have in contemplation, but in our public capacity as editor of the ADVOCATE, we are as independent of the Council as we are of any other corporation; and the Council exercises the same freedom with regard to us. It is therefore to be hoped that these candid and friendly remarks will stimulate the Council to be more cautious in future before voting on further agricultural expenditures.

SIR,—Enclosed find \$2 and two new names; will try and send you more. Have taken the ADVOCATE for years. I also take the Globe and Mail, but hail the ADVOCATE for its independent articles. Long may it prosper.

JOHN G. HENDERSON, Hoodstown.

## Prospects of the Middlesex Agricultural Council.

BY MARSHFIELD.

I have read about the organization and incipient development of this Council with keen interest, and it is with great pleasure that I resume my pen and give a word of caution and encouragement. I have never known a farmers' club to have been organized under brighter auspices, and yet owing to this very circumstance greater caution should be exercised. If the originators are men of such character as has been represented in the columns of the ADVOCATE, they will not willingly say "die;" but they are also represented as men of long experience, by which the reader is to infer that they are of considerable seniority, and therefore very conservative in their views. This is out of sympathy with the youths of the nation who are beginning to make their influence felt—in an age when such old fogies as our Senators and the Council of the Agriculture and Arts Association are respectfully enjoined to take an official rest during the surplus span of their lives.

The Middlesex Agricultural Council will have much jealous rivalry to contend with. The Government is squandering public money in organizing Farmers' Institutes throughout the Province, inaugurated at the beginning of this year with loud triumphal flourishes. So long as any good is expected to be accomplished in this manner, the free and self-reliant spirit of the farming community will be chilled, and another period will elapse before farmers become thoroughly aroused to the fact that their only hope lies within themselves. However, the Council is a grand experiment; it is a practical test of the vitality existing in the farming community. It is questionable if the Government forces are appreciably stronger than those of the Council, for the public funds in the hands of the former are largely neutralized by the powerful organ at the disposal of the latter. But the Government has its agricultural organs too. The special fund of the Council—that is, the \$100 granted annually by the editor of the ADVOCATE—forms a very good nucleus, and will be supplemented as soon as the farmer opens his eyes to the fact that it is more effectual and economical to make voluntary contributions than to pass his hard earnings through the hands of the Government officials and other politicians who are eternally clamoring for his affections.

I observe by the last prize essay published in the ADVOCATE that the Council is meditating the founding of an experiment station. In this it will also clash with the Government and its agricultural organs and other confederates in the winning of popular applause. I have little faith either in the skill or in the stability of the average farmer for such an enterprise; it requires a specialist—an enthusiast, in fact. Such an undertaking could be efficiently and profitably conducted by an agricultural journal, but if the experiments were inspected by a committee of the Council, they would win greater confidence amongst many farmers. There are many practical experiments that could be conducted at little or no expense; those conducted by the Government do not meet our present wants; they are too expensive, and are not usually presented to the

farmers in a practical and intelligible shape. There is ample scope for competition.

This is an opportune time to commence a series of experimental tests. There is a great deal of rascality in the seed and the fertilizer business, which ought to be thoroughly investigated and vigorously exposed. I shall not waste space in detailing all my observations and experience in the seed frauds, but shall mention an incident which happened to me this spring, and may be taken as a fair specimen of the frauds from which we are constantly suffering: I procured tomato seeds which were said to be an excellent new variety, called King Humbert. It yielded fairly well, but the fruit was small, and the shape was almost exactly like that of a pear. On investigating the pedigree, I found that the same variety had been grown for years by certain market gardeners under the name of the Wonder of Italy, and that it had been well known a quarter of a century ago by the name of the Pear Tomato. No farmer questions the necessity of getting the best new varieties of all farm and garden seeds as often as possible; and a test station of not more than a few acres would save farmers and gardeners hundreds of thousands of dollars every year—besides an unlimited amount of provocation.

In the fertilizer business there is also a serious loss to the farmers; but the new Dominion Act, if strictly enforced, will mitigate the evil very considerably. A test ground, however, with a competent analyst, would be the most potent means of educating the farmers and of striking terror into evil-doers. In some sections of the Dominion the necessity for concentrated fertilizers is more urgent than a frequent change of seeds, and there is much more scope for fraud in the former case than in the latter. In England, where the fertility of the soil is superior to that of ours, not only are concentrated fertilizers procured from many parts of the globe, and especially from Canada, but rich, concentrated foods are fed to stock in the luxuriant pastures for the mere purpose of enriching the land. English farmers, as a rule, unlike those in Canada and the United States, feed their stock and fertilize their land on well defined principles; hence they almost invariably obtain a profit. In the Eastern and Northern States, where adulteration is practiced to an alarming extent, the fertility of the soil has been allowed to run so low that concentrated fertilizers must be had at any price, even when applied without any pretensions as to the "know how."

We should not misinterpret these practical lessons. The American farmers commenced too late; they delayed until the quantity of their farmyard manure became woefully insufficient to produce profitable crops, and they had to rush into fertilizers before they had time to gain any knowledge or experience with regard to how to apply them. We should commence now to supplement our home-made resources, and gain knowledge and experience as we proceed. The greatest economy in the use of concentrated fertilizers can only be attained when they supplement farmyard manure—not when they are applied alone. Soil can be exhausted without any knowledge of agricultural science; it is in the restoration of fertility that the science is needed. We have succeeded in steering clear of the butter and cheese frauds which are playing havoc with our neighbors, ruining their reputation in both home and foreign markets; now let us guard against impending rascality in our fertilizer business.

## The Farm.

### Farm Drainage.

NO. III.

Having explained the sources of plant nutrition, the losses of plant food sustained by surface washing, the gains derived from percolation, and the dangers of a loss of nitrogen in the form of nitric acid, it is now in place to consider:

*The action of stagnant and of moving water in the soil.*—Percolation, of which we have already spoken, is water in motion, but we have only considered it with reference to its action as a carrier of food to the roots of plants. Soil water has still other forms of motion; but as motion is produced by relief from stagnation, we shall first examine the effects of stagnant water in the soil. Let it first be borne in mind that the primary objects in all our field operations are (1) to obtain warmth, and (2) to secure a proper and regular quantity of moisture. Such objects are required for early and regular growth, and as drainage has been known to increase the temperature of the soil 6° to 10° Fahr., it will be seen that in our climate two or three weeks earlier growth can be obtained, sometimes giving us an April climate in March. We would have a still greater compensation if all our lands were drained, which would act largely as an indemnity for the destruction of our forests.

The injurious action of stagnant water consists firstly in its lowering the temperature of the soil by surface evaporation. Evaporation goes on both at a high and a low temperature, and it requires a great amount of heat to convert the water into vapor. This heat is abstracted from the soil, and adjacent objects, if any. Supposing the rainfall to be 30 inches, then its evaporation would require the quantity of heat that could be produced by the combustion of 1 cwt. of coal per acre per hour throughout the entire year. Besides the abstraction of this enormous quantity of heat, stagnant water acts injuriously by preventing the descent of air, the warm oxygen of which is the great preparer of plant food, thereby preventing the downward growth of the crop roots, and tending to produce blights, mildews and rusts. It is now evident that this water must either be drained off or put into a state of constant motion.

That water is a bad conductor of heat is observed by placing heat at the top of the water, when the heat will be found to descend very slowly by conduction from one particle to another, and the greater the surface evaporation, the cooler will the lower particles become. If the heat is applied from below, however, the particles of water first heated, being specifically lighter than those above, ascend to the top, the colder particles at the same time descending; thus a motion or circulation is constantly kept up, and the temperature of the mass of water, as well as that of the soil, tends to be uniform throughout. How are we now to get the heat below the soil water? If the soil is in the proper condition with regard to drainage, the soil particles will be saturated with moisture, while the spaces between them will be open for the reception of air. When the weather is warm, the warm air will sink down to the "water

table," and when the rains descend, they not only carry their own warmth down, but also the heat of the surface soil, whereby the surface becomes cooler as the rain descends.

Now compare these effects with those of evaporation and radiation. It has often been observed that water cools rapidly, proving that, though a bad conductor, it is a good radiator of heat. A wet soil will therefore cool rapidly, which cooling process is greatly assisted by convection; that is, when the upper layer of water becomes cooled by evaporation and radiation, the cooler and consequently heavier particles will descend, the warmer and lighter particles ascending, and thus an injurious interchange of particles is constantly taking place, which, if continued long enough, the remaining mass of water will congeal.

*Effects of Drought on Drained and Undrained Land.*—At a cursory view it would seem that draining water from the soil produced drought. But the most ordinary experience teaches us a different lesson, no science being required, although we must depend upon science to explain the apparent inconsistency. It is never pretended that drainage is always proof against drought; but this is certain, that the driest soils are the most benefited by being drained.

Let us make a starting point of the fact that the porosity of the soil depends upon the quantity of water in motion and the rapidity with which it moves. This condition is, of course, increased by tillage, and it explains the reason why drains do not produce their best results for several years after their construction. Porous soils admit air as well as water, and we shall first consider the relation of the atmosphere to soil moisture. The quantity of land water does not vary; if it is not in the soil it is above it in the form of vapor. Heat, by expanding the particles of water, keeps them in the vapory form; and when the vapor strikes cooler bodies, heat is abstracted, the particles contract, reunite, and being heavier, descend in the form of rain or dew. When the soil is rendered porous by drainage, tillage, and the constant motion of the water it contains, the vapor enters with the air, and the soil being the cooler, the vapor is condensed and absorbed by the soil particles, furnishing not only moisture, but also fertility. Apart from the benefits of the moisture, there is both a direct and an indirect gain from a fertilizing point of view: the air not only furnishes plant food directly, but is also the means of preparing the raw store of food already in the soil. The quantity of vapor condensed and absorbed by different soils varies very materially, the finer the particles the greater the moisture. Soils may therefore be classified in the following order with respect to their capacity to obtain water from the atmosphere, viz., humus, clay, loam, sand.

There is still another source of soil moisture, more important than that which we have just described. In dry weather the water table furnishes an inexhaustible supply of moisture, which constantly ascends by capillary attraction—just as oil runs up a lamp-wick. Here there are two very important points for consideration. (1) The soil must not be too fine, as is the case with stiff clay, else capillarity will act very weakly; and if the soil is too coarse, as in the case of coarse sand, the attraction of gravity overcomes

that of capillarity, and the water will not rise—a proper mechanical texture must therefore exist in the particles of soil; (2) the drain should be so regulated with regard to depth that the underground water below the influence of the drain will easily rise to the feeding roots, evaporation being prevented as much as possible. This motion of water always plays an important part in relation to fertility. Soluble matters of the soil, or of the manures, are carried up with the water to the roots of the growing crop, the water therefore acting as a distributor of plant food, and making it accessible to all parts of the roots.

*Frosts and Floods in Relation to Drainage.*—Having presented the main advantages of drainage, we shall now consider a few objections that have been raised. We have already explained the danger of loss of nitric acid and how to prevent it. Objections have also been raised on account of frosts and floods.

It has been said that frost penetrates the soil so deeply in drained land that considerable time is wasted during the spring months in thawing the mass of ice. In answer to this we cannot do better than to quote the words of so able an authority as Mr. J. J. W. Billingsley, of "The Drainage and Farm Journal," published in Indianapolis, Ind. He says:

"The water of saturation for the most part is removed as it falls, passing down to the drains and away, leaving only the water of moisture to freeze, which admits of being frozen deeper, but at the same time it is open and porous, and as soon as the surface of the ground begins to thaw, the water enters readily into the frozen, porous earth, thus thawing out sooner than where both the water of saturation and the earth are frozen into a solid mass. The disintegration or separation of the soil particles is quite as complete for the reason that the spaces between the particles of soil not being filled with water, admit of a ready separation, which also accounts for the deeper freezing. This is not only true in theory but also in practice, and will be verified by all farmers who have experience in tile drains."

Another grain of common-sense will also dispel the illusion with regard to floods. It is true that open drains, sluices, etc., may materially assist the overflowing of lands where the waters collect, to the detriment of riparian proprietors, especially in the open drainage of swamps; but it may be argued that a pound of ague is worse than a ton of flood. With regard to tile drains, however, the effect is the reverse. Drained soils hold immense quantities of water, which, in undrained land, would wash over the surface and produce floods. Prof. Kedzie estimated that dry sand will absorb one-fourth of its volume of water, and a depth of three feet will hold nine inches of rainfall. A like depth of mould will hold five inches. Moreover, the water of saturation—that contained between the particles of soil—does not begin to flow through tile drains until after 12 to 24 hours after the shower ceases, and then does not reach its destination until the floods caused by surface washing begin to subside. The greater the rainfalls and the older the drains, the more water will the soil hold. Tile drainage is therefore a preventative of floods.

The most practical benefit which all these drainage operations produce consists in the deepening of the soil for the expansion of the growing roots. The soil, being finely pulver-

ized, contracts, the particles come into closer contact with the roots, and the greater the area of contact, the greater will be the supply of nutriment. All these advantages which we have claimed for drainage are quite consistent with practical experience; for scores of farmers have informed us that drains paid their bill of costs the first year, when constructed on the best recognized principles. If so, what must be the profit say in the fourth or fifth year, when the drains begin to get into first class running order? How miscalculating a farmer must be in continuing year after year to draw the scanty fertility from a mere shell of surface soil, when the inexhaustible resources several feet below can be so easily and cheaply obtained! When will he be convinced that it is vastly more profitable to spend his hundreds of dollars in deepening his acres than his thousands in purchasing the farms of his neighbors?

#### Agricultural Depression in Britain.

[FROM OUR LIVERPOOL CORRESPONDENT.]

The depression in every branch of industry in Great Britain still prevails. Indeed, in this month of October it is worse than it has been known to be during the bad times since 1876, when the stagnation began. A critical winter is before the people. A general election, under the new and more extended franchise, is about to take place, and that event keeps up a good deal of excitement. Added to that, strikes abound in many of the centres of manufacture, owing to attempts to reduce wages to enable employers to meet lower prices. The condition of agriculture is simply deplorable. An agitation is going on for the creation of small farms of from three to ten acres each, and to establish the laborers thereon. Men of experience know very well that such a scheme cannot succeed, whilst large capitalists are unable to make their farms pay whilst wheat is at 32s. per quarter, and the prices of cattle and sheep are ruinously low. Under these circumstances there need be no wonder that the National Fair Trade League, which demands an import duty on foreign corn and live and dead meat, should be making progress. By such a change of fiscal policy it is contended that the heavy taxation on British agriculture, both imperial and local, might be considerably reduced. A new paper in London has just been started to advocate these alterations, with a view of giving colonial producers advantage over foreigners who, by high tariffs, shut out British goods from their markets.

The cattle and sheep trades are exceedingly flat. The masses have not the purchasing power which they formerly possessed, consequently there is but a very limited demand, even at the lowest prices. As already observed, the distress which has for a long time exhibited itself in the manufacturing districts, has now extended itself to the railway interests. Wages are being cut down and the time of employment shortened, thus aggravating the misery and distress which already so widely prevailed. The London and North-Western Railway Company have given notice to their men that they will make a reduction in the time of labor of one day per week, and this course is to be followed by several of the leading carrying companies in the three kingdoms.

As an evidence of the extreme depression it may be remarked that, for the first time, sheep from the south of England have been sent to the Lancashire markets. The consequences may be readily imagined when these sheep strike at the already over-gloated Irish and Scotch importations. At the leading sheep sales in the north, the depression is shown in all classes of sheep by a depreciation in value to the extent of at least thirty per cent. on last year's prices, whilst at the large sheep sales held in Germany, last year's lambs have had to be sold at a clear loss of 2s. to 3s. per head, after sinking the whole year's keep.

With comparatively good seasons it is remarkable that the depression in British agriculture should be so intense as it undoubtedly is. It is anticipated that with the crushing drop in prices of cattle and sheep, a number of struggling men, who have so far managed to keep above water during the bad times, must now go under. In regard to live stock the shortness of winter keep will necessitate the sale of animals either as stores or half fat, which under happier circumstances might have been wintered. Consequently, we find meat markets overdone with a lot of half-fat or store animals, for which there is little or no demand. Those who must sell have to take a ruinous price; whereas, if these animals could have been kept until really fit to come out next spring, they might have made prices which would have left some profit. It is expected that meat of all kinds will be dearer next spring owing to the difficulty of winter feeding.

At the great Southdown sheep fair held at Lewes in the last week of September, prices were lower than they have been since 1869, when sheep sold at 24s. to 48s., and lambs at 18s. to 30s., as compared with 25s. to 51s., and 15s. to 35s. this year. Last year the quotations were 36s. to 61s. for sheep, and 19s. to 44s. for lambs; and in 1883, 43s. to 64s., and 24s. to 48s. For larger varieties of sheep the fall is greater. A well known Hampshire breeder has stated that draft ewes in that county are worth barely half as much as they were two years ago, and that lambs which would have been worth 52s. in 1883, have this year been sold at 26s.

As Canadian readers will be aware, the Dominion had an extraordinary exhibit of manufactures and other goods at Antwerp, and this is having a most beneficial effect. It is to be hoped that the interests of everyone connected with the Dominion will be well represented at the London exhibition. During the last few days of the Antwerp show a magnificent exhibit of fruit was made. The pears and peaches were remarkably good, but the apples would have been considered decidedly inferior at any one of the Western Ontario exhibitions. A visitor noticed a large number of apples well known in Canada—Spitzenburgs, Greenings and Fameuse—but these had certainly not improved by being transplanted to Dutch, Belgian and French soils. As a matter of fact, Canadian apples, if properly shipped, cannot be excelled by any country in Europe. The show at Antwerp, the first in Europe of the kind, fully demonstrated this.

There are \$20,000,000 spent annually in the United States for commercial fertilizers.

### Valuation of Farm Products According to their Chemical Composition.

We have frequently pointed out the injustice which progressive farmers were suffering from the existing methods of disposing of their milk to the creameries and cheese factories. When milk rich in casein is required, then that which has a large percentage is sold for the same price as that having a small percentage; and when butter fat is the desirable article, the milk containing a large percentage has the same market price as that which contains a small percentage.

The curd may vary from 10 to 25 per cent., and butter fat from 2½ to 10 per cent., there being also a great variation in the percentage of butter from the cream. If pay were given according to quality, it is now plain to be seen that the farmer with the superior cow would receive two or three times as much money per season as the farmer with the inferior cow, whereas his receipts are usually about the same, although the cost of production of high quality is much greater, so that the percentage of profit must be less. This system of injustice is in reality a premium awarded to slovenly, ignorant farmers.

Now, if this unfortunate system were confined to dairying alone, there would be some prospect of relief. In dairying the injustice is better known and more easily comprehended; but the loss sustained is equally great in all the products which are sold off the farm. Any production of the field may be divided into its constituent parts like the milk. The nitrogenous compound, called casein in the milk, is named albuminoids or protein when applied to field products, and in ordinary language is known as flesh formers, for its chief function as an article of diet is the formation of muscular tissue. Animal and vegetable fats are also the same; but plants have substances called carbo-hydrates, which include starch, sugar and woody fibre; milk, however, has also quite a percentage of sugar. These are carbonaceous substances, and are called carbo-hydrates because they are composed of carbon and the elements of water. As their function is the same as that of fat, they may be regarded as such, although their heat producing power is not so great. Plants, like milk, also contain saline matters which, though very important, we have not space to discuss here.

Now, it is well known that nitrogenous fertilizers are the most expensive, and as they are required to build up the albuminoids, which, in their turn, are the most valuable constituent of the plant, it follows that expensively manured plants are not only more costly to produce, but also more valuable, so that if the same market price is obtained the progressive farmer suffers the same injustice as the progressive milkman. In the case of the cow, the variations are the results of feed and breed; so in the plant; its composition depends upon the variety and the system of manuring. In both instances climate has also a modifying effect.

Let us now take our commonest grains and examine what variations are found. In the analysis of 57 samples of wheat, the albuminoids varied from 8.4 to 14.5 per cent. Take the same variety of wheat, viz., the Clawson, grown in the same State, viz., Michigan, and

the percentage varied from 10.9 to 12.4. In a large number of analyses of spring wheat, the percentage of albuminoids varied from 8.1 to 15.5, being about 1.3 per cent. more than the average of winter wheats, and so makes better flour. There is still a greater variation in the albuminoids of corn, but as corn is chiefly valued for its fat, let us add that the percentage of fat varied from 3.4 to 9.3 in the different varieties analyzed. In the same variety the fat varied from 7.88 to 13.65 per cent. for Flint, and 8.5 to 11.75 for Dent. In oats the variation in the albuminoids varied from 8 to 14.4 per cent.; and in different samples of barley grown in central New York, all graded alike, there being also no difference in the appearance, there was a variation from 8.6 to 15.7 in the percentage of albuminoids, and from 1.48 to 3.15 per cent. of fat.

We might continue in this strain through all the productions of the field: but enough has been said to show that wheat may sometimes be oats, and oats barley, etc. Nitre or salt-petre is a strongly nitrogenous salt, and experiments made with it upon wheat increased the albuminoids to 23½ per cent. The same effect is manifested when highly nitrogenous foods are fed to cows, the percentage of the valuable constituents of the milk being largely increased. These lessons prove that the business-like farmer will feed his highly manured grains to his family or his stock, instead of being cheated out of his rights on the market place. It must also be borne in mind that such products always produce the richest manure, so that there is a double loss in selling them.

The same principles apply, of course, to fruits and vegetables. Not only has the chemical composition of fruits been changed by certain methods of manuring and tilling, but also the color, size and flavor. This is especially an interesting and important field for investigators, and we should not work blindly any longer.

These thoughts have been suggested by the practice lately adopted in Germany of paying for milk according to its percentage of fat as ascertained by analysis once every two weeks or oftener. This practice will soon spread, and the time may come when it will be introduced into all the productions of the farm.

### Treatment of Hog Cholera.

Prof. E. A. Grange, of the Michigan Agricultural College, writing to the *Prairie Farmer* on this topic, says: "Veterinarians, who had very extensive experience in the investigation of the disease, are of the opinion that treatment ought not to be resorted to except in the early state, but that the affected animals must at once be destroyed, and their bodies cremated. In those cases where treatment is deemed best, carbolic acid has gained a most favorable reputation. It may be given by allowing, say, 10 drops of a 95 per cent. solution, for every 100 pounds of the animal's weight, 3 times a day, in the animal's food, or largely diluted with water. The bowels should be kept open with laxative food, or a few ounces of castor oil, if necessary." [The carbolic acid solution of the prescribed 95 per cent. strength can be got of druggists.]

### Stock.

#### A Chatty Letter from the States.

BY OUR CHICAGO CORRESPONDENT.

These seems to be no abatement of the swine plague in the west, or whatever it may be. As yet our veterinarians have seemed wholly incompetent to cope with this disorder which commonly goes by the name of hog cholera. There are scores of patent cures advertised, but, as a rule, men of experience depend upon charcoal, coal oil, tar and other simple remedies. In one instance a Nebraska cattle feeder who lost 700 hogs last winter which were following his cattle, has bought cooking and grinding apparatus, and this winter proposes to feed his cattle in stalls on boiled and ground corn, with chopped hay mixed in.

This mode of feeding, by the way, is growing in favor in the west, and the opinion of practical, experienced men is that the results will prove more satisfactory than where the cattle are fed whole grain, uncut hay and allowed to run around in the cold, requiring a large quantity of material to be consumed merely for keeping up animal heat.

While in Illinois and adjoining States some of the most successful feeders, as for instance, John Gillett and John Marriott, feed whole grain in the open air, reason would seem to argue in favor of sheltering the animals and leaving for their grinders and digestive organs as little to do as possible.

One large outfit, the Union Cattle Co., of Cheyenne, Wyoming, has just completed stalls and fixtures for feeding 5,000 cattle in Nebraska. The feed will be boiled and ground, and the cattle to be fed are Wyoming rangers, which the company has, heretofore, been marketing in the fall just off of wild grass for what they would fetch in the market. Each year this enforced marketing of range cattle within a prescribed time in the late summer and early fall, has been becoming less satisfactory to western ranchmen. This year there has been more dissatisfaction than any year yet, and no wonder, because seven-eighths of the western range cattle have not been in marketable condition, and western men, or at least a great many of them, are thoroughly aroused to the fact that something must be done to enable them to scatter their beeves along through the months, and not crowd the entire crop upon the market in a few weeks.

Sheep have never been marketed more freely than this fall. It seems a little singular, but some of the very best sheep marketed have come from far off Montana. Prices have been low, however, and sheep husbandry is not in a very encouraging condition. The railroads of the northwest which formerly furnished double deck cars have now followed the example of the roads in the southwest, and refused to haul them. This places sheep shippers at a very great disadvantage.

The coming fat stock show at Chicago promises now to be a much greater success than the managers have heretofore dared to hope for. At an early date applications had been made for over 25,000 tickets to the opening night. The entries will be larger than ever, and the addition of the dairy and cheese departments will prove an important attraction.

But now that the show is to take in dairy stock as well as horses, its name will not signify what it should. How would Live Stock Exposition do?

Over-feeding stock is already a craze, and there is no telling where it will be carried through the influence of the fat stock shows.

The country, for some years past now, has been fairly flooded with patent palace stock cars of various kinds, the owner in each case claiming perfection. In some cases shippers of beef cattle from Chicago to the seaboard have tested these cars, but, as a rule, the large shippers have interests in the intermediate feed yards, or have some prejudice against any innovation on the old fashioned flat car. But breeders of fine stock who have much shipping to do are becoming very partial to the new cars in which their cattle can rest and be fed without being unloaded at any and every stock yard. At the Chicago Fat Stock Show, a gold medal is to be awarded to the inventor of the best improved car for transporting horses.

Prices for the best qualities of fat cattle have been maintained remarkably well, considering the fact that low grade cattle have never been selling more unsatisfactorily than of late. During October choice fat 1400 to 1600 lb. steers sold at \$6@6.25, while common 1100 to 1200 lb. cattle were fairly a drug on the market at \$3.50@4.

Feeders in the west are very conservative this fall, and are evidently afraid of overdoing matters. The country seems to be full of corn and of rough feed, and yet there has not for years been so much difference among western men, who usually feed large numbers of cattle.

There is a growing impression that the worst of the hard times has past. But people in the interior are generally last to feel any improvement, and there are many feeding sections where dealers are evidently afraid or unable to invest much money in cattle feeding this winter.

Does it not seem very odd that with the country full of cattle, full of feed, and the banks full of money, there should be "hard times" in the country? The trouble is that prices are so low, margins are so narrow, that no body is able to make any profit even by handling large quantities. Political economy teaches that when the natural products of the country are large the greatest good will accrue to the greatest number. And yet, why is it that in the midst of plenty we are in want?

Fine stock dealers say there is a perceptible improvement in the times, though the sales of improved stock certainly do not show any marked advance as yet. The fact probably is that the country has been more frightened than hurt; but had we not had a timely scare and "taken in our sails" a bit, there are many of experience who claim that there would have been a repetition of the panic of 1873. Now, prices for all kinds of stock and farm products are so low that it would be practically an impossibility to get up a panic at this time.

There is a good deal of talk now among those who are trying to explain the depression in British agriculture, about American competition. Some writers seem to think that the hopes of English farmers depend largely upon the cutting off of American competition, and they seem to think that there is a strong pro-

bability of a sufficient advance in freights and increase of production on this side to give them relief. Surely these are false hopes; because in this country the tendency of transportation charges and general costs of production and handling is downward and not upward.

Lately there has been a good deal of talk about glanders among horses in the west. There may be some truth in some of the reports, but there is such a horde of ignorant and designing men who claim to be veterinarians that the truth of the reports is extremely doubtful.

"Texas fever" still continues to be an unsolved mystery which seems to be known everywhere but in Texas. Whatever it is, it is certainly a very remarkable disorder, as it never affects cattle native of Texas.

**Feeding for Meat, Dairy Products, and Growth.**

The time has now come when the evidence of practical feeders alone is insufficient to obtain the most accurate information with regard to stock feeding. No two feeders agree on the most critical points, so that one man's views must be received with caution by those who contemplate to change their methods. Yet each feeder may be right under his own conditions. Superficially thinking, it may seem that stock-feeding differs from all other farm operations, for the differences of soil, location and climate may appear to affect the products of the field more than it affects stock husbandry. For the purpose of forming a correct estimate, we publish in another column the variations that occur in the composition of different articles of food as affected by soil, climate and manuring, which alone, without reference to the varied characteristics of breeds and individual animals, would account for the wide discrepancies of opinion. The herbage grown on a heavy soil will produce dairy products differing in quantity, flavor and composition from those grown on a light soil; the manure from the stock also differs, and this in its turn influences the character of the vegetation.

Many practical farmers have already realized these facts in an indefinite sort of way; but we must look to science for the causes of these practically important effects. Those who have a prejudice against the word science should call it experimental practice; for it is merely practical feeding carried out in such a way as to ascertain accurate results. All the agricultural booms which have swept so disastrously over our land have been inaugurated by practical men whom the demon of speculation has driven into insanity; these booms we are able to counteract by the aid of science, and yet nothing would be so disastrous to the farming community as the putting into practice all that is claimed by the enthusiasts of science.

**GENERAL PURPOSE FEEDING.**

Feeding the same ration for all purposes is only exceeded in absurdity by the mania for the general purpose cow. It being well known that different foods, like different breeds, produce different results, both with regard to quantity and quality, the practical issue is, Shall we feed the same food to different breeds, or different foods to the same breed, for the purpose of obtaining different results? or, shall we feed the same food to the same breed for the purpose of getting the same results? - Identical results may also be obtained by feeding two or more breeds on a different system. But we have previously pointed out the absurdity of breeding and feeding for general purposes, so that a specific object should first be aimed at, and the system of carrying it out will then be uniform.

And yet there are certain conditions which apply to all systems of feeding. The food should have bulk suitable to the capacity of the animal; it should have a certain degree of coarseness or porosity in order that it may not form a ball impenetrable to the digestive fluids. Too much coarseness, on the other hand, if the food is not efficiently masticated, hinders digestion. The food should not be unduly heating, such as that containing an excess of fatty or starchy (carbonaceous) substances; or unduly stimulating, such as that containing an excess of saline matters. Exercise is nature's stimulant and appetizer—no drugs or condiments required. So far, the feeding cannot be of too general purpose in its character.

**FEEDING FOR BEEF.**

According to the evidence of our fat-stock show magnates, if their words do not belie their actions, modern beef may be defined to be a mass of animated tallow in a state of disease. An animal normally fed and exercised will have its fat inter-muscularly distributed over its body, and the meat is then said to be well marbled. This is the natural, healthy condition, and such meat is fit for human food. A great deal has recently been said and written about adopting a system of feeding which will produce a certain proportion of lean meat, and diminish the quantity of fat, and Prof. Sanborn's experiments in feeding pigs for lean meat will be found in another column. The professor has overlooked the importance of exercise in the development of muscular tissue. Pure open air is also essential to health, and health produces thrift. The champions of "baby beef" mistake increase of weight for growth. When the food is excessive, and the exercise insufficient, weight is not produced so much by natural growth as by the retention of effete matter in the system, so that the muscular as well as the fatty tissue becomes diseased, the lungs and organs of excretion not efficiently performing their natural functions. Hence the inferior nutritive quality and flavor of the flesh of sluggish animals compared with that of those which lead a free, active life. In the rationally fed animal, there are only three sources of waste, viz., bone, water and offal, while in the inordinately fed beast, there is, in addition, about 12 or 15 per cent. of superfluous fat to be reckoned as waste.

Now if this waste can be saved by feeding a ration rich in albuminoids, many other advantages will also accrue. The flavor and nutritive qualities of the whole carcass will be increased, the manure will be appreciably enhanced in value, and the health of the animal will be so much improved that the prevalence of contagious diseases will be reduced to a minimum. But the Chicago live-stock show has shown that the feeding of a highly albuminous diet produces a great excess of fat, demonstrating that exercise is also required to produce the desired results. In order that our readers may be able to make practical use of these investigations, we give below a table showing the aver-

age composition of the chief products of the farm :

COMPOSITION OF FARM PRODUCTS.

Name of product.	Albuminoids.	Fat.	Carbo-hydrates.
Timothy hay.....	5.8	1.4	43.4
Red clover.....	7.6	1.2	38.1
Corn fodder (green).	1.0	0.3	8.4
Oat " ".....	1.4	0.2	8.9
Rye " ".....	1.9	0.4	11.0
Winter wheat straw.	0.8	0.4	35.5
Oat straw.....	1.4	0.6	40.0
Pea " ".....	2.9	0.5	33.4
Turnips.....	1.1	0.1	6.4
Mangels.....	1.1	0.1	9.8
Oats.....	9.0	4.7	43.3
Corn.....	8.4	4.8	60.6
Barley.....	8.0	1.7	58.9
Poss.....	20.2	1.7	54.4
Wheat bran.....	10.0	3.1	48.5
" middlings ..	8.9	2.6	54.8
Linseed cake.....	27.6	10.4	27.0
" meal (extract)	27.8	2.1	33.9
Flax seed.....	17.2	35.2	18.9

In the above table the figures are percentage compositions, and the proportions given are all digestible. In looking through the column of albuminoids (flesh-forming substances), it must not be supposed that the highest figures mean that the food they represent is the most highly albuminous, for it may also have more fat and heat-forming substances, represented by the fats and carbo-hydrates. As the fat and carbo-hydrates produce the same effects, except that the former has 2½ times more feeding power than the latter, it can be turned into an equivalent of the carbo-hydrates by multiplying it by 2½, and when their sum is divided by the albuminoids, we get what is called the albuminoid ratio. Take timothy hay, for example, and we get  $1.4 \times 2.5 + 43.4 \div 5.8 = 8.1$ , and the albuminoid ratio is expressed thus, 1:8.1, meaning that the hay has 8.1 pounds of heat-forming for every one pound of flesh-forming substances. Now any food or combination of foods which has the same albuminoid ratio as hay, viz., 1:8.1, has the same feeding value as hay. But an albuminoid ratio of 1:5 or 1:6 has been ascertained to produce the best results in milk or fat, although Prof. Sanborn, in his lean meat experiments, fed a ratio as high as 1:1.6. It will now be plainly seen how absurd it is to say that any article of food will produce better results than another without first knowing the combination of foods with which it is fed. Certain limits in the albuminoid ratio must be observed, for if the ration is too highly albuminous, the kidneys of the animal will suffer, and if it is too carbonaceous (contains too much fat and carbo-hydrates) the respiratory organs will be overburdened with work, so that moderation must be observed. The above table gives average compositions. If, however, the products mentioned grow on a rich soil and if the crop is harvested in a good condition, the albuminoids and the albuminoid ratio will be higher; while if the reverse is the case, the carbonaceous compounds will preponderate.

But these truths will be of little practical use to the farmer until our stock-show iniquity is abolished, and until he can rightly estimate the extra value of the manure produced under the newly proposed system of feeding. The tendency is a laudable one, but on this very account we cannot expect a boom, especially as it has had a scientific origin. We anxiously await the results of investigation in cattle and sheep as well as hogs.

## FEEDING FOR DAIRY PRODUCTS.

Feeding for dairy products is not yet well understood, although the investigators are

numerous, able and enthusiastic. Many important facts, however, have been brought to light. Little is known about the source of animal fats, and when this question is settled a flood of light will be shed upon the mysteries of dairy products. It was formerly thought that foods rich in fat would produce milk rich in butter fat, but this theory, within certain limits, has been demolished by countless experiments. The error has been made by mistaking butter for butter fats. Butter contains from 8 to 18 per cent. of water, with variable percentages of cheesy matter. Butter fats, extracted from the milk by chemical analysis, is the pure, unadulterated fat. Besides, in churning a good deal of fat is left in the butter-milk, while by analysis all the fat is separated from the milk, and nothing but the fat. The less cheesy matter in the butter, the longer it will keep; but as butter containing 18 per cent. of water will bring as much money as that containing 8 per cent., and as the keeping qualities have little to do with the market price of fresh butter, the practical question is, How shall we get the greatest quantity of butter, not of butter-fat? On similar principles quantity of milk is what is desired from cheese cows, not the greatest percentage of solid matter in the milk. These facts prove the absurdity of our boomed systems of butter and cheese making.

In butter making, and in the feeding of cows for the production of butter, the following conditions should be carefully observed: Succulent foods—and especially those which are partially fermented, such as ensilage—favor quantity of milk; that is, milk having a higher percentage of water and a lower percentage of fat, but the cream of such milk will churn more quickly and perfectly, leaving less fat in the butter-milk; in churning thick cream less fat is left in the butter-milk than in churning thin cream. Acid cream makes more butter than sweet cream, but the quality is inferior and is less healthful. Feeding dry, concentrated food produces a smaller quantity of milk, but the percentage of butter fats and other solids is greater. The cream from dry feed will produce more butter fats than butter, while that from succulent foods will produce more butter than butter fats; in feeding a mixture of dry and succulent foods, the quantity of butter will usually be about the same as that of butter fat, and this appears to be the most desirable method of winter feeding. Feeding a high albuminoid ratio, that is, a food or mixture of foods rich in nitrogenous substances, the quantity of milk, within certain limits, will be increased, the fats and other solids will also be increased, but if the ration is too rich, the quantity will usually be somewhat reduced, although the quality will not suffer. High rations produce milk at a greater cost per gallon than low rations, but the extra expense is more than repaid in the extra quality of the milk and the manure. This higher cost is due to the fact that foods rich in albuminoids have usually a higher market price than those containing a large percentage of carbonaceous substances. The same rules will apply to feeding for cheese, providing it is made at home, for the object desired is to obtain the highest possible percentage of solids, or the lowest percentage of water, which is the same thing; but if

the milk is sent to the cheese factory, then the farmer who works on this principle would be cheated on all hands by his more reckless neighbors.

It seems inconsistent that high rations should produce lean meat and at the same time produce milk rich in fat. Little being yet known about the formation of fat, this cannot be satisfactorily explained. It is well known, however, that albuminoids contain about 50 per cent. of carbon, so that they may be easily changed by the animal system into fatty substances—possibly more easily into butter fats than into fatty tissue. Possibly the individual characteristics of the animal has most to do with these changes.

## FEEDING FOR GROWTH.

Little need be said on this subject; for nature is our best chemist. Milk, the natural food of young animals, is highly albuminous for the purpose of building up the tissues, and as the mineral matters are associated with the albuminoids, it must contain a large proportion of these salts, which are required for the construction of bone as well as muscular tissue (lean meat). Fats have neither nitrogenous nor mineral matter. The food of growing animals should therefore be highly nitrogenous.

## GENERAL REMARKS.

Let no mistakes be made in the technical names used. Albuminous, nitrogenous and protein substances have practically the same meaning, being the tissue forming portions of the food. The fat and heat-forming portions are called carbonaceous or non-nitrogenous compounds; these are divided into fats and carbo-hydrates, all being composed of carbon, hydrogen and oxygen; but the latter, such as starch, sugar, crude fibre, etc., always have their hydrogen and oxygen in the proportions in which they exist in water, viz., two parts of hydrogen for one of oxygen, while the various fats have these elements in varying proportions.

Practical experience must always go with a knowledge of the principles of cattle feeding; for the characteristics, including the likes and dislikes of each animal, can only be ascertained by practice, and these sometimes set all principles at defiance. Only general rules can be given either in science or in practice; the good judgment of the stockman must grapple with the exceptions. With a knowledge of these principles any farmer will be able to ascertain for himself the comparative feeding values of any two or more kinds of food. Study the principles and use your judgment.

It is now hinted that the scientific testers who get the enormous butter yields out of Jersey cattle not only feed lavishly, but administer stimulating drugs and tonics to force the milk yield temporarily. A diet of quinine, calisaya bark, nux vomica, gentian, ale and porter might do well enough to brace up an intemperate cow after a prolonged spree, but it would hardly be considered a natural food for the production of a gilt-edged article of butter. It is to be hoped that hypodermic injections of brandy and beef tea, with occasional electric shocks, will not be administered to the cow who next tries for fifty pounds a week. Too much medicine suggests disease.—[Philadelphia Press.

**Sweepstake Herd of Polled Angus.**

In this issue we give our readers a short description of Kinnoul Park Stock Farm, the property of Messrs. Hay & Paton, New Lowell, Simcoe Co., Ont. It comprises over 700 acres, nearly all of which is under cultivation and fit for the harvester and mower. It is under the management of Mr. J. G. Davidson, and the firm is to be congratulated in being able to obtain the services of such an affable and efficient overseer.

They have been breeding Shorthorns for 10 or 12 years. In 1882 they became convinced of the great value of the Aberdeen Angus breed of cattle, and they added a choice herd to their other live stock property.

We think it would be hard to find in any breed of cattle three animals possessing the quality and wealth of flesh which is shown by the three young animals in the accompanying illustration. We refer to the champion two-year-old bull, Black Judge [1] (No. 1), the first prize yearling heifer, Emma of Kinnoul Park [16] No. 3, and the first prize heifer calf, Miss Charcoal [80] No. 4. The three valuable animals are all out of the splendid breeder, Flower of Knockiemill, the prima cow of the C. P. H. B.

There is another matter they wish to make known, namely, the "red calf" that sometimes appears even in the best families of this breed, and they have come into collision with a few of the Aberdeen Angus men in this Province, notably with a firm of importers and breeders to whom the Aberdeen Angus men owe more than to all the other breeders put together. They have been accused by some of these gentlemen of doing a great injury to the best interests of the breed, by exhibiting at London and Toronto a capital specimen of the aforesaid "red calf." They plead guilty to the fact of having exhibited the calf, and would be pleased to be able to exhibit another as good at our fairs next year. They cannot admit that the mere showing of this now famous calf could in the least degree prejudice any one against the Aberdeen Angus breed any more than a white black bird could turn the people against the other black birds.

When they decided to invest their capital in this breed they were neither ashamed nor afraid of any of its characteristics, "ancient or modern," but proud of them all, and have seen no reason as yet to alter their first view. This occurrence of an occasional red in the herd of a black is one of those things which are unaccountable, for they know this for certain that it has occurred in the past and will certainly happen again, and they think the most sensible way is to face the difficulty boldly, and instead of ignoring the fact of its occurrence, to accept it as the inevitable, and make the most of it. There is no sense in hiding it, but there may be a great deal of harm done.

They contend that the breeders of Aberdeen Angus cattle have no reason to be ashamed of this ancient peculiarity of the breed, and are delighted to see that the Galloway men for this year have, for the first time in Canada, publicly exhibited the ancient characteristics of their favorite breed in the shape of a fine specimen of the belted Galloway, and they should very much like to hear Mr. Thos. McCrae's answer to anyone having the boldness to in-

form him of the fact that his showing such an animal would injure the breed to the extent of several thousand dollars.

In conclusion, we would call the attention of our readers to that superb animal (No. 2) Mary 2nd of Knockiemill [2]. She has never been beaten in the show ring, and her stock so far have been equally fortunate.

We give the record of this herd at the leading fairs since 1883: At the Industrial, Toronto, that year they took 1st for aged bull, 1st for bull calf, medal and diploma for best bull any age, 1st for cow any age, 2nd for three-year-old cow, medal and diploma for best herd. At Barrie the same year they took 1st for bull any age or breed; 1st for herd, any age or breed, and 1st for Aberdeen Angus herd. At Toronto Industrial, 1884—First for aged bull, 1st for yearling bull, medal and diploma for bull any age, 1st, 2nd and 3rd for cows any age, 1st for heifer calves, and medal and diploma for best herd. At Collingwood same year they took 8 first prizes. At London, 1885, they took 1st for two-year-old bull, 3rd for yearling bull, 1st and 3rd for bull calves, medal and diploma for best bull, any age; 1st for cow, any age; 1st for three-year-old cow, 1st for yearling heifer, 2nd for heifer calves, and grand Dominion premium for best herd. At Toronto Industrial, 1885, they took 1st for two-year-old bull, 1st for yearling bull, 1st and 2nd for bull calves, 1st, medal and diploma for bull, any age; 1st, 2nd and 3rd for cow, any age; 1st for three-year-old cow, 3rd for two-year-old heifer, 1st and 3rd for yearling heifers, 1st for heifer calves, and medal and diploma for best herd. At Collingwood they took 1st for three-year-old bull, 1st for two-year-old bull, 1st for one-year-old bull, 1st for bull calves, 1st for cow, 1st for two-year-old heifer, 1st for one-year-old heifer, 1st for heifer calves and 1st for the herd.

**The Advantages of an Independent Agricultural Journal.**

When an organ commits itself to a boom its readers have to pay the penalty. The agricultural papers of this province, organs of government farming, have committed themselves to a live-stock boom, and now that the government has proved logically and experimentally to its own satisfaction, that all breeds must go except Shorthorns for grading up for beef, our natives being most profitable for our dairying industry, the readers of these organs are kept in the dark with reference to these facts.

The agricultural satellites of the government are looked upon as the only source of inspiration in scientific farming, scientific stock-feeding and breeding, etc., as well as in the practical good which it is supposed to be accomplishing. If the government were right in declaring that all these breeds should come, why is it wrong in now declaring that they shall go? When the recent mammoth importation of the government first trod upon our shores, the fact was trumpeted throughout the length and breadth of our land; now all must be still except the gentle hush that prevents the sound of the departing tread from reaching our ears. There are two ways of getting out of this dilemma: (1) Let importations continue in order, that farmers may be able to purchase cheaper stock; and (2) let future im-

portations be made in order to prove practically to the students of the Agricultural College how much inferior foreign stock is to our own, instead of attempting to prove its superiority, as heretofore. But the government started out with the theory that their importations were justifiable on the ground that poor farmers could get cheap stock; it has now accomplished the object desired, so what is the use of complaining?

The position occupied by the *ADVOCATE* is unassailable. We have not committed ourselves to the various live-stock booms, but expressed our willingness to bring forward any breed that could be proved by honest records to be the best. Such records have not been forthcoming; the boom system of making certain breeds appear the best still prevails; but we rejoice to see that a re-action is about to take place.

**Increasing Lean Meat in Pigs.**

We may well suppose that the habit of the pig in laying on an excessive quantity of fat has been caused by long and excessive feeding of fat-producing food, and it is not likely that any sudden transformation could be brought about; but it is well known that the pigs of different countries differ in respect to fat, says the "National Live Stock Journal." We have only to contrast fattened pigs of this country with those in Canada. There pork is fattened partly upon barley, but largely upon peas, a highly nitrogenous food, yielding a large proportion of muscle, and our pigs are fattened almost wholly upon corn, an excessively starchy and fattening food. The Canadian pork has a much larger proportion of lean meat and less lard. The difference is very marked, so much so that in a market supplied with both kinds, purchasers easily select the one or the other as desired. Wild hogs do not have such excess of fat, and the southern hog, which is grown much slower than those in the northern and western States, and fed on much less corn, is comparatively lean. There can, therefore, be little doubt that the habit of depositing this excess of fat is caused by long continued feeding adapted to that end. The hog is naturally a grass and root eating animal, and so its domestication is fed almost wholly upon concentrated food. Hogs fed upon skimmed milk have a less proportion of fat than those fed upon corn. If young pigs are kept upon food that will grow the muscles and bones and develop a rangy frame, they will possess so much muscle when half-grown that a moderate length of time in fattening, even on corn, will not pile on an excessive amount of fat.

The Chicago Live Stock Journal says: The fact that in 1880, when our cheese export reached its highest point, amounting to, in round numbers, 148,000,000 lbs., that of Canada was only a trifle over 40,000,000 lbs., and that, whereas ours is now only 113,000,000, Canada's is 70,000,000, and has never fluctuated, should arrest the attention of our American dairymen, and secure some investigation into the cause of this difference.

During the first three months of the present year 10,000 barrels of eggs (1,066,595 dozen) were imported from Europe into this country, from which it would seem that the American hen is not doing her entire duty.

## Garden and Orchard.

## A Useful and Ornamental Tree.

Herewith we give an illustration of the *Catalpa speciosa*, commonly known as the Hardy Catalpa, which has lately been introduced into this Province. It being a native of the Western States, flourishing especially on the river bottoms of Indiana, Illinois, Missouri and the more southerly States, we have been shy in recommending it; but now that it has been sufficiently tested in different parts of the Province, nearly all who have tried it speaking highly in its favor, we can now recommend it with considerable confidence.

Mr. W. Saunders, President of the Fruit Growers' Association, has quite a number growing on his experiment grounds in this city, and the accompanying illustration is a sketch by our special artist from one of the oldest Catalpas on these grounds. In his annual address to the Association, Mr. Saunders speaks of the Hardy Catalpa in the following language:—

"While on this subject of distribution, it is fitting that I should call the attention of the members to the selection which has been made for this purpose for next year. One of the things offered is the hardy western Catalpa, *Catalpa speciosa*, a handsome tree with large soft foliage, and bearing fine clusters of beautiful flowers early in the summer, succeeded by very long and curious pod-like seed vessels. This tree has been planted very extensively in the Western States, both as wind-breaks and for economic purposes, and being a rapid grower and very hardy, it has endured severe vicissitudes of climate and given remarkable satisfaction. The durability of the wood makes it very valuable for fence posts and for furniture. As an ornamental tree it has few equals; it has, as far as I know, proved hardy wherever it has been tried in Ontario, and deserves to be better known throughout the length and breadth of our Province."

There are other species of the Catalpa which are not hardy enough for our climate, having been tried and proved a failure. In order that our readers may not be imposed upon by unscrupulous agents, we give the unsuitable species, viz., *Catalpa bignonioides*, *C. cordifolia*, and *C. syriaca*. Some of these are said to flourish in certain sections of the Province, but we cannot yet recommend any of them.

The *C. speciosa* is a very rapid grower; the tree from which the accompanying illustration has been taken is only four years old, and yet its diameter at the base is nearly four inches, and its height is over twelve feet. The seed pods, represented in larger size at the right side of the cut, are about twelve inches long, but sometimes grow double this length. They resemble bean pods, but are nearly round, instead

of flat. The leaf, represented on the left of the cut, presents a peculiarity not found in any other tree. Leaves of the same tree are of various shapes and sizes, and it is questionable if the one illustrated is a representative specimen, although many, especially those of medium size, have the shape represented. The smaller leaves, and many of the larger ones, usually have no prominences on the sides; some have two or three prominent points on one or both sides, many are pointed only on one side, while still others are indented in some places; but all have a prominent point at the apex.

The wood of the tree is light, but very strong and durable. It is chiefly used for bridge timbers, railway ties, fence posts and shingles. Being easily worked, it is a valuable wood for furniture. For railroad ties it has been known to outlive two sets of white oak ties.



CATALPA SPECIOSA.

It thrives best on bottom lands and in light sandy soil, but it easily accommodates itself to a great variety of soils, and if planted in a sheltered location, so much the better.

It may be propagated from cuttings and layers, but more successfully from the seed. The pods may be gathered any time in fall or spring, and the seed planted in May, or as soon as the weather gets warm. Stretch a line along the ground, open a light furrow with the hoe, and cover the seed one-fourth to one-half of an inch deep. Place the rows twenty inches apart, and drop in 25 or 30 seeds to every foot in the row. In weeding, endeavor to prevent breaking the plants, for they are tender when

young. In setting out a grove or plantation, place the plants in rows four feet apart each way. If the plants are cut back the first year either by the knife or by the frost, they will make a more vigorous growth. See premium list.

## Mulching.

BY W. W. HILBORN.

The small fruit crop for next year very largely depends on how well the plants are protected during winter and early spring. It is not the severe freezing that injures the plants so much as the thawing out so rapidly, and the oft-repeated freezing and thawing. By whatever means we can most effectually prevent these sudden changes from cold to heat, is what we should act upon.

Strawberries should be mulched as soon as the ground freezes sufficiently to hold up horses and wagon when driving on with the straw. There is not the danger of smothering the plants when ground is thus frozen. Wheat straw is best where it can be obtained; oat straw packs down too closely, and does not admit air enough to either soil or plants.

Most of the straw should be placed between the rows, and just enough over the plants to nearly cover the leaves from sight. When growth begins in spring, draw the covering to the centre between the rows, and leave it there until after the fruit has been gathered; it thus serves the double purpose of keeping the fruit clean, and causes the soil to hold the moisture gathered early in the season, which is all important to the production of a large crop of fruit.

All raspberries, currants, blackberries and other small fruits that have been planted this fall should have a small mound of earth drawn up around each plant before the ground freezes, and leveled down again in spring.

Grape vines can be drawn down to the earth and held there by a stone or other most convenient material. Some

practice covering with earth, but there is danger of uncovering too soon or not soon enough in spring. They are more tender when thus covered, and should a severe frost occur after uncovering, they are more apt to be injured than if not covered.

## Keeping Vegetables.

We observe that some writers on vegetable gardening speak of the difficulty of keeping succulent vegetables, like beets, turnips and parsnips, from wilting when placed in cellars, and recommend packing them in sand, or burying them in the earth of the cellar bottom. This mode is necessarily cumbersome and in-

convenient. An easier and more perfect way is to pack them in damp sawdust, placed in barrels of moderate size, or in boxes of not more than two feet in width. Place a layer of sawdust in the bottom, then a layer of the roots, then fill in all the interstices with another layer, and so on till the box is full, leaving no crevices. We have taken beets out of such boxes after remaining in them a full year, so fresh in appearance that no external difference could be seen between them and fresh roots. Nurserymen's moss is neater than sawdust where it can be had, and serves an excellent purpose for packing winter cabbage in large boxes.—[Country Gentleman.

#### Suggestions for Amateur Fruit Growers.

BY L. WOOLVERTON, GRIMSEY, ONT.  
No. 2.

##### Raspberries.

The area of Canadian territory adapted by conditions of soil and climate to the growth of the raspberry is only a little less extensive than that which is adapted to the strawberry. From reports collected by Mr. Chas. E. Brown, of Yarmouth, it is evident that raspberries are grown abundantly in Nova Scotia. A correspondent in the North-west, on the line of the C. P. R., writes that with careful protection he has safely wintered several varieties of red and black raspberries, and hopes for fruit. In the Ottawa region they may be grown if protected in winter, although Mr. Wright, of Renfrew, says he has not yet decided upon any variety which he can specially recommend for culture there, except Saunders' Seedling No. 60, which he finds to be remarkably hardy.

With regard to the vicinity of Lakes Ontario and Erie, and indeed the whole of southwestern Ontario, it is almost a superfluous statement to make that raspberries may be grown with the greatest success. Their culture, however, at least for the market, has received a considerable discouragement during the past season owing to the very low prices; for instance, the Toronto market price dropped to six cents per quart for nearly a whole week during the very height of the season, a price which leaves very little profit to the grower after deducting expenses.

The kinds mentioned below are those only which have been found profitable for market, or desirable for home use, and are mentioned in the order of ripening.

The *Highland Hardy* is the first in the order of ripening. I made the first shipment on the 15th of July. The bush is not a strong grower, and the berry is rather small, but being first in the market it brings the highest price of the season. Its competitor, the *Hansell*, is not equal to it.

The *Brandywine* succeeds the above, ripening about the 20th of July on the south shore of Lake Ontario, and some seasons earlier. Its bright color gives it a very attractive appearance, and its firm texture renders it a very suitable berry to ship to a distant market. For home use, however, it is rather too dry and seedy, and is surpassed by the *Naomi*, which ripens at the same time.

The *Turner* is a fine bearer, and sufficiently hardy for some of the colder sections of Onta-

rio. The berry is a little larger than the *Brandywine*, but not firm enough for shipping very long distances. The flavor excels that of any raspberry of its season, and its seeds are so soft that they seem to melt in the mouth, which characteristics make it one of the most desirable kinds for home use.

The *Clarke* deserves also a prominent place, for it is larger than any of the above mentioned, often rivaling the famous *Cuthbert* in size, which it precedes about a week. It is also very productive. Much caution is needed in growing this variety to keep down the suckers, which if neglected will spring up in great abundance and rob the parent bushes of their vigor.

The *Cuthbert* ripens in Southern Ontario about the 1st of August, and its main crop comes in just when the height of the wild raspberry season is over, which is a great point in its favor. It has well deserved its appellation, the "Queen of the Market," combining in itself two important characteristics usually separated, viz., size and productiveness. The bush is very vigorous in growth, but not as hardy as some other kinds. Mr. Robinson, of Owen Sound, says it is sometimes winter killed there, and thinks it cannot be depended upon where the thermometer touches thirty degrees below zero. The color of the fruit is rather dark, and if a rival were to appear having the good qualities of the *Cuthbert*, and a brighter color, it would carry the palm. Possibly the *Marlboro* may be the coming berry to displace the *Cuthbert*.

Those wishing a white or yellow raspberry for the table cannot do better than to plant the *Brinckle's Orange*. The *Caroline* may be a better bearer, but is very inferior in flavor.

Among the black-cap varieties, we think it only necessary to mention three kinds, viz., the *Souhegan*, commendable on account of its earliness, and also for its productiveness; the *Mammoth Cluster*, which is the largest Black-cap known, is suitable to almost any soil, and ripens about ten days later than the *Souhegan*, or about the middle of July in Southern Ontario; and the *Gregg*, a comparatively new and a very popular variety, which is still about ten days later than the *Mammoth Cluster*.

On favorable soils the *Gregg* is the most profitable black-cap grown, but on heavy soils it does not succeed as well as the *Mammoth Cluster*. It is also said not to be quite as hardy as the other varieties, still it is successfully grown as far north as *Barrie*, and even at *Renfrew*, Mr. Wright says he has succeeded fairly well with it by keeping it well pinched back and grown low, so as to be easily protected from the cold in winter.

And just here one remark upon soil may be in place, viz., that the red varieties will generally be found to succeed best on soil inclining to be heavy but not too stiff; while the black-caps prefer a light soil, which is not too dry.

As to the prospective market for the raspberry, we have to say, as with the strawberry, the nearer home the crop can be disposed of, the better. During the height of the season the large cities are glutted, and the surplus is shipped to small towns throughout the country, where the price often averages higher than in the City of Toronto. The very early and the very late kinds are the only ones that should

be sent into the large centres; the main crop should be sold as far as possible in the small towns and villages, or country places nearest home. Thus will the largest quantity of this delicious fruit be disposed of, the largest number of our Canadian people share in the luxury of its consumption, and the largest remuneration accrue to the industrious cultivator.

I desire to inform you how I have preserved apples and have kept them fresh and fair for eighteen to twenty months, says a correspondent of the *American Cultivator*. The system is worthy the experiment of fruit growers in every section. I take the apples ripe and fresh from the trees, at this season of the year, and cover them up with dry, fine coal ashes, to a depth of fourteen to eighteen inches. I have apples that have passed two Winters thus preserved, out of doors, exposed to rain and frost, and yet the fruit came out fresh and fair. How much longer the apples would keep under these circumstances I do not know. Possibly pears, eggs, and some other perishable articles, might be kept by this simple and inexpensive process much longer than under present methods. There is no patent on this suggestion, and its simplicity and light cost should induce the experimenting of those who desire to keep fruit for long periods.

There are some instances in which rust spores prove beneficial. One variety known as *Puccinia suarvalem* attacks the Canada thistle, the brown spores clustering themselves on the under surface of the leaves; it is a voracious feeder, and, according to investigations made by Prof. Arthur of the New York Experiment Station, materially weakens the plant, and prevents it from seeding. This form of rust attacks no other plant, and may therefore be cultivated with impunity. But what of all this! If the Canada thistle once becomes effectually exterminated it may then be discovered to be one of our most useful plants; and like our forests, measures may be taken for its restoration.

Some butter-makers who have cows that give a large flow of milk, but a small percentage of butter, make a practice of selling them to cheesemakers, the milk being supposed to be rich in curd. With reference to this practice Prof. Arnold says: It will make no difference with his cheese whether the milk was skimmed artificially or born skimmed, both having the same characteristic quality of being rich in curd and poor in fat. A skim cheese is counted poor food simply because it has too much cheesy matter for the butter it contains—rich in curd and poor in fat—a liberal share of butter being rightfully considered essential to good cheese. There is a wide difference between a cheese having twice as much fat as curd and one which contains twice as much curd as fat. A fool can distinguish the difference between them. Deliver me from cheese rich in curd and poor in fat. I have seen too much of it and I earnestly advise cheesemakers who desire to make palatable and wholesome cheese and to do unto others as they would have others do unto them, never to buy cows giving milk too poor to make butter from. They had better buy those giving milk of opposite quality.

### The Dairy.

#### The Creamery as we Find it.

BY M. MOYER.

The creamery, like all other things, has its advantages and disadvantages. It seems that, although its great advantages are acknowledged, there are special efforts made to point out its weaknesses. Why is this the case with this particular business, when more or less of the same irregularity exists in all other industries, and which are allowed to go on without a word? The reason is simply because what seems unjust is seen a little plainer than in some other lines. When the butter business of our country was so ruined that our butter was no more entitled to the name of butter, but was designated as grease, the creamery stepped in, and during only a few years of her existence, her product sells for almost twice the price of butter made in the old style. The creamery has not only done this, but she has done her good work in waking up the people to a sense of making better butter, so that the education butter makers received through the creamery is marked all over the country.

The creamery, only a few years in existence, has accomplished wonders, and the men who have had pluck enough to grapple with this industry when it was in a hopeless condition, have back bone and nerve enough to bear the little buffeting, and press on more vigorously, until all the little difficulties are overcome, and the business made a success, and our butter raised to a standard attained by few countries in the world.

One of the principal obstacles thrown in our way is the fact that cream is not all of the same value, and thus buying it by measure will not be doing justice to all the patrons. While we acknowledge that there is a slight difference, we maintain that the same injustice exists in cheese making. We know that some milk is so rich in casein that it takes only 7 pounds to make a pound of cheese, and some so poor that it takes as much as 15 pounds. Here the difference is greater than was ever found in cream, and yet our cheese business prospers. There is no business in this world, whether carried on co-operatively or otherwise, where perfect justice prevails. One man is lazy and neglects his farm, another one is industrious and improves his farm. The assessor comes and assesses the one for \$2,000 and the other for \$4,000, and the collector asks twice the amount of taxes for the one as he does for the other. The industrious one has to pay so much more because his neighbor is negligent. If it is right that I have to pay more taxes because my neighbor is lazy and shiftless, it certainly is fully as right if I don't get quite as much for my cream, because he has the misfortune of not having quite as good butter cows as I have.

Because our butter market was spoiled through poor butter makers, those who make good butter will also have to take less. Because some don't pay for the clothes they wear others have to pay more than they are worth. Because one man lives in a small school section he has to pay twice as much to educate the rising generation as another who lives in a larger and more wealthy one. Why don't we

close our schools and stop buying clothes because there is an injustice in the system? Any reasonable man will say, with all this, what is in reality unfair, it is the best we can do.

With all the influences causing changes and variations in the quantity of milk from the cow, the yield of cream from the milk, the solidity or porosity of the cream, I am satisfied through experience that what seems in some extreme cases as a great injustice, amounts to very little in a whole season. Tests for individual cows' cream sometimes show quite a difference, but taking the herds as we find them on our farms, and the difference is very trifling, providing the milk to raise the cream is set submerged in water and the skimming done properly. Milk set in vessels when the cream is exposed to the air will be affected by the weather. The drying influence of the air not always being the same, will cause it sometimes to be more solid, and consequently it will take less quantity to make a pound of butter, but the cream being raised in cans under water, the effects of the air are excluded, and the cream of more equal value.

So far as I know, every creamery in Ontario uses submerged cans except the Government creamery, and as far so I know, that is the only one that requires coloring for the butter. Before that institution was brought into existence, our creamery butter had gained a very fair reputation on its merits without coloring, and if it becomes necessary for them to color, it must be owing to the way they raise the cream, for in all other respects they follow our system. It is true that good butter can be made from cream raised in open vessels, if the place in which they are kept is perfectly clean, but any one who has had any experience in dairying knows the great difficulty we have in getting the cream free from impurities. If three-fourths of the patrons of a creamery would keep everything clean and one-fourth would send their cream which has been absorbing the bad odors of a dirty place, the whole butter would be injured. The submerged process, which excludes all outside influences, overcomes to a great extent the difficulties of impurities through bad odors, dust, flies, etc. Milk from a healthy cow is pure and nutritious, but contains the germs of decay, and when exposed to the air will absorb the germs of fermentation. Where would our creamery butter go to if we would adopted open setting? Some cream would no doubt come right enough, but some would come with dead flies partly decomposed, dust, flavor from the barn yard, or laden with the germs of disease, which all the coloring in the world would not hide.

Even one of those lights who is paid with our money to lead us in dairying, talks of poisonous animal odor in milk, and that milk must be aired to take it out. Could anything be more absurd, when really milk is intended by nature to pass from the mother into the stomach of the offspring without ever coming in contact with air? All these things are doing no good, but are hindrances to the business. We want more willing workers, aiming to overcome real, not imaginary difficulties, and to succeed. Simple, plain, practical, every day suggestions how best to manage and make the most money out of our cows, is what is wanted. What do the farmers

care, or what good will it do, if they did know how much phosphoric acid or potash milk contains, or whether the butter globules are round or square? It was said that the object of the government creamery was to assist us in popularizing the creamery in the country, but lo! and behold! when I wrote for some information I received a very impertinent reply refusing to answer any questions. Equally as much was I astonished when I saw the two Professors at the Toronto Exhibition advertising, at our expense, the centrifugal machine. The machine does its work right enough, but does any practical man who understands the circumstances of our farmers, for one moment believe that it could be advantageously used in our country where farmers keep only from 3 to 15 cows? What, therefore, can have been the object of making an exhibit there? Was it for curiosity or to show the skill and ability on the part of the Professors in operating such wonderful machines? It certainly did the creamery business, which they are pretending, at very great expense, to introduce into the country, no good. If they had a practical milk setting arrangement there, and showed how best to separate the cream from the milk, they might have done some good, but that was too simple; they must have something to lead the farmer to think that it requires a collegiate course to make as good farmers as they are. Instead of saying, for instance, that an "egg" is an egg, they would say that an egg is a cell consisting essentially of a globule of protoplasm enveloping a nucleus, the germinal vesicle, and with one or more nucleoli, the germinal spots in the interior of the nucleus. In spite of all, the advantages of the creamery are so great that, through the generous co-operation of the farmers, with willing workers, the business will prosper.

[The writer of the above article evidently hits at the ADVOCATE in his remarks about the injustice done by the creamery to progressive farmers. It is true that we have been severe on this form of injustice, and we are willing to take as much as we give—or more, if we deserve it; but nobody can read the columns of the ADVOCATE and then deny that we are aggressive in all forms of injustice which fall within the domain of agriculture. Nobody can studiously peruse this issue without being convinced of this fact. But Mr. Moyer overlooks one important feature. There are ills and ills; those we have, we shall, in all likelihood, continue to bear; but that is no reason why we should court further ills. If we have been severer on creamery ills than on many other forms, it is because farmers have burdens enough already—more, in fact, than their shoulders are able to bear.—ED.]

Prof. Kedzie says that a mixture of thoroughly skimmed milk and brine makes a durable, cheap, water-proof varnish for roofs and out-buildings, and renders them incombustible.

Now count the quantity of your stock and your fodder, and if you have too much stock sell some of it, and if you have a surplus of feed, buy more stock. Last winter's experience in this respect was a bitter one in many parts of the country.

### A Redeeming Feature in Private Dairying.

The freshest boom in dairying is the attempts made to wrest the business out of the hands of the farmer's wife and place it into the hands of corporations. We profess to be a firm friend of the farmer's wife, and anything pertaining to her interests shall assuredly receive our profoundest consideration. While we would be the first to revolt at the thought of her being enlaved by exhausting household duties, yet, if she is anxious to keep her family around her by providing profitable and respectable work for them, we shall always feel it our duty to give her the choicest counsel.

It is true that we have raised our voice against the existing condition of family butter-making, not because we believed it to be wrong in principle—for we are the especial friend of individuals, not of corporations—but because of the disgrace brought upon our butter trade as handled by our storekeepers. We have also pointed out the objectionable features of co-operation, by which system we cannot attain the highest standard in the quality of our butter, and then the injustice meted out to those patrons who desire to improve acts as an obstruction to self-encouragement. We have therefore shown how the private system could be advantageously enlarged, although we have not neglected to present the best plans for carrying out the co-operative system, for the benefit of those farmers who have taken a pronounced stand in its favor.

There is yet another phase of the home system, which we have not had space to consider until now. In most sections of the Province there are handlers who drive around amongst the farmers and purchase their butter and other products for cash. Many of these are honorable men, and have considerable experience in dairy matters. For the purpose of obtaining the most reliable facts, we interviewed a gentleman in this city who has had long experience in the business, and is quite an expert in judging butter. The following is his evidence:

"I purchase butter from farmers all over the county of Middlesex, and sometimes go into the surrounding counties. I was engaged in the butter trade in England before I came to Canada. I have a large number of special customers in this city to whom I sell only the very best butter. I have also a large number of transient and special customers who take medium quality. I never buy inferior stuff from the farmers under any circumstances, although I handle a good deal of it which the storekeepers beg me to relieve them of. This is not fit for lard, so the best I can do is to sell it to confectioners, who use it in the manufacture of candies. Here is a specimen tub of it which I will let you have for seven cents a pound. I can get any quantity of it from the storekeepers for one or two cents a pound less than they pay for it in goods. From the farmers I only buy medium to first class quality, for which I pay 14 to 18 cents at present. I always pay cash, and invariably regulate my price according to the quality of my butter. I have a large number of customers who are too dainty to use creamery butter, and I can supply them with a far better quality from certain farmers' wives whose names I can give you. I wish I could get more of such butter; I would buy it by the ton. I sometimes ship to England when our markets are glutted. I pay about two cents a pound for it more than I would pay for the best creamery butter. I handled a good deal of the creamery article last year, but have given it up. I don't judge

butter by the taste alone; I go to the fields of my best butter-makers, examine the herds, the herbage, the flavoring weeds, and the water, and I pay attention to how the cows are kept in winter. I badly snub those breeders who think that breed has anything to do with quality. Many districts are unsuited to butter-making. I don't go near them, for good butter can never be made under unfavorable conditions. Unfortunately, however, there is a large number of bad butter-makers in the best districts where all the conditions are favorable. Many parties don't know how and won't learn—that's all. I used to try to teach some people; but the worse the butter they made, the more they thought they knew how, so I gave up playing the pedagogue. But they got the inside track in spite of me. When they found that their neighbors got several cents a pound more for their butter, they soon learned; but how I can't say, and I don't believe they know themselves. It seemed to come to them somehow by talking with the neighbors—just as they learned to speak their mother tongue. There seems to be more unity amongst those neighbors now. The women are more strongly united than their husbands. High prices for good butter is the most contagious microbe you ever saw."

These are facts which every farmer should consult his wife about before he invests her butter earnings in a creamery. What we have been advocating with special emphasis is that such first-class butter-makers extend their operations. If they can sell their butter by the ton, why not make tons of it? Let them gradually seed down more land to permanent pastures, and go into winter dairying more extensively. In a few years let them increase their herd of five or six cows to fifty or sixty. A cream separator will pay with 20 or 30 cows. They need not go in search of markets; the markets will come to them. It stands to reason that a farmer's wife with good common-sense, aided by experience and good dairy literature, can make better butter than a creameryman. She can command uniformly good conditions, while he, like the storekeeper, is at the mercy of the most miserable wretch amongst his customers. This is nature's system of encouragement; it is improvement by natural selection, and requires neither booms nor Government interference to prevent it from getting on the lift.

It is a remarkable case that it is impossible to get a good cheese in the State of New York: at least this is said to be so by a noted expert in dairy matters, says the N. Y. Times. At the same time there are tons of the best cheese to be had in Canada. This is a serious affair for the New York dairymen. A dozen years ago the oleomargarine fraud was begun by a New York factoryman, and the fashion of adulteration became prevalent. A few years later the lard cheese business was introduced, and that, too, prevailed so much that the reputation of American cheese suffered very much in the foreign markets. Now what other road to ruin has been found by the dairy interest? The discredit of our cheese has become so general that the dealers find it to be irksome to bear, and they have appointed a committee to look into the affair and try to remove the bad impression and its effects upon the market. The report of the committee, recently published, appeared on its face to be something like a certificate of good character, but it seems the accused culprit is guilty nevertheless; for on inquiry for some really good cheese in a New York factory, the noted expert above referred to, states it is not to be found.

### The Apiary.

#### Our Honey Market.

BY G. B. JONES.

Next to its production, the sale of our honey is the important consideration. Our market must be established by our own efforts, and it rests with ourselves to make it good or poor. There is only one way to create a demand for our produce, and this consists in making it attractive to the eye, pleasant to the taste, wholesome, and undoubted as to its purity and genuine quality.

Just how our honey shall be made attractive to the eye must, of course, be decided individually by each of us in accordance with his own taste and ideas; but a few leading hints may be of service to some beginners. For instance: Honey packed in tins without labels or with very small ones, especially if the tins and labels are dirty or dull, will scarcely attract, when we consider their resemblance to paint, tar, fly poison, lye and axle-grease packages; nor would our "mouths water" with the thought of delicious sweetness at the sight of tins wrapped in flashy colored paper such as we see about stove-polish, baking powder, etc., or even lobster and salmon cans. On the contrary, we would at once be turned against it. Whether honey be packed in glass or tin, it should have a label peculiar to itself; one which, if possible, will bespeak at sight the richness and purity of the goods themselves. The labels for glass packages should be small, as no label can be made to look as nice as the honey itself; but those for tin vessels should be large enough to hide the tin from view, for after this tin has been exposed a while, it becomes dull or rusted, and spoils the appearance of the whole package.

For small quantities I consider glass by far the most suitable package. The smaller or sample sizes may consist of a variety of shapes and designs; but from one pint to two quarts the established "Gem" and "Crown" jars are the most convenient, mainly because they can be used for so many purposes after the honey is out of them. The best vessels for large quantities of honey are the square varnish cans holding 1½ gallons, or 15 pounds; 2½ gallons, or 30 pounds, and 5 gallons, or 60 pounds.

To make honey pleasant to the taste it must be well ripened (as directed in "Extracted Honey," July number). Each variety must be separate, and have its own distinctive flavor retained. It must be clear and clean. This will also make it wholesome.

As a mark of its purity, the producer's name should appear prominently upon the label. When the producer is sufficiently well known, this alone is a warrant for the reliability of the honey he sells, and much is already accomplished towards the establishing of his market; but when he is not well known he has much to contend with in these days of adulteration and unfounded suspicion. He should sell his honey only to those who know him, and to grocers who are considered thoroughly reliable, and whose word is sufficient to sell what they recommend. His chief effort should be to sell to those whom he knows are competent judges.

A very important point in working up and holding a market consists in the uniformity of

package and label used. Having once adopted any special package and label, it is best to continue it persistently. Consumers soon become accustomed to it, and will recognize it as "So-and-so's" honey without reading the name, and having bought a package of it, will, if pleased with it, come for another of the same.

Our first attention should be paid to the home and local markets. Let us sell all we can near home, and there only, till we can sell no more; and then let us gradually extend our limits until we begin to ship to remote, and lastly, to foreign markets. Only by beginning at home shall we make a success of it. Home and local markets always pay the best.

*Never force honey upon the market too soon.* As long as there are small fruits, cheap, or plenty of apples, people don't want honey, and will only buy it at ruinous prices. Wait till small fruit is gone and apples are dear, and people are tired of fruit any way, and don't want to open their preserves "just yet," and your time has come to offer them a change in the shape of some delicious honey; and see if they don't "jump at it" and pay a good price.

Marketing section honey, next month.

#### Protein-rich Food for Pigs—Three Strong Reasons for its Use.

Professor J. W. Sanborn reports that feed richer in protein makes more lean meat and less fat, writes Dr. Caldwell to the N. Y. Tribune. One lot of three pigs was fed four months on Indian meal containing 10.4 per cent. of protein, and another lot for about 4 months on shipstuff (shorts), with 16 per cent. of protein, and for the remaining month of the period on shipstuff with the addition of about one-third its weight of dried blood, containing 70.9 per cent. of protein. When the pigs were killed, in December, rib-roasts from the carcasses of two pigs of each lot were examined as to the proportion of fat on them, such as is usually removed with the knife. In every instance more fat was found on the ribs from the corn-fed pigs; the percentages of this fat were 63.2 and 59, and of the lean meat, 31.6 and 29.5. On the roasts from the two pigs fed on shipstuff and dried blood, the percentages of fat were 55.5 and 50, and of lean meat 40 and 42.3. The hams of the remaining pig of each lot were examined in the same way with the following result: Percentage of fat in the case of the corn-fed pig, 33.1, and of lean meat, 55.9; on the ham of the shipstuff-fed pig, 22.6 of fat, and 68.4 of lean meat. The bone made up the rest of the percentage in all cases. Further, the proportion of fat within the fibres of the lean meat of the rib-roast was found to be in the case of one of the corn-fed pigs, 53 per cent. against 10 per cent. in the meat of its companion, fed on shipstuff and dried blood. Put these interesting results together with Professor Sanborn's observations, extending over seven years, that 100 lbs. of shipstuff will go as far as 108 lbs. of corn meal in respect to economy in production of increase in weight, and with the well established fact that feed richer in protein makes richer manure, and we have in the whole summing up a strong argument for the use of more protein-rich food for pigs.

Now for the formation of a compost heap. Rake up all the useless rubbish and convert it into a valuable fertilizer.

#### PRIZE ESSAY.

#### The Advantages and Disadvantages of the Proposed Model Farm for the Dominion.

BY J. S. PEARCE, LONDON, ONT.

The advantages of an experimental and model farm for the Dominion would be many and of very great value if conducted so as to be applicable to the ordinary or average farmer. By the ordinary farmer I mean those who are not at all posted in the scientific and technical names as applied to farming, and who do not put much faith in scientific farming. To be of real benefit the aim of this institution should be to draw out and excite the interest and attention of these ordinary farmers, and try and get them to take more interest in testing and experimenting for themselves; for every good and successful farmer is continually testing and experimenting, and he who notes these tests and experiments the closest and has the brains to carry out the results on a larger scale, is the successful farmer.

The success of this model farm would depend entirely upon the way in which it was conducted. It would have to be honestly conducted by thoroughly honest, reliable and competent men—men who have more practical knowledge than scientific; for only by the practical can the ordinary farmer be reached, and they are the class that should be aimed at. It should be more of an experimental station than anything else, to show by actual working what can be done, and impart all the information possible to the farmers, and impress upon them the advantages of better farming and a close and careful study of their profession, for I claim that farming is just as much a profession as law or medicine, and if there was any way of inducing farmers to know something of the rudiments and principles of agriculture, there would soon be an improvement both in the farms and farming of this country.

Among the advantages would be the careful testing and showing the proper and improper modes of working different soils for certain crops, thereby showing the advantage of a proper management of the various soils, and the loss the country sustains annually from improper management. Then would come the application of manures and fertilizers on different soils and for the different crops, and by these means demonstrate and teach their value when properly applied for, in my opinion, the proper treatment and application of manures is a most important factor in successful farming.

Another very important adjunct to good farming is the management of green crops such as clover, etc., for manure, and bringing up the fertility of the soil to a standard that will pay the owner well for his labor and seed. There is ample room for improvement and educating our farmers in this department, and a model farm could do much good in this line alone.

The managers of this model farm should also watch very closely the various commercial fertilizers that are put upon the market by manufacturers and dealers, and be in a position to report upon their merits or demerits and boldly expose any impositions or frauds that may be perpetrated upon the unsuspecting and unskilled farmers. To my mind commercial fer-

tilizers will, before many years, become an important part of the requirements of every good farmer. The impositions in the shape of commercial fertilizers that have been thrust upon the American farmer by unprincipled dealers have been many and glaring.

Perhaps the most important advantage would be the testing and disseminating of seeds, plants, trees, etc. Too much importance and attention could not be given to this department. It should have the entire attention of a thoroughly competent man, with full power to employ any assistance he may require, with all the necessary material and appliances at his command. The value of the information that could be given to the country from this department alone, if carefully conducted, would be worth tens of thousands of dollars each year. There is not sufficient importance attached to the quality of seed sown by farmers, nor are the mass of farmers aware of the advantage of a change of seed even if procured only a few miles distant.

There should also be a distribution of a portion of the seeds under test to each of the Provinces to be carefully tested in the different Provinces; in this way only could it be made a Dominion affair, for in many cases what would do well in the locality of this model farm, would not answer at all in some of the other Provinces of the Dominion. In fact, this department should be in a position to supply small samples of seed to one or two reliable individuals in each county upon the distinct understanding that they report the result to the department, for I do not see how a Dominion experimental station can be made such unless it can put itself in the position to say what will answer and what will not answer in each of the Provinces of the Dominion? Unless this can be done the affair becomes at once a local or Provincial institution.

I have now considered a few of the most important advantages to be derived from this farm and will now review some of the disadvantages, and we shall see whether the government would be justified in spending the people's money in this way.

The first consideration is, Do we need such an institution? A very large number of the readers of the *ADVOCATE* will say with me that we do not for various reasons. In the first place we already have one for this Province, and they all know what the results from this "Model Farm" have been. Then, we cannot see how a Dominion model farm can be made to do duty for each and every Province, for we all know that the climate, temperature, soil and variety of crops grown in each are widely different, and even when the same cereal is grown the variety of seed used is very different. How are they going to locate a farm that will do duty for each of the Provinces? Looking at a map of the Dominion, the central point would be somewhere up on Lake Superior. Supposing the farm was located in the northern part of Ontario, that locality would not answer to test the various products that are grown in British Columbia, Manitoba or Nova Scotia.

Another very grave difficulty would be to have the officers and servants of the institution free and independent of politics. How this can be done would test the ingenuity of the

Minister of Agriculture. I will say no more on this head, as it would savor too much of politics.

Then, again, the government would of necessity become a vendor of the products of the farm in some way or other, and this would interfere with the legitimate trade and calling of the dealers in these products, and we all know that there are numbers of first-class business men who are working hard in the way of testing and bringing out new and valuable varieties of farm products and stock as well. This is an important point, and, to my mind, is one which of itself should condemn such an institution from an impartial and business standpoint.

Another very grave objection would be the fact that the remote Provinces are too far away to take an active interest in the workings of this institution, and unless all the Provinces could be induced to take an active part and interest in its working, then its usefulness as a Dominion concern is lost. To be a success there would have to be a sub-station in each Province, and this would entail an enormous expense, and also make the working and details very complicated.

It is very plain to me that before all these elaborate and complicated tests and experiments, together with the scientific names which are usually used, can be made acceptable and can be comprehended by the ordinary farmer, the farmers will have to be educated up to understand and comprehend these technicalities, etc. Instead of laying a foundation and educating the people in the rudiments of agriculture and farming, it looks to me very much as though the government were trying to build up a superstructure without any foundation.

Now, to meet this difficulty it is clear to my mind that to make this thing successful they will have to start at the foundation. To do this it will be necessary to have a certain amount of agricultural education in the public schools. This education should consist not only of a certain amount of agricultural matter in the text books, but should also consist very largely of instructions from practical work and observation. To me it seems quite as necessary, if not more so, to cultivate and educate the tastes and habits of a child as the mind. The proportion of children attending our country schools who have an opportunity of knowing anything about the cultivation of trees, flowers or vegetables, is very small compared with the actual numbers who do attend. Now, if there was a small flower or vegetable plot with a few trees in every country school yard, and the teacher held responsible for its proper care and cultivation, would not such add very much to the interest and instruction of the children?

Viewing the question from these various standpoints, I will leave the matter in the hands of the readers of the *ADVOCATE* to judge whether the government would be justified in going on with the proposed model farm.

Some agricultural writers are advocating using bran to fertilize the land. They say it is equal to the superphosphates as a manure. No doubt of that, but we prefer to enrich some animal with it first, and then let it fertilize the land. This is getting a double benefit, and is better economy than buying either bran or the phosphates for manure. The meat made from it will pay for the bran, and then the manure obtained will be clear gain. This is most sensible and most profitable farming.

**Let Foreign Stock Alone.**

The enormous falling off in the importation of live stock since 1883 is a cheering result of the constant hammering given by honest and judicious breeders and the opposition of several leading agricultural journals against the indiscriminate importation of "fancy" stock to the great detriment of legitimate breeders and farmers, says a correspondent of the *N. Y. Tribune*. In May, '84, there were 4,126 cattle imported; in May, '85, only 932—and in May, '86, it is to be hoped, there will be 0. The falling off in sheep was from 757 to 43 in the same period. It is a great saving of good American gold which went to the fancy foreign breeders, and a large amount of greenbacks which passed into the capacious pockets of hippodrome speculators and boomers. It is a happy deliverance. We sheepkeepers are especially grateful. Our native sheep have been neglected and derided in favor of English breeds, and there are no sicker shepherds than those who have been trying for years to make the pampered foreign breeds fit our uncongenial climate and rougher surroundings.

**Quality of Beef—Food or Breed?**

The slaughtered animals at the American Fat-Stock Show have again raised this question as to the cause of the proportion of fat and lean in beef. Some say breed; and before the beef was displayed, report says, parties claimed that the Polled-Angus and Herefords would show the greatest tendency to lay on lean meat. But when the meat was displayed on plates, it did not appear that these breeds had the advantage in lean meat. These prize animals, as a rule, showed a great excess of fat, whether Short-horn, Polled-Angus, Hereford or grades.

There is no question that a due proportion of fat and lean, or marbled beef, is what the discriminating public want. But the difficult question is how to get it. Many have been quite confident in answering, "by breed. But when the prize animals of all the breeds are brought to the test and slaughtered, fat is found excessive in all. This would seem to decide the case against breed as the prime cause of it. The question is not without serious difficulties. Looked at philosophically, we should say that food must be the great agency in the constitution of the animal body, because every part of it is composed of food, and no growth whatever is produced without food. It would seem that if the feeder knew precisely what combination of food to give an animal, he might control the proportion of fat and lean in the body of the animal to some normal standard. This control must, of course, be within the limits of the normal conditions of animal life. When any element in the animal body is produced in great excess, it departs from the normal standard and sets up a diseased condition of the system. Great excess of fat is a diseased condition of the animal system, and that is the tendency of the present system of feeding.

Chemistry has informed us of the proportion of the various elements in the animal body, and also of the various elements in the food of our domestic animals. We know that the animal can not change these elements in its food, but merely has the power to appropriate the elements found in its food. In view of this, it would seem that the animal chemist

might be able to combine such elements in food as would lay on a due proportion of fat and lean. If the food contained a large proportion of albuminoids it might be expected to lay on a large proportion of lean flesh. And in view of this, it might be expected that the food said to have been given to the sweepstakes prize animal Kirklevington (pea meal, oil meal, turnips, etc.) would have produced a full proportion of lean meat, which was not the case, as he and Black Prince were the fattest two animals in the show. We are not sufficiently informed of the exact combination of food given these two animals, to wholly explain the reason for the result reached. But we have no doubt that the food produced the conditions of the carcass as found, and that the breed was very remotely concerned in the result.—[*National Live Stock Journal*.]

Farmers who are in the habit of using different kinds of absorbents for bedding for stock will do well to ponder over the following table showing the number of pounds of liquid which one hundred pounds of the named air-dried substances will hold without dripping when pressed into a box. The straw was cut into two-inch lengths. (Bear in mind that the liquids are as valuable as the solid excrements of animals):—

Fibrous Peat.....	658
Moss.....	409
Pea Straw.....	356
Rye Straw.....	304
Beech Leaves.....	241
Oak Leaves.....	241
Pine Needles.....	208
Loam.....	31
Sand.....	14

Some persons have learned that animals are not all alike in every respect, says the *Farm Journal*. They all have stomachs, but while they are all after the same plan, they do not work alike. This fact accounts for one calf getting the scours, while the rest may do well on the same feed. One calf will constipate and bloat and have spasms—stiffness of the legs, and perhaps fall down, while others will be all right. The farmer is the only one to study and find out their peculiarities and manage his animals according to their differences of appetite, digestion and assimilation. Some animals do not bear confinement, and others cannot endure the cold; a chill makes them sick.

A Pennsylvania farmer had a little fact brought home to him in his wheat crop this year. A part of the field yielded a good crop and a part was very poor. The ground was all treated exactly alike in the preparation, manuring and seeding, but there was a sharply defined line between the good and the poor yield. The previous year the ground had been mowed, part early, and part quite late. The aftermath grew up quick and tall, on the early mowed surface, on the late mowed there was no aftermath; neither was pastured. The good wheat was on the early mowed portion. The early mowing and the growth of the aftermath, which was plowed under, did the business; in all other respects the land and other treatment were alike. Early mowing always gives a better aftermath, and this, when undisturbed, enriches the soil. It will do to stick a pin there.—[*Farm Journal*.]

## Veterinary.

### Influenza.

A specific epizootic fever of a low type associated with inflammation of the respiratory mucous membrane, or less frequently of other organs. It has prevailed at intervals over different parts of the world in man, horses, dogs and even cats.

**Causes.** Nothing can be definitely stated as to the primary cause of its development, as all peculiar conditions of soil, volcanic action, atmospheric electricity, aërial moisture or dryness, density or levity, season, temperature, winds, calms, ozone, and antozone fail to account for its appearance. The great American epizootic of 1872 was preceded and accompanied in Michigan by an excess of ozone, but the excess did not determine its appearance in other States, which it invaded by a gradual progress and with a rapidity proportional to the celerity of communication. Again insular and sequestered places escaped, as Prince Edward's Island (frozen out), Vancouver's Island (quarantined), Key West, Hayti, St. Domingo, Jamaica, La Paz, by the non-importation of horses (Cuba suffered through imported American horses.) It stopped at Panama, where there is no horse traffic owing to the state of the country.

**Symptoms.** The disease comes on suddenly with extreme weakness and stupor. There is often pendent head, half-closed, lustreless eyes, great disinclination to move, with swaying gait, and cracking joints. Appetite is lost, mouth hot, clammy, bowels costive, urine scanty and high-colored, pulse accelerated and weak (sometimes hard), a cough, deep, painful and racking comes on, crepitation or harsh blowing sounds are heard in the chest, and the membrane of the nose assumes a bright pink or dull leaden hue. The ears and limbs are alternately cold and hot, the hair rough, the skin tender and frequently trembling.

Soon the nose discharges a white, yellowish, or greenish matter, and the animal may recover, or an increasingly heavy breathing, depth and painfulness of cough, and changed or absent respiratory sounds in the chest, with dullness on percussion, show that the lungs are seriously involved. Thus there may be the symptoms of pneumonia, pleurisy, bronchitis, hydrothorax, pericarditis, hydropericardium, etc. Clots sometimes form in the heart, modifying the heart sounds and proving rapidly fatal.

In other cases the abdominal organs suffer, and with great torpor, stupor, tension and tenderness of the abdominal walls there are colicky pains, ardent thirst, coated tongue; yellowness of the membranes of nose and eyes, yellow or reddish urine, costive bowels and dung in pellets, thickly coated with mucus.

Sometimes rheumatic swelling and tenderness take place in the muscles and joints of the limbs, and may even last for months. At times, paralysis or delirium will ensue, or, finally, severe inflammation of the eyes.

**Treatment.** Overcome costiveness by injections of warm water, or by one-third the usual doses of linseed oil or aloes. Give mild febrifuge diuretics (liquor of acetate of ammonia, spirit of nitrous ether), with anodynes

(extract of belladonna), and when fever subsides or great prostration comes on, stimulants (nitrous ether, aromatic ammonia, carbonate of ammonia), and even tonics (gentian calumba, quassia).

Counter-irritants (ammonia and oil, equal parts, mustard, etc.) may be used from the first to the throat, sides, or abdomen, according to the seat of the inflammation.

Soft mashes, roots, or green food, pure air, without draughts, and warm clothing, are essentials of treatment throughout.

If the abdominal organs are the main seat of disease, supplement the medicines above named by demulcents (slippery elm, mallow, boiled linseed,) and anodynes (opium, hydrocyanic acid,) with, in some cases, a gentle laxative (olive oil). Nervous symptoms may demand wet cloths to the head, blisters to the sides of the neck, purgatives, unless contraindicated, and bromide of potassium. The rheumatic complication must be treated like ordinary rheumatism, with colchicum, propylamine, acetate of potassa, turpentine, warmth, counter-irritants, etc.—[Law's Veterinary Adviser.

### "No Foot, No Horse."

"For want of a foot the horse was lost," says the old adage, and how often is this found true in every-day experience. The horse's foot is the most vulnerable part of his body. Still, few owners of horses ever use the precaution to examine the feet daily to see if they are in good order. A case which occurred recently will act as a warning. A horse while being driven stumbled several times, and each time the owner lashed the poor animal. At last the horse went lame and limped excessively. To make time [the owner still plied the whip, and it was after dark before the man reached home. The horse was put into the stable and left without any examination. In the morning it was found standing with one foot held up from the ground and greatly swollen. A stone was found wedged in the shoe, and the sole was so bruised that it was broken and bleeding. The horse has done no work since, and will probably lose the foot from interior ulceration, and the owner will lose a horse.

Nearly every case of navicular disease occurs in this way, by bruises upon the sole by removing the frog from horses which have to go upon rough roads. The frog is designed by nature to protect the exceedingly sensitive interior of the foot, and especially the bone upon which the whole weight of the animal falls. This ends in the centre of the foot upon a loose cushion of bone which is called the navicular bone from its boat-like shape, and it is also known as the coffin bone for a similar reason. When this bone is diseased intense inflammation occurs, and the foot suffers exceedingly. The horse flinches when going upon hard ground or down hill, and when resting eases the pain by extending the foot forward and resting it upon the toe. The fore feet alone are subject to this disease, for obvious reasons. Some persons are so badly advised as to pour hot tallow in the foot of a horse so diseased. This is a sad mistake. It kills the horn, which scales off and increases the injury and suffering in the sensitive interior of the foot.

More horses are lost by this disease than by any other. It is difficult to cure, because the bone is involved, and the foot is so completely cased up in its horny box. It is often necessary to cut away the diseased frog and open the foot to the reach of curative applications. Generally the soothing influence of hot baths and the injection of gentle caustics, as solution of sulphate of zinc, with the application of a blister between the heels, and long-continued rest at pasture in a moist field, will remove this trouble. But how much better it is to avoid all this trouble and loss and suffering to a noble beast by considerate and thoughtful care. The torturing bearing-rein has to answer for much of this wrong and injury. A horse needs to see his path. Notice a horse on a road after dark, or cumbered with loose stone, how he will lower the head to see and pick out the best path. The bearing-rein prevents all this, and causes the horse to strike his feet upon every obstruction. There are many other reasons why the horse's head should be free, but this one is alone sufficient.—[Cor. N. Y. Tribune.

## Poultry.

### Why they Fail.

A "Reader" asks:—"If the poultry business be as profitable as the majority of poultry writers represent, why is it that so many engaging in the business make such wretched failures? Of a dozen acquaintances who have within the last five years tried poultry-keeping on a large scale, only one has made anything like a success of the business, and he is not getting rich very rapidly—in fact he just manages to make both ends meet."

One reason, and perhaps the chief, why so many who engage in the poultry business make "such wretched failures" is because they rush into poultry keeping on a large scale without any previous preparation, or the slightest knowledge of the amount of skill and labor required to make 500 hens pay a living profit. They seem to think that anybody can manage hens—that they can buy a few acres of land, put up a big poultry house, stock it with fowls, buy some feed, a few pounds of "egg food," a "recipe for keeping eggs good for any length of time," and begin to lay up money right off. Those who try the fancy part of the business have the same vague ideas in regard to poultry breeding, and go to work in pretty much the same way. Of course they fail; a knowledge of poultry keeping is not born with man, or woman either, any more than a knowledge of general farming, general housework, book-keeping, school-teaching, or any other occupation; it must be learned, and cannot be learned all at once; a man must grow into a knowledge of details of the business. There is no question in regard to the profits to be derived from poultry keeping when rightly managed; and the man or woman who learns the business and goes into it with a determination to make a success of it, can do so, and that too without more hard work than would be required in any other occupation in which they might engage.—[Fanny Field in Prairie Farmer.

(Breeders of all kinds of stock should take a lesson from the above.—Ed.

### How to Clean a Poultry-House.

This vexatious job is dreaded by all, but everything depends upon the arrangement of the interior. As there are different methods of constructing the floors, so are there many modes of cleaning the houses. A house so arranged as to permit the droppings to accumulate under the roosts, with earth as an absorbent, soon becomes filled up to a certain depth with the manure, which at all times gives off disagreeable odors. Constant sprinkling with disinfectants may prove serviceable, but nothing that may cause dampness should be done in a poultry-house. The better plan is to have a hard floor, either of boards or cement, and sprinkle dry dirt under the roosts, which not only serves as a disinfectant, but when swept away with a broom, permits of the easy removal of the droppings without fouling the floor. If the house be thus swept out daily, while the fowls are partaking of their morning meal, the time consumed in so doing will be but a minute or two, and the fresh application of the dirt will cause the interior to be inviting to the hens, as well as permitting of the collection of eggs without coming in contact with filth. The method is also an excellent preventative of lice, as the dirt may be freely dusted against the walls, in the nests, and on the roosts, to which the hens will not object.—[Farm and Garden.

**PRESERVATION OF EGGS.**—At the London Dairy and at the Birmingham Fat-Stock Show during the last two years, prizes have been offered for the best-preserved eggs. These, as well as many private tests, have shown that the lime-water system is, all things considered, the best. A pound of lime should be stirred with a gallon of water, and the eggs, perfectly fresh, immersed therein in barrels or jars. This excludes air and any germs that might cause mildew or mould, and prevents evaporation, so that the contents of the egg are not reduced in bulk. It is important to have a considerable excess of lime to replace any that may become carbonated. The vessels containing the eggs should be kept in a cool, well-ventilated place. A very successful variation in the process consists in embedding new-laid eggs, warm from the nest, in a thick paste of lime and water. Eggs thus preserved for six months could hardly be distinguished from those newly laid. The contents of eggs evaporate rather rapidly through the shell; and the object of the preserver must be to prevent this evaporation, and at the same time to allow for the expansion and contraction of the natural air-space in the egg due to changes of temperature. The plan of coating the shells with wax or melted paraffine fails in the latter particular. Strong brine fails because the contents of eggs preserved in it become much reduced in bulk.

Prof. Sanborn, of the Missouri Agricultural College, in a recent bulletin says: "For three years I carried on very careful experiments during the summer season with green food vs. dry food for cows, weighing food, growth or decline in weight of cows, weight of milk and weight of butter. With the present price and plenty of good pasturage, clover, timothy, and grains in Missouri, I very seriously doubt the propriety of handling daily, in little lots, by high priced labor, water laden, green food for our dairy or other herds."

### 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.

Voluntary correspondence containing useful and seasonable information solicited, and if suitable, will be liberally paid for. No notice taken of anonymous correspondence. We do not return rejected communications.

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.

**"How Should Farmers Spend their Evenings?"**—Your fair correspondent, in her prize essay on "How should farmers spend their evenings?" says:—"It is admitted by all that, taking the annual average, farmers have more leisure than those in any other occupation." From this I am led to presume that Miss Jessie never lived on a farm. A man who has his living to get on a farm either in this or any other country, and who wishes to keep out of the hands of the sheriff, must rise with the lark, and have his wits about him during his waking hours, and when the labors of the day are past, whether it be winter or summer, he must rest his weary, aching body, preparatory to the labors of another day. Few farmers have either leisure or inclination to pour over some work of either fact or fiction, and history, mathematics, travels, chemistry, poetry, &c., have little interest for him after having spent the best years of his life in reclaiming the wilderness, and, to the best of his ability, providing for his family, whom he is training to follow in his footsteps. Many of these men, with all their shortcomings, set a worthy example to those who are too ready with their advice, which, if followed, would not be so well for him. It is too sad a fact that so many young men spend their evenings at taverns and become a very pest to the neighborhood in which they dwell. Who is to blame for this? Why are such places allowed to exist and encouraged by those in authority in spite of the law? The hard, horny hand, awkward gait and bent body are too often turned to ridicule and insult by those in more favored circumstances; but are ever ready to profit by his labors. Who has made Canada follow in his footsteps? Certainly not your men of letters, science or law. I pity the farmer who has to go to any of these men for advice. Examine our jails and compare the number of farmers with the rest of the community confined therein!—G. R., Arva Ont.

[The above letter contains a great deal of sound, practical sense. We know nothing of the writer, except what he informs us in a foot-note that he has been "thirty years a farmer," and we know even less about Miss Robertson. Our readers may therefore presume that Mr. R. has never been off the farm, as well as that Miss R. has never been on; so that if both presumptions are justified by the facts, the one is in as awkward a plight as the other. In one sense Miss Jessie's essay may be liable to be misconstrued; we do not think her intention was to put every farmer, with his wife, sons and daughters, through her lengthy program of winter-evenings' instruction, but to give a variety from which each may make a choice according to his or her ability or taste. We have been many years on the farm as well as in business, and our judgment is, aided by close observation, that farmers have much more leisure time than business men, taking average circumstances as well as annual averages: our heaviest work does not usually commence until after the farmer's day's work is done. There is a larger percentage of mental slaves amongst business people than manual slaves amongst farmers, and the condition of both is to be deeply deplored. Amongst farmers, however, there is one redeeming feature; both mental and physical toil is essential to the farmer's success; while the business man, when engaged in physical occupations for the good of his health, does not promote

his enterprises, and any benefits that may be derived are indirect and remote. Mr. R. puts stress upon keeping his wits awake, but he seems to have no time to cultivate and strengthen the wit faculty. He is perfectly just however, in his assault upon his town cousins, who are always ready and willing to enjoy the products of his toil—honestly, if they conveniently can. Country manners are just as much in their place in the country as city manners in the city, and any aggression from either party would be attended with disastrous consequences. The country lad shows sound sense in not mocking the customs of his city cousins; for, although he is convinced that dandish propensities are not suited to country life, he is too modest to express an opinion as to their fitness in the places of their nativity. If Miss Robertson has blundered in not suggesting that her "Manual of Common Politeness" should be written by a farmer, will some of our readers kindly let us know?]

**Holidays for Farm Laborers.**—In your last you say a farm laborer is entitled to the legal holidays, unless otherwise agreed. Now suppose part of a man's work is to attend to a certain number of stock, who is to attend to them if he insists upon taking his holidays?—G. D., St. Thomas, Ont.

[There is no statutory law on all these fine points, the circumstances of each case and the local customs being the main guides. If a man is engaged to attend stock, he knows that the animals must be fed on Sundays and holidays as well as on other days, so that he cannot shirk these duties, and all who are accustomed to assist him are expected to do so. No extra work, however, can be demanded, merely the work of necessity being required to be performed by the laborer.]

**Contributors Wanted.**—Notes from Manitoba. —I have thought many times of writing to ask if a short paragraph or so concerning agricultural matters in this part of the country would be acceptable for insertion in your very admirably conducted paper. I forward a few remarks, and if anything like them would be of any interest, I would be pleased to send a little every month. If you think them worthless I still wish you every success.—NORWESTER, No. 2 Range, S. W., Marquette, Man.

[We thank you for your excellent article, which we publish with pleasure. We want brief notes occasionally from subscribers in all parts of the Dominion, providing they are short, seasonable, and to the point. We especially desire articles from Manitoba and the North-west, as a great deal has been written to boom up the country and we depend upon our subscribers for truthful statements, and we want to see this new country, like all other enterprises, progress on its merits. Contributors will please mail their articles so that they will reach us not later than the 25th of the month. We don't desire them sooner than the 20th, as we like to see the latest news. Our correspondent being so kind as to offer an article every month for the benefit of his fellow farmers surely other subscribers will generously offer to write once or twice a year. Our correspondent writes as follows: We have been favored with splendid weather for harvest work; some days during last month the thermometer registered 104 degrees, and the crops have mostly been gathered and threshed without a drop of rain falling upon them. Notwithstanding this, however, the future prospects of very many farmers are decidedly gloomy on account of their grain being very badly frozen. Jack Frost paid us an exceptionally early visit this year. On August 24th and several succeeding nights we had very severe frosts, which not only ruined the gardens, but damaged the wheat to such an extent that in some localities the farmers do not intend cutting it at all; it stinks as it stands in the field, while many others have countermanded their orders for binding twine and cut their wheat simply as pig feed. This coming upon several previous bad seasons will have a most depressing effect upon many of our farmers, and probably drive them from the field in despair; and on the other hand, those whose grain is not frozen will gain the advantage of better prices, No. 1 hard selling at present at 65 cents. There is a lesson in this: shows the wisdom of speeding the fall plough, so as get our seed in the ground at the earliest possible moment in the spring, and I think it would be better for if we delayed our threshing a little, and put all our strength in the stubbles. Beef and pork are very cheap the farmers selling at 34 cents per lb. live weight, while the butchers retail it out from 12 to 15 cents per lb., rather a large margin for profit. Other farm produce equally cheap. Butter hardly saleable at any price, and of cheese very little is made; it is an article that is altogether absent from most farmers' tables. There is one factory at Nelson which is producing a first-rate cheese, and if farmers would combine, I don't see why cheese factories and creameries should not be more common amongst us, producing good articles and conferring considerable benefit upon individual farmers.]

**Relative Feeding Values of Timothy, Clover and Oat Fodder.**—Would you be good enough to state in your paper what are the relative values of green oats, and timothy and clover hay for feed for milch cows, beef cattle growing cattle and horses. In times, when ap-

pearances are against the probability of a good hay crop, the farmers here cut oats before ripening and store it for fodder. Various opinions are expressed as to whether it is or is not injurious as food for horses, though the general opinion is that it is much better for milk cows and for fattening cattle than hay. Would your paper enlighten us? Be good enough also to say the best time to cut oats for fodder.—R. H., Douglstown, N. B.

[We have received several inquiries from time to time as to the comparative feeding values of different kinds of farm products, and in this issue we explain the methods by means of which farmers can make their own calculations. Please, therefore, read our articles on "Feeding for Dairy Products, Beef and Growth," and "Valuation of Farm Products according to their Chemical Composition," then read this again, and you would confer on us a great favor by letting us know if you and others interested in your question now thoroughly comprehend the problem, as we do not wish to waste time and space in explaining what cannot be comprehended by the average farmer. Average timothy, red clover and fodder oats have respectively an albuminoid ratio of 1:3.1, 1:5.3, 1:7.2 (It makes little difference whether these foods are calculated as dry or green, for, if well cured, there is little or no nutritive substance lost). By these figures it will be seen that clover has the highest nutritive value, and that fodder oats is somewhat higher than timothy. If, however, the timothy is grown on a richer soil and is better cured than the oats, it may be considerably more nutritious. Again, if timothy is fed with foods that are too albuminous or concentrated, such as peas, bran or oilcake, then it will produce better results than the oat fodder, but if fed with foods that are too bulky or carbonaceous, such as straw, corn or corn fodder, then it will produce worse results than the oat fodder. Again, if the timothy is cut in an earlier or more immature stage than the oatfodder then its nutritive properties may be higher, for it will contain more flesh-forming matter and less woody fibre. Again, if the individual tastes of the animal be such that it will relish timothy better than oat fodder, then the latter will produce better results than the former. There is nothing in oat fodder that should make it injurious to horses, except that too much may be given, and this objection will apply to all foods. If horses do not relish it, feed it with something else, and watch that their bowels are in a right condition. The same principles apply to all foods, and if you carefully study the editorials mentioned, you cannot fail to come to an intelligent conclusion. With regard to the differences in the nutritive qualities of hay cut at different dates, which applies to your question, please consult our issue of last June. If you want a nutritious and concentrated food, say for horses, milk cows and growing stock, cut early, when the grain is in the milk and before the straw gets too woody; but if you want it merely to sustain stock over winter, let it grow four to eight days longer, for then you will get a greater yield per acre. The best test is to chew the end of a straw, and you will then find out whether it is getting too woody or not. A good deal depends upon the variety of oats.]

**How to Feed Barley.**—Would you inform me through the ADVOCATE which way hogs will receive the most benefit from eating barley; by having it boiled, or having it ground and fermented.—A. J. S., Olinus, Ont.

[We had hoped to write an editorial article for this issue on cooking and grinding feed for stock, in answer to numerous inquiries, but our space has been too limited. Meanwhile, don't boil or ferment your barley, and look out for reasons in our next issue. If you have a grinding apparatus you may use it, but don't purchase one till you hear from us again.]

**Levelling Implement.**—1. Do you know how to make a machine for levelling a field. I have been told there is one made; please describe it if you know. 2.—Is there any way to prevent water from smelting bad? The cistern is new. If the air could get at it would that help it?—W. E. L., Dundas, Ont.

[1.—We don't know of any such implement except the ordinary road-scraper. You can easily make one by taking a piece of timber, say five or six feet long, hewing it to one edge, and putting handles in like a plow. The kind of implement will depend upon the size of the hills which you have to level down. 2.—Treat the water as described in our last issue. No cistern should be air tight.]

**Beware of Swindlers.**—I would like a little information concerning the Globe Lightning Rod Co. The agents of that company asked me to act as their agent in my parish. I consented and they let me some goods. I gave my note for the amount (according to his figures), but I found that, according to the firm's list he let me, I paid nearly two pious. I wrote the company for an explanation and got no answer, so I come to you, think-

ing you could give me some information, seeing that the company advertises in your paper.—F. M. S., Rosedale, N. B.

[We have frequently warned our readers against having any transactions with patent-right agents, and have advised them to write to headquarters before closing any bargains. We would not have inserted the advertisement of this company had we not had good reason to think it was doing an honorable business. We interviewed the Manager about your case and he informs us that he has nothing whatever to do with the business in the Maritime Provinces, that Mr. Thos. Robertson, Barrington, N. S., has the control of all the Maritime Provinces. He further informs us that there have been several persons transacting a fraudulent business in the Company's name, they having procured some of their old forms in a clandestine manner, and some cheap and inferior wire; that he caught one, Gabriel Reeves, and sent him to the Central Prison for six months, and a man named Heine was sent to jail for one month. It would not be safe for us to give you legal advice without knowing the full particulars of the transaction, but from the facts you give we think you will be safe in refusing to pay any more than you think reasonable, as he will not likely sue you if there is anything dishonorable in the transaction. You had better consult a good lawyer. We dare not expose these swindlers as we ought, for the law of libel is such that we are apt to involve ourselves in difficulties.]

**Marl as a Fertilizer.**—In 1876 a party from this section wrote you with a sample of marl, and in May, '76, you referred to it in your paper. Have you learned anything since then of the value of marl as a fertilizer, or whether there is a demand for it? I am interested in developing the marl bed if it should be worth doing so.—W. J. K., Penetanguishene.

[Marls vary greatly in their composition, but they are chiefly valuable as a source of lime, the quantity of carbonate of lime varying from 10 to 80 per cent. The other ingredients in the composition of marl soils are clayey matters containing variable percentages of phosphate of lime and potash. "Shell marl" is nearly pure carbonate of lime, usually found in swamps. You should send an average specimen of your marl to a chemist for analysis, and then its exact value can be easily ascertained. When carbonate of lime is heated, the carbonic acid is driven off, lime being formed, which, when treated with water, slaked lime is procured. This is often used as a fertilizer, and some soils are benefited by it, mechanically and nutritively; but the carbonate, even when finely powdered, is very slow in its action, and its chief use is to improve the mechanical texture of heavy soils, although it will also slowly furnish lime to plants when the soil is deficient in this constituent of plant food. On light soils which contain very little vegetable matter, the carbonate is preferable to the caustic lime. In this country, lime, as a fertilizer, is becoming less popular every year, as it uses up great quantities of manure, and our best farmers are changing their modes of cultivation in such a manner as to obviate the necessity of using lime. (See last April issue of the ADVOCATE.) You may be able to obtain a local market for your marl, but it will be too bulky for extensive shipment, as the fertilizing ingredients which it is likely to contain can be more cheaply obtained in a more concentrated form.]

**Bark Splitting on Apple Trees.**—What is the cause of the bark of apple trees splitting near the ground, killing the tree? I have had several of my apple trees die though the bark splitting near the ground. When first seen in first part of summer, probably one or two small checks will be seen, but before long the bark will be loose quite a distance around the tree, and on examination the bark will be loose and dead.—J. C., Hartford, Ont.

[This condition has often been discussed by fruit growers, and it is now the generally accepted opinion that the splitting of the bark is caused by the hot sun breaking out in spring when the sap is beginning to rise. The trees can be protected in various ways; placing a shingle in the ground between the foot of the tree and the sun will perhaps be the most convenient protection.]

**Cure of Pin Worms.**—I have a mare that is very bad with pin worms. I have given her turpentine and raw oil, and it does not do any good. Kindly let me know what will kill them.—T. B., Sidney, Manitoba.

[Your remedy usually proves effectual; but the following treatment has nearly always proved successful: Go to the druggist and get three ounces of quassia bark or chips, put it into half a pailful of water, and let it simmer in a pot on the stove for half a day; then let it cool and inject two quarts every other morning per rectum. You may also give a dose (1½ pints) of raw linseed oil twice a week. Continue this treatment so long as you find worms coming away.]

**Advantages of the Ontario Agricultural College—Farmers' Sons Leaving the Farms—Crown Lands.**—1. What is your opinion of the advantages of a two years' course at the Guelph Agricultural College? Is it more beneficial than going right on a farm and taking the work as it comes? 2. I recently wrote to the Secretary of the Agricultural and Arts Association for copies of prize essays on "The Increasing Tendancy of the Times for Farmers' Sons to Leave the Occupation of their Fathers for other Pursuits; its Cause and Remedies," but having received no reply, I write to you for information. 3. Could you recommend any agricultural works useful for a young man "just out"? 4. Are there any free grant lands in Ontario and Muskoka? 5. Are there any farms to rent or for sale about the Niagara Falls?—W. C. P., Colborne, Ont.

[1. If you want to learn the principles of farming, there is no better institution in the world than the Ontario Agricultural College; but if you wish merely to obtain a practical knowledge of farming, you will attain your object much more quickly, cheaply and efficiently by going on a well-conducted farm. The managers of the Model Farm follow the old rut of practical farming, and make no use of the principles taught in the College; in fact they sneer at the science of farming. Although they follow the old methods of farming, they carry out these methods in a most extravagant manner, so that the student who follows them in after-life will be sure to become bankrupt. Under a first-class farmer, you will be able to learn economical management, as well as the best methods, and as to the principles you can, at the same time, acquire them from good agricultural papers and books. Go into a settlement where there is a variety of soil and where diversified husbandry is most extensively practiced, if you are going into mixed farming. In this country every farmer has to study the special requirements of his own soil. 2. Four essays on the subject have been published in the report of the Agricultural and Arts Association for 1882. These reports were published at the public expense, and you are entitled to a copy. Write to the Hon. A. M. Ross, Commissioner of Agriculture, explaining the delinquency of the Secretary of the Association, and if he does not respect your letter, kindly inform us, as we consider it our duty to look after government officials. 3. Unfortunately there is no useful work on Canadian agriculture, but we supply our subscribers with all the best works on general agriculture, live-stock, dairying, etc. See list in our advertising columns. 4. Write to the Commissioner of Crown Lands. 4. There are farms for rent and sale in every part of the Province.]

**Fish Culture.**—I have a few thoughts to present to my fellow farmers all over the country. I know the times are hard and we are all anxious to turn an honest penny. When wool is only 25 cts., and wheat 80 or 90, we must look sharp to make both ends meet, and a free exchange of thought often does much to assist us. I feel that I owe all I have to ideas gleaned from different papers. I bought a farm near this city in 1881; then it was thought that everything was at its lowest and times must brighten up, but expecting good times did not make my payments, I could not raise grain, sheep or hogs with any profit, so I was driven to look for something new. I struck on raising fish. I will say to start with that the U. S. Government is doing all in its power to advance fish culture and will give to anyone desiring to start in the business, from 12 to 20 German carp fish to start and breed from. This is a new field and almost entirely unoccupied. It requires no capital and yields a large revenue. One eighth of an acre devoted to German carp will make a clear profit of \$300 at the very lowest estimate. I think I hear a host of fellow-farmers say, just as I did, "I would like the \$300; where can I get information regarding the fish business?" Write to the U. S. Fish Co., Columbus, Ohio, enclosing a plainly addressed envelope, and you will receive free the information you desire. Will they tell me how to get the fish promised by the Government? Yes, they will send you blanks to be filled out by which you can get the fish without cost. Is there any doubt of my making money in the fish business? No. Do you think the Government would go the expense of raising fish and shipping them to different parts of the U. S. and then giving them without any pay to her citizens, unless she was positive it was a profitable trade for those citizens to engage in? How large a pond must I have to start with, and what will it cost? A pond 15 or 20 feet across will do for a start and it will cost nothing but a little digging. There is no stream on my lot; what will I do for water? Carp do not require running water; they do better in still water, even in swamps. They delight in mud. What sections of the U. S. are best for raising fish? Any part will do. Carp are such excellent fish that they always command a good price and ready market. Will it not take a long time to get a start with the 20 fish supplied by the Government? No, indeed. Each female carp lays from 40,000 to 50,000 eggs every year. They increase amazingly fast, and will increase your dollars if attended to. What season is best to make a fish pond? Right away. The Government will send you fish between Nov. 1st and March 1st. Do you have to feed the fish in winter? No, they eat nothing during the winter months, but lie in a dormant state, while sheep and cattle are eating their heads off. If the Government would offer to send a fine pair of pigs to any one who asked for them, every farmer in the land would send in his name. Then why not get some fish when they cost you nothing, care for themselves, and bring you more money than any kind of farm stock. I wish all papers in the land would urge this matter on their readers, as I know they would be conferring a lasting benefit.—W. B., Pittsburg, Pa., U. S.

The Household.

Talks With my Patients.

BY A FAMILY DOCTOR.

MY DESPONDING PATIENT.

Medical men, in general practice, very frequently meet with the desponding patient. Indeed a practitioner invariably has in his *clientele* cases of lowness of spirits of every grade, ranging from simple *ennui*, or weariness, to utter dejectedness, or hypochondriasis.

If we can once determine the cause of the depression of spirits, and have it in our power to remove it, we are generally successful in the treatment of such cases. They are very often, however, complicated with some functional or obscure ailment of the heart. Nor can the symptoms of hypochondria remain unremoved for a length of time, without interfering with the blood-making process in a very material way. So we find concomitantly dyspepsia, constipation, sluggishness of the liver, and general scantiness of the secretions, with often a hot, not to say feverish, condition of both mind and body.

The sufferer is not always in the same frame of mind. The dejectedness ebbs and flows like the tide. There are times when he is bright and joyful, though it is a very emotional, almost hysterical kind of joyfulness, and this may give place very quickly to fits of irritability and quickness of temper, during which the patient often says or does things that there is no one more truly sorry for than he is himself a short time afterwards.

Hard study, too close attention to business, worldly cares and worldly sorrows, are all causes of hypochondria. So too are neglect of personal ablution, want of exercise, slothful habits, indulgence in the pleasures of the table and the use of drugs. I ought to have said the abuse of drugs, but when I wrote the word "use" I was thinking of those narcotics called night-draughts, or night-caps, which too many people indulge in by way of coaxing the goddess *Somna* to smooth their pillows. For sleeplessness is one symptom, and a painful and distressing one it is, of hypochondria. There is often an actual dread of night, the patients knowing that while others are sleeping as soundly as the traditional middy on the maintop, slumber will not visit their eyelids till the small hours in the morning, and that even then it will be a half-wakeful, and often dream-perturbed sleep.

Cases of this kind require special treatment, in accordance with the causes that have given rise to the mischief; but this much may be said about all of them: narcotics never fail to increase the hypochondria, tonics may or may not do good, and aperients do harm, as a rule.

It is astonishing how small an excuse will of ten lead people to commence use of night or sleeping draughts. Extra fatigue, pain, a day or two of mental anxiety, grief from the death of a relative, anxiety of any kind—any of these will banish sleep from the pillow, but if the temporary inconvenience is borne with sleep will return, and with it happiness and health. On the other hand, if sleeping draughts be taken, congestion of the brain and its membranes is certain to follow to a greater or less

extent, and after a time the sleep that is obtained is so far from being refreshing, that the patient next day is tired, jaded, cold and weary, brightening up—through the natural reaction—only towards evening, at the very time the nerves ought to be calming down, preparatory to a night of wholesome rest.

Walking.

It would be money to the pocket, happiness to the heart, and sedative to the nerves of the great American people—especially its woman-kind—if they knew how to walk and how to enjoy walking. They are a fine race physically, if they had more flesh on their bones and blood in their veins; if they did not labor under the insane delusion that it was a breach of good manners for any woman professing to belong to social life to weigh more than a hundred and twenty-five pounds. They have good heads and fine foreheads, when the prevalent spasm for bangs passes over and allows you to see them, but the tendency of both brains and body is toward length without breadth or thickness; they mount high, but go neither broadly or deeply enough. They are full of new ideas, of gropings and grasplings; they are rich in inventions and innovations; but the solid thought necessary to amalgamate all the brilliancies and vagaries into sound sense and make practical wisdom come from it is what we most need. And walking will do it by a natural doctrine of evolution. For walking doth beget healthy appetite, and appetite cries for food, and food makes blood, and blood left to itself develops brawn and brain. When the shoulders widen—everything else being equal—the mental processes broaden also. This is a fact in mental philosophy.—[Boston Journal.

Housework at Home.

When there are a number of girls at home it is an excellent plan to allow each one in turn to assume the responsibility of housekeeping for a certain time. It doesn't hurt girls to be made to take a measure of responsibility concerning household tasks; far otherwise, it does them immense good. Let them in succession have a week at a time, charge of the chamber work, the mending, the cooking, the buying even for the family, all of course under proper supervision, and their faculties of reason, perception, judgment, discrimination, and continuity will be more developed in one month of training than in six months of common schooling? We all know, who know anything at all of such matters, that often it is a great deal easier for mothers to do the work themselves than to teach young girls how to do it. But when will they learn if they are not taught? and if their own mothers haven't patience to teach them, who can be expected to?

It is cruelty to children to permit them to grow up in ignorance of that which it most concerns them to know. Let them also learn to buy for the family; it is something to know how to spend money judiciously. It is a pity that girls and boys are not taught more than they are about the prices, values, and qualities of articles, both of diet and dress, in ordinary family use.

With a little attention on the part of parents

they might learn how judiciously to select their own clothing, and to be able to tell what prices they should pay, what qualities recommend, one above another, and of what materials the various fabrics are made, and very much concerning their mode of manufacture. They can easily learn how to discern the difference between good meat and bad, sugar of first, and inferior grades, flour that will make bread of prime quality, and flour that cannot be trusted, and so of all other things of common use, with their prices.

Knowledge of this sort imparted as occasion serves, here a little and there a little, in familiar conversation, and illustrated by reference to the objects under discussion, will prove of immense value to young people when they, self-impelled or by outward necessity, launch out for themselves upon the sea of life.

Sick Children.

It is better to take your child to the doctor unnecessarily than to postpone this duty and find that it is too late. A few hours in the disease of children may make all the difference between hopeful and hopeless cases.

When you make counsel with a doctor give him your explicit confidence. Do not permit a friend—even though the friend be an experienced old mother and nurse—to disturb confidence in the doctor. If you lose confidence in him, get another physician.

When a child is old enough to know what you mean never threaten it with the doctor. It may be important some day that your child should not be frightened at the doctor, but regard him as a friend and helper.

A sick child demands a nursing mother, who has tact, patience, firmness, added to her affection. With these, so much can be done, without them the battle may be hopeless from the first.

It is asserted that every year three thousand people die in New York who need not die if proper care were taken of them. High heated terms have much to do with death. Every hour that a child is exposed to a temperature above eighty-five or eighty-eight degrees, in a crowded neighborhood, it is robbed of vitality. High heat acts injuriously on its blood, nerve and muscle cells, and also on the digestive system of the child, and the milk of the nurse. High heat does more—it decomposes all organic refuse and dirt in houses and about them, and poisons air, water, food, clothing, bedding, carpets, etc. Hence the need of excursions for children and of cleanliness at home.

Do not lift or drag a child by its arms. You strain ligaments which were not intended to bear the weight of the body. A grown person swinging from a bar with his hands relieves the ligaments by the use of muscles.

Correspondence signed "Justice" is received from Toronto. We would feel obliged if the writer would furnish the name and address. The name would not be published, but it is necessary to know that correspondence is genuine.

A very complete filling for open cracks in floors may be made by thoroughly soaking newspapers in paste made of one pound of flour, three quarts of water, and a tablespoonful of alum thoroughly boiled and mixed. Make the final mixture about as thick as putty and it will harden like *papier mache*.

## Family Circle.

## THE PAINTER'S WIFE.

"But you have not told me yet, Cyrilla, what incident the picture is intended to represent."

"It is intended to represent the story of 'Ginevra,' as told in Roger's 'Italy.' I daresay you recollect the poem in question?"

"Oh, yes; I remember all about Francesco Doria and his youthful bride; and how the latter hid herself in an old chest on her wedding day, and was smothered, and her body not found for ever so many years afterwards."

"That is just the point—where Ginevra is about to hide herself—that Theodore is trying to illustrate. I have sat to him I don't know how many times already."

"And a very good likeness it is of you, my dear. And the chest in which she is about to hide herself is painted from that real chest in the corner there! It looks hundreds of years old. Dear, dear! it's quite wonderful. But I thought painters always invented such things out of their own heads."

The speakers were aunt and niece—the latter, a fair and slender girl of twenty, with a singularly youthful expression of face for one who was both a wife and a mother. The time was half-past nine on a certain autumn evening some half-dozen years ago; and the place was a pleasant, home-like room in a small villa in one of the westerly suburbs of London.

"The mention of those Italian names, Cyrilla," said Mrs. Reece, presently, "puts me in mind of an old admirer of yours, Signor Pietro Fastini. By the by, do you know where he now is?"

"No. Where?" said Cyrilla, quickly.

"In a lunatic asylum. He went crazy about a year ago, and has been under restraint ever since. I don't think you treated him well, Cyrilla, to encourage his attentions, and then to cast him off in the way you did."

Cyrilla's cheek paled suddenly; she sank into a chair, and did not speak for a minute or two. "Signor Fastini misinformed, aunt," she said, at last. "Signor Fastini never received the slightest encouragement from me. I was attracted towards him by his great musical talent; but it was his own presumption that drew him on to speak to me as he did. Nevertheless, I am truly grieved to hear of the affliction that has overtaken him."

Cyrilla sat thinking deeply some time after her aunt's departure, going, in memory, through all those phases of her life in which the young Italian had been an actor. Her reverie was brought to an end by the clock on the mantelpiece chiming eleven.

She got up from her seat with a little sigh, and went into her dressing-room, which opened out of the room in which she had been sitting, and bathed her hands and face; and changed her evening-dress for a comfortable white wrapper; and unbound her yellow hair, letting it fall in a rich sheet down her shoulders; for Theodore had gone out to-night to a supper-party given by a brother artist who was about to enter the holy state of matrimony, and she had promised to sit up for him; for Theodore, on his part, had promised to be at home soon after midnight.

Going back into the sitting-room, Cyrilla rang the bell, and presently nurse came in with a baby, who, being a well-behaved young gentleman, was happily fast asleep at this late hour. He was deposited in a pretty little cot close by his mother's side. "You can go to bed, nurse, and the other servants can do the same," said Mrs. Thornhurst. "I will sit up for master myself. See that the doors and windows are all fastened before you go upstairs."

When the woman was gone, Cyrilla stirred up the low fire on the hearth into a fitful blaze, and then took up the first volume of a novel which had been brought her that afternoon from the library. Theodore would be home in an hour at the furthest, and the time would pass pleasantly and quickly away.

A pleasant, cozy, home-like picture—the pretty, girlish wife coiled up gracefully in her husband's huge easy-chair; the sleeping child; the room itself, with its walls half-hidden with sketches, prints and water colors, with the easel in one corner and the pianoforte in another; with Cyrilla's work-basket on a side-table in company with a meerschaum, big and brown, and a tobacco-jar after the antique. A pleasant picture, and one which Theodore Thornhurst, artist from the top of his head to the sole of his foot, would not fail to note when he should come stepping leisurely in through one of the three French windows opening on to the lawn, which had just been draped, ready for winter, with curtains of crimson damask, in place of the muslin ones which had shaded them through the summer months.

Cyrilla read on undisturbed for about half an hour, at the end of which time baby began to grow restless; so she laid down her book, and began to rock the cot with a slow, gentle motion, and at the same time to sing, in a minor key, the exquisite cradle-song from *The Princess*—

Sweet and low, sweet and low,  
Wind of the western sea;  
Low, low, breathe and blow,  
Wind of the western sea!

Singing thus, she lifted the child tenderly out of its cot, kissed it fondly, and carried it through the dressing-room into the chamber beyond, and there laid it snugly in bed. Presently she came back, still humming the music of the song under her breath, and leaving the door of the dressing-room half open behind her, so that she might the more readily hear her darling, should he awake and cry out. Then she sat down again in her husband's easy-chair, and went on with her novel. But the undercurrent of her thoughts was with her husband; and presently she glanced up at the time-piece on the mantel-shelf, only to discover that it had come to a dead stop some ten minutes previously, for want of winding up. She put down her book, and rose at once to perform the neces-

sary duty, for the voice of the little clock sounded like that of a friend in her lonely watching. How the words of that song haunted her memory!

Sweet and low, sweet and low,  
Wind of the western sea.

She was winding up the time-piece slowly and carefully, and humming the song to herself, and as she did so—what woman would not have done the same?—she glanced at the reflection of her own pretty face in the glass over the chimney-piece. She saw her blue-eyed face with its setting of yellow-hair, and the same moment she saw something else by no means so pleasant to look upon—something that for one brief instant caused every pulse of her being to stand still in silent horror.

There was someone in the room beside herself. What she saw in the glass was the reflection of a hand grasping the crimson damask curtains that draped the French window opposite the fireplace. Only a hand, but whose hand? It was very small and very white, but unmistakably the hand of a man, and just as surely not the big brown paw of Theodore Thornhurst.

Cyrilla's eyes dilated as she gazed; the murmur of the song died off her lips; her fingers ceased from turning the key of the clock. She stood like one changed to stone. She durst not turn her head to glance at the dread reality which she knew was behind her; she kept her gaze fixed steadily in the glass, watching with a sort of horrible eagerness for some sign or token of life in those white, deathlike fingers, which looked as if they belonged to a corpse. Suddenly, while she was looking like one fascinated, there was a slight movement of the curtain, the white fingers relaxed their grasp, opened, and for an instant were withdrawn. Next moment, they were there again, grasping the curtain as before; and as they reappeared, Cyrilla's heart thrilled with fresh terror; she felt—by instinct, and not by the action of any more positive sense—that, from amid the dim folds of the curtain, two eyes, unseen by her, were watching her every movement.

The dread inspired by this discovery—for she felt sure that her instinct was not playing her false—was almost more than she could bear; her senses seemed as though they were about to desert her; a dimness crept over her eyes; a numbness began to steal through every limb; and it seemed to her as though the room, herself, and even the terrible hand, were all fading into unsubstantial shadows, and that nothing could ever trouble her more; for all at once her fading senses were pierced by a faint sound—a sound that went straight to her mother's heart, and in one brief moment stung all her fading senses into vivid life. It was the voice of her child that she had heard, just as she was about to sink fainting to the floor. He had turned over in his sleep, and had felt for her in the dark, and had given utterance to a low, plaintive cry at not finding her beside him. To a feeling of life the most vivid and intense, that weak voice had recalled her. "For my child's sake," she murmured in her heart, "let strength be given me!"

Her hand was steady enough now, and she went on with the winding-up of the little clock, winding slowly, that she might have more time to think what her next move must be. She was strangely calm now, with that calmness which is induced in some natures by the presence of a great peril. As she kept on winding, her eyes seemed to be fixed intently on the little clock, but were at the same time watching the hand with a covert half-look that might or might not deceive the hidden eyes, which she felt sure were just as intently watching her.

There! the clock was wound up at last—never had it taken so long a time before—and the question was, what to do next? If she could only get away—get away into her dressing-room, and put the door between herself and her hidden visitor—see felt that both she and her child would be safe. It was their only chance of escape. The effort must be made and that at once; for to stay in the room much longer, watched by those unseen eyes, would be enough to drive her mad.

Sweet and low, sweet and low,  
Wind of the western sea.

How she contrived to get the words out she could never have told afterwards, but she found herself humming them over, and sliding across the room with an elaborately careless air, towards a little table placed half-way between the fire-place and the dressing-room door. The table was reached in safety, and Cyrilla ventured to breathe again. A photographic album lay on the table, and she took it up and began to examine it with the deepest apparent interest. While in this position, the hand was behind her. She would have given much to be able to glance over her shoulder and see whether it was still visible, but the effort was one that required more courage than she had to spare just then. Perhaps, even now, her unknown visitor was stealing out from behind the curtain—was creeping stealthily after her with a view of surprising her, say by putting his hands over her eyes, or by seizing her suddenly round the waist! His footsteps would be noiseless on the thick carpet. She could bear the horror of her situation no longer; she let the book drop from between her fingers, and made a rush for her dressing-room; but just as she got within a yard of the door, she stumbled, and came down on her knees. Before she could make even one effort to rise, she was grasped by the right wrist from behind, a cold hand was placed over her mouth, and a stern voice whispered in her ear: "Make the least noise and you are a dead woman!"

Next instant, her mouth was uncovered, and Cyrilla found herself lifted somehow on her feet. She turned to look at her assailant, and as her eyes met his, she shrank away from him as far as the iron grasp on her wrist would allow, and gave utterance to a low cry of terror: "Signor Pietro Fastini!"

"Even so, *carissima mia*," he said. "You do not seem pleased to see me. But pray resume your seat;" and still holding her by the wrist, he led her back to the easy-chair, into which he inducted her with a profound bow.

A tall, elegant-looking man, this Signor Pietro Fastini; olive complexioned; with black beard and moustache,

thin and silky; and large, dark, melancholy eyes. But in those eyes there was now an expression such as Cyrilla had never seen in them before—an expression that made her shiver with fright. He was dressed in full evening costume, except that he was without hat and gloves; while his long black hair, all blown and tangled by the night-wind, lent a touch of incongruity to his appearance, which no one could have failed to detect.

"Certainly, you do not seem pleased to see me," he repeated, losing his grasp of Cyrilla's wrist. "That, however, was hardly to be expected. Let us put it that I took you too much by surprise, and not that I am an unwelcome guest."

He gave utterance to a low, sneering laugh; then he drew up a chair close in front of Cyrilla, and sat down on it, and seemed to devour her with his large black eyes. "Cyrilla Thornhurst," he said, "do you know with what purpose I am here this evening?"

Poor Cyrilla's lips formed "No," but no sound issued from them.

"I am here to kill you," he said, speaking with the slightest possible foreign accent.

Cyrilla pressed her fingers to her eyes, and seemed to shrink back still further in the easy-chair. The Italian twisted the ends of his moustache, and watched her in grave silence.

"Oblige me by removing your hands from before your face," he resumed after a pause.—"Thank; that is better. Remember, I am here to kill, but not to torture. When the proper moment shall have come for carrying out my purpose, one brief pang will end everything."

He spoke in solemn, unimpassioned accents, without any trace of excitement either in manner or words, and almost as though he were the minister of some stern Fate, whose behests it was his duty to carry out, without having the power to alter them, and against which there was no possible appeal.

"Do you remember when and where we parted last?" he went on. "I know that you do, for such occasions are never forgotten by women. For months before that day, you led me on, little by little, till at last I was foolish enough to think that I had only to ask and to have. I did ask—with what result you know as well as I. You laughed at my love, and dismissed me forever with a foolish jest. I went away and strove to forget you, and to a certain extent I succeeded; for at that time I was just beginning to work out the details of my Grand Scheme, and all my time and attention were needed to perfect them. My grand scheme!" he went on, with a sudden change of tone, and an added brightness to his dark eyes. "It would have revolutionized the world, if only the world had been wise enough to receive it. But, like all great discoveries, I am a century before the age."

He began to pace the room rapidly, with knitted brows and the forefinger of one hand pressed to his chest, while his lips moved inaudibly; but always with a covert eye on Cyrilla, to see that she did not attempt to escape.

"Strange, strange!" he murmured. "No sooner did I begin to advocate the great project, than I was set down as a madman; and because I would not forswear my ideas, they shut me up with mad people—me, me!"

He burst into a fit of laughter, loud and shrill; and then drawing from one of his pockets a small box full of aciculated drops of which children are so fond, he placed two or three of them on his tongue and swallowed them like so many pills; and with that he went and resumed his seat by Cyrilla.

"It was while I was living with the mad folks," he went on, "that I made the acquaintance of my friend the mandarin, a gentleman twelve inches in height. Sometimes he would come into my bedroom through the key-hole, sometimes down the open chimney, or as often as not he would hop in at the open window, carrying his head under his arm. He used to perch himself on my table, and sit and nod at me by the hour together, and favor me with his advice on every conceivable subject. Oh, he was a most learned mandarin. It was he who persuaded me to come to this place, and kill you—and kill your husband. And I have sworn to do it! There was to be a grand party at the place where I have been residing for so many months. I dressed for it, of course, just to please the foolish creatures—you know what crazy whims those poor crazy wretches have some times—and in the confusion I escaped. See! I brought this as I came along, the handle is designed after the antique and pleased me hugely."

As he spoke, he drew from the pocket of his dress-coat a slender-cased poniard of dull, bluish steel, with a haft of bronze. Having extracted it from its case, he proceeded to wipe it carefully, almost tenderly, with his cambric handkerchief; while Cyrilla, coiled up in the easy-chair, watched his every movement with bright, quick-glancing eyes—the eyes of an animal brought to bay—that nothing escaped.

The little clock on the chimney-piece chimed the quarter before midnight.

"When that clock strikes twelve, Cyrilla Thornhurst, you will have lived your life."

He spoke with the quiet, unhesitating conviction of one of those who see before a foregone conclusion, from which it is impossible for him to swerve in the slightest degree.

"What have I done to deserve so terrible a fate at your hands?" burst out Cyrilla.

"You have wrecked the happiness of my life," said the Italian—"wrecked it utterly and irretrievably. That I might have forgiven you; but I have promised my friend the mandarin—for state reasons, which it would be a breach of confidence in me to reveal—to kill you, to kill your husband, and to kill your child. It is sufficient to state that your lives are required by the great Dog-star, whose hierophant I am. Ask me no further. The initiation would understand me at once; for there is a language of Fi-Fo-Fum to those whose eyes have been anointed with grease from the Great Bear. Your time in this world is reduced to ten minutes and five seconds."

With the putting away of the poniard for a time Cyrilla had taken her eyes off the Italian, and now sat with her chin sunk on her breast, and her hands tightly clasped,

eyes. But such as Cyrilla...  
 "That, how-  
 am an unwell-  
 and gloves;  
 tangled by the  
 appearance,  
 "see me," he re-  
 "That, how-  
 it that I took  
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 and; then he  
 sat down on  
 his black eyes,  
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 The Italian  
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 h knitted brows  
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 e to escape.  
 No sooner did I  
 I was set down  
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 ne!"  
 and shrill; and  
 small box full  
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 mes—and in the  
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 of his dress-coat  
 steel, with a half  
 its case, he pro-  
 sively, with his  
 and pity you. Some  
 of her life shall be  
 of yours; you shall  
 live. Together, we  
 will quit this hate-  
 ful England—together,  
 in my own sunny  
 clime, in Italy  
 the beautiful, we  
 will!"  
 The clock on the  
 mantel-piece chimed  
 midnight.  
 "There sounds the  
 knell of my doom!"  
 said Cyrilla,  
 with a mournful  
 sigh.  
 "It is the signal  
 that summons you  
 to a new life—to  
 a life of love, and  
 freedom, and hap-  
 piness!" said the  
 Italian. "It tells me  
 too," he added, "that  
 I have said other  
 work still left to  
 accomplish." He  
 laid a finger lightly  
 on her shoulder. "The  
 man who calls you  
 wife, the child  
 who calls you mother,  
 they must die."  
 Cyrilla's eyes  
 confronted those of  
 the madman steadily;  
 not the quiver of a  
 nerve betrayed the  
 feelings at work  
 within her.  
 Fastini began to  
 move towards the  
 door of the dressing-  
 room; Cyrilla caught  
 him by the button  
 and held him. He  
 turned on her in an  
 instant, a wild devil  
 of fury glaring  
 out of his eyes. "De-  
 you—dare—to sav-  
 that you care the  
 least in the world  
 about those two?"  
 he snarled out. He  
 had grasped her  
 firmly by the shoul-  
 der with one hand;  
 his other hand  
 was behind her,  
 and she felt the  
 sharp point of the  
 poniard prick  
 through her dress-  
 ing-robe into her  
 flesh as he asked  
 her the question.  
 "Care for either of  
 them?" exclaimed  
 Cyrilla with a  
 contemptuous laugh.  
 "Why should I care  
 for either of them?  
 It is not that. It  
 is this, as regards  
 the child: I do not  
 think—nay, I am  
 sure—that I could  
 not love you so  
 well as I do not: if  
 I knew that you  
 were guilty of

brooding over what she had just heard. To kill her husband and child! That would be a thousand times worse than death to herself. The dove might come any moment now—come stepping jauntily in through the French window, to be sprung upon by this madman, and stabbed before her eyes. "If only I could steady my mind to think," she kept repeating to herself. What was it she had heard and read about the peculiarities of mad people? If she could only bring it to mind!

The Italian was watching her narrowly from under his bent brows. Suddenly, with that abruptness which marked all his movements, he got up, and striding to the easel, flung back the sheet with which it was covered. He started at the sight of the picture; but next moment his poniard was out, and the canvas stabbed through in a dozen places. "Out! out! cursed likeness of a false-hearted fiend!" he exclaimed. "Oh that a soul so vile should lodge in a husk so sweet!"

If she could only bring it to mind! All at once, something seemed to catch her breath, and she pressed her hand to her heart for a moment, while a strange expression crept over her face, which subsided presently into one of her sweetest smiles. Then she half rose from the easy-chair, and turned her large soft eyes full on the young Italian. "Pietro mio," she said; and there was a world of meaning in her way of saying those two little words.

The dark frown vanished like a cloud from the face of the young Italian, and the light of passion faded from his eyes when he heard himself addressed thus; and he turned on Cyrilla a look half-bewildered, half-suspicious, and felt with one hand for the haft of his poniard. She was standing with her head a little on one side, smiling at him; and while he was looking, her rosy lips whispered "Come!" and as if it were a command impossible for him to disobey, he came towards her, timidly, cautiously, half-suspiciously, but still step by step nearer. As she sank back in the easy-chair, still with the same fixed smile on her face, her finger pointed to a low footstool a yard or two away. He understood her gesture, and pushing the footstool across the floor, he seated himself on it close by her chair. Again the same strange expression swept over her face as the sleeve of his coat touched her dress as he sat down; but the smile was back again next moment, and her voice took an accent as low and tender as that of any love-born Juliet when she next spoke to him.

"You naughty, naughty boy!" she said, and she pinched his ear playfully as she spoke; "I vow you nearly frightened me to death, creeping into the room in that stealthy way, for all the world like the villain in the melodrama. How was I to know it was you that was behind the curtain? And then, when I did see you, I declare you gave my nerves quite a shock. I had heard such strange stories about your being mad, and all that, you know, so that my fright can hardly be wondered at. My poor Pietro, what you must have suffered!"

Every nerve and fibre in the Italian's body seemed to thrill under the influence of those loving words and that angelic smile; but his eyes were still full of bewilderment, and his lips moved inaudibly for several moments before he spoke. "Why do you pity me?" he said at last. "How can you be glad to see me, when you know that I am here to take your life?"

Cyrilla sighed. "Can you not understand, my Pietro," she said, "that when life has become a burden, it does not seem such a very difficult thing to quit it?"

"Your life a burden!" he said incredulously. "In this pretty nest, and mated with the husband of your choice, your life ought to be very precious to you, Cyrilla."

"The opinion of the world!" said Cyrilla, with a mournful ring in her voice. "Is there not such a thing, Pietro, as being wedded to a man with whom you have nothing in common? You have read *Locksley Hall*, and you know what I mean without my saying more. Once I had a treasure in my grasp, but not knowing its value, I threw it carelessly away. Do you think that life to such a one can be a thing of much value?"

She turned away her face, and buried it in her handkerchief. Fastini fell on his knees before her. "Cyrilla, Cyrilla! say that you love me!" he cried. One of her hands was lying carelessly on her lap; he seized it, and covered it with passionate kisses. She did not repulse him; she only said gently, "You must not do that; you know that you have vowed to kill me."

"No, no!" he cried passionately, starting to his feet. "You shall not die! I will intercede for you with the mandarin. The Dog-star himself shall hear your story and pity you. Some of her life shall be sacrificed in place of yours; you shall live. Together, we will quit this hateful England—together, in my own sunny clime, in Italy the beautiful, we will!"

The clock on the mantel-piece chimed midnight.

"There sounds the knell of my doom!" said Cyrilla, with a mournful sigh.

"It is the signal that summons you to a new life—to a life of love, and freedom, and happiness!" said the Italian. "It tells me too," he added, "that I have said other work still left to accomplish." He laid a finger lightly on her shoulder. "The man who calls you wife, the child who calls you mother, they must die."

Cyrilla's eyes confronted those of the madman steadily; not the quiver of a nerve betrayed the feelings at work within her.

Fastini began to move towards the door of the dressing-room; Cyrilla caught him by the button and held him. He turned on her in an instant, a wild devil of fury glaring out of his eyes. "De you—dare—to sav—that you care the least in the world about those two?" he snarled out. He had grasped her firmly by the shoulder with one hand; his other hand was behind her, and she felt the sharp point of the poniard prick through her dressing-robe into her flesh as he asked her the question.

"Care for either of them?" exclaimed Cyrilla with a contemptuous laugh. "Why should I care for either of them? It is not that. It is this, as regards the child: I do not think—nay, I am sure—that I could not love you so well as I do not: if I knew that you were guilty of

shedding the blood of that innocent; and he at least is innocent."

"No blood, Cyrilla," he whispered—"only the pillow."  
 "No!" said Cyrilla loftily. "The man I love must be above a deed like that. To be the murderer of a smiling babe! Fugh!—You can go, Signor Fastini," she added coldly, stepping from before him. "The child is asleep in yonder room. When you have killed him, come back and kill me, if you don't wish to see the unutterable contempt with which I should then look upon you!" She pointed to the open door of the dressing-room as she spoke, and drawn up to her full height, stared steadily into the lunatic's eyes. He quailed under that fixed, stern gaze; he wavered; he whispered something to himself; and then with the air of a beaten hound, he stunk up to Cyrilla, and taking her by the hand humbly, he lifted it to his lips, and kissed it twice.

"Your pardon, Cyrilla," he said, "for having misunderstood you. The child, truly, is beneath my notice. Let him live."  
 "Spoken like my own Pietro," said Cyrilla, thawing suddenly into a very May-day of love and sunshine. "You were only jesting with me, I know."  
 "But he—the man who has caused you so much misery—your husband; you will not intercede for him," said Pietro, gloomily. "He—above all men—must die."  
 "So be it," said Cyrilla, with a little shrug of supreme indifference. Ten minutes past twelve! Theodore could not be long now. How her ears strained, how her heart beat at the slightest sound from without! If he were only to come now, he could hardly escape with life, unless she, Cyrilla, were to sacrifice her own life in the endeavor to save his. She was quite prepared to do that, she said to herself.

"But pray, tell me," she resumed aloud, "what plan you intend to adopt for carrying out your scheme of vengeance."  
 "As soon as I hear his footsteps, I shall hide behind those curtains," said the madman. "As he steps across the threshold I shall rush forth and strike him dead with my poniard."  
 "A pretty scheme—a very pretty scheme!" said Cyrilla, encouragingly. "But I think I know one still better—one that will avoid all bloodshed, which is objectionable in a lady's room."  
 "Tell it me," said the Italian, eagerly.  
 "When he comes in," said Cyrilla, "he will ask for a cup of coffee—he always does. Into his coffee I will put a few drops out of a certain vial which I have in my dressing-room. He drinks the coffee and five minutes later he is a dead man!"  
 "Good, good!" said the madman, rubbing his hands gleefully. "And then, when he is dead, I will cut off his head, and carry it to my friend the mandarin, and he will give me his magic ring—his cat's eye ring, that is worth a king's ransom; and we will sail across the seas, you and I together; and you will be mine, my own, forever! Say, shall it not be so?"  
 "I shall, my Pietro!" answered Cyrilla, boldly. "Ah! you don't know how much I shall love you. But we have no time to lose; Thornhurst will be here presently, and I must hide you at once."  
 "Yes—yes! behind the curtains," said Fastini, eagerly.  
 "No, not behind the curtains," said Cyrilla, "because the first thing Thornhurst will do after coming in will be to draw back the curtains and fasten the windows. Let me consider; where will be the best place to hide you?" She paused, and with her fingers on her lips, looked round the room, as if in search of a hiding-place. Fastini was holding her other hand, and pressing it now and then to his lips.

"I have it," she said at last. "Nothing could be better. You shall hide yourself in this old chest; and she ran across the room, laughing gaily, and dragging the Italian after her, and flung open the lid of the old carved chest. "It might have been put here on purpose," she said, still laughing. "See—you will have plenty of room; and there will be this advantage in hiding here, you will be able, yourself unseen, to witness the whole of my little drama from beginning to end—from your private box, you know. (A little pun there, is it not? I really won't let you kiss my hand any more.) You must just keep the lid open about a quarter of an inch—not more; and presently you will see Thornhurst come stepping in through one of these windows. You will see him kiss me—for the last time, you know, so you must not be angry. Then he will go round and fasten the windows; then he will yawn and stretch himself; and then he will seat himself in his easy-chair, and ask for his meerschaum and a cup of coffee. But you must not stir till you see his eyes close, and his head droop back on the chair. And now, sir, to your hiding place. If you love me, don't delay, for Thornhurst may be here any moment. No—not a single kiss now, but as many as you like afterwards. Why can't you tie those lanky limbs of yours in a knot? A little lower, please. So—that is better."

She was just lowering the lid of the chest gently over him when he struck it up suddenly with his arm. "Cyrilla," he said, "something whispers to me that my friend the mandarin would like me to do this deed myself. Perhaps the Dog-star!"

"Hush!" exclaimed Cyrilla with a start. "The king of the pelicans is coming this way. I hear his footsteps. Hide, hide!" She tried to press the lid down on him as she spoke; but his suspicions, ever on the alert, were roused in an instant, and with all his strength he strove to keep himself from being shut in, but his strength was of little avail in the position into which he then was. Cyrilla flung herself boldly on to the chest, and in spite of all the madman's efforts, little by little, inch by inch, the lid came down upon him, his power to struggle against it decreasing in proportion the closer it shut him in. Suddenly he changed his position, and before he could recover himself the lid had shut him in completely, and the same instant the iron staple in the body of the chest shot up through a slit in the lid. The moment she saw it, Cyrilla's instinct pointed out to her the only method by which Fastini could be retained a prisoner, for her bodily strength was all but exhausted. The iron bar that should have passed through the hole in the staple, and have kept the

chest fast shut, was broken away, and all that Cyrilla could now do was to push her thumb through the staple and use it as the bar had been used.

The footsteps on the gravel outside were coming nearer and presently, Theodore Thornhurst, cigar in mouth, and with a merrier twinkle than usual in his eye, stepped in through one of the French windows.

Not one moment too soon. "Saved! saved!" cried Cyrilla as her eyes met those of her husband, and then she sank fainting by the side of the chest. The painter was a cautious man as well as a brave one; he heard strange noises proceeding from the interior of the chest, and at the moment releasing Cyrilla's poor bruised thumb, he slipped his pocket-knife into its place. Then lifting his wife in his arms, he carried her into another room, and summoned the servants to her assistance. Armed with a revolver, he then went back to the chest, and lifted up the lid; but Fastini was half suffocated by this time, and was dragged out by Thornhurst more dead than alive.

Ultimately the Italian was recognized to the place from which he had escaped; but a long time passed before the painter's wife recovered thoroughly from the effects of that terrible hour.

**The Home.**

The old Athenians spent their money freely to build temples and erect statues, while their own homes were unattractive in appearance to the passer-by. We are glad our people do not follow their examples wholly. We judge of the people by their homes and not by the public buildings, for the home is, in a great measure, the index of the character of the home dwellers! This applies to the outside of the house as well as the inside. The man or woman who seeks to make the exterior of the house attractive as well as the interior, is as much a public benefactor as he who builds costly temples, though he may not be aware of it, nor have the public good at heart, but only be gratifying his own taste. However, the man who cares the most for his own home cares the most for the public good usually. A well kept house and yard is an educator, however humble it may be, and the man or woman who spends money in decorating his home because it is his home, is not so selfish as he might appear.—A. C., in *Vick's Magazine* for September.

**Cheerful Women.**

In marrying, men should seek happy women. They make a terrible mistake when they marry for beauty, or for talent, or for style. The sweetest wives are those who possess the magic secret of being happy under any and all circumstances. Rich or poor, high or low, it makes no difference, the bright little fountain bubbles up just as musically in their hearts. Nothing ever goes wrong with them—no trouble is too serious for them "to make the best of it." Was ever the stream of calamity so dark and deep that the sunlight of a happy face falling across its turbid tides would not awake an answering gleam? Why, the joyous tempered people don't know half the good they do. No matter how cross and crabbed you feel, no matter if your brain is full of meditation or "afflicting dispensations," and your stomach with medicines, pills and tonics; just get one of those cheery little women talking to you, and we are not afraid to wager anything she can cure you. The long drawn lines about the mouth will relax—the cloud of settled gloom will vanish, nobody knows where, and the first thing you know you will be laughing! Ah, what a blessing are these happy women! How often their little hands guide the ponderous machine of life, with almost an invisible touch! How we look forward through the weary day to their fireside smiles! No one knows, no one will ever know until the day of judgment reveals, how much we owe to these helpful, hopeful, uncomplaining, happy women.

### Minnie May's Department.

**MY DEAR NIECES.**—It is our duty at all seasons of the year, particularly during the tedious winters, to make our homes pleasant and attractive. The woman who has not a tasteful, inviting home, fails because she does not care enough about it to work for it.

Beautiful art can only be inspired by pure and beautiful thoughts, and unless some elements of taste and beauty are provided for the leisure hours at home, how can the young be expected to have pure thoughts, pure hearts and a love of refinement.

It is not necessary to have costly furniture, expensive wares, fine paintings and elegant draperies, to produce pleasant effects, but there are many ways of brightening and adorning rooms that are really inexpensive.

One important point is to have the colors harmonize, and have nothing too good to use. Give your apartments expression—character. Allow nothing to look isolated, but let all present an air of sociability. Why not have some elegance and beauty even in the humblest homes? For these do not belong alone to the homes of the rich. Nothing can aid in this desirable work as easily, cheaply and effectually as flowers; they are God's gift, and belong alike to rich and poor, giving gratification beyond price.

Encourage a taste for art as well as for nature—hang pictures on your walls, and dot here and there pretty ornaments, or bits of bright color in some form. We do not mean cardboard trash of bygone days; but in almost every household there are odds and ends which may, with very little additional expense, be converted into useful, pretty articles. "Economy is itself a great income," so we should learn to make the best of everything we have. As we have already told you, a little time and very little money will transform old and common articles of furniture into new and stylish ones, by the aid of ebonizing and bronze paints, etc., which process we have given in a previous number, and as to fancy and useful articles our Work Basket furnishes many good hints.

Help, dear girls, to make your homes so easy and cheerful, that if we visit you we may be joyous and free, feeling ourselves in harmony with our surroundings.

By brightening our homes we make others happy, and an effort in this direction lifts us above ourselves, and we are indeed blessed.

MINNIE MAY.

#### Work Basket.

**A DECORATIVE ACORN.**—If an acorn be suspended by a piece of thread within half an inch of the surface of some water contained in a hyacinth glass, and so permitted to remain without being disturbed, it will, in a few months, burst, and throw a root down into the water, and shoot upward its straight and tapering stem, with beautiful little green leaves. A young oak tree growing this way on the mantel shelf of a room is a very elegant and interesting object. I have seen several oak trees, and also a chestnut tree thus growing, but all of them, however, have died after a few months, probably owing to the water not being changed sufficiently often to afford them the

necessary nourishment from the matter contained in it.

**FANCY TABLE.**—A table for the parlor which is the fancy of the hour, and which is pretty enough to be popular for a long time, and to be more than a passing fancy, is made of any kind of well-seasoned wood. It may have a square or diamond shaped top; it has round legs, put on each corner; there are braces also that go from one leg to the other. A beautiful covering for one is dark green velvet; this is tacked down on the under side. If economy is no object, pretty silver clasps can be put on each corner. The legs are wound with alternate bands of the velvet and of cardinal satin ribbon; the ribbon is tied in a bow at each corner; the braces are bound with the velvet alone; the wood of which the table is made is nowhere exposed to view. This is a handsome table to stand in a bay window and to hold a small piece of statuary. The color of the velvet must of course be in accord with the general tone of the parlor, but the shades of olive, so popular now, are pretty with almost anything. There is a richness about the greens of the present day which brighter colors do not possess. —[Evening Post.

**TABLE COVERS.**—Very pretty covers for small tables may be made of various dark rich shades of double-faced Canton flannel. A handsome and effective one is thus described: A yard square of olive-green Canton flannel was button-holed all round the edge with gold-colored silk, the stitches being taken some little distance from each other. A band of garnet flannel three inches wide was placed at a distance of four inches from the edge of the cover. This band or border, before it was placed on the olive-green flannel, was first embroidered at intervals, little Japanese fans and butterflies alternating with each other. Each fan was about the size of a silver dollar; its outlines only were embroidered with stem-stitch with gold-colored silk, their handles being worked also with the same color. The butterflies were embroidered in various colors, the upper and lower wing generally of some bright, contrasting colors with gold spots. This border was fastened with feather-stitching on the table-cover; and in each corner of the cover were embroidered with crewels, groups of field flowers, daisies, and sunflowers in two corners, cat-tails and poppies in the remaining ones. One can buy beautiful designs of flowers, etc., already worked, which require only to be sewed neatly on your material; these can often be purchased most reasonably, and at a cost less than you could procure the materials for working them, thereby saving all the time it would take otherwise while embroidering the design. A table cover of garnet flannel with a band of old gold would be very pretty, and look very handsome with groups of daisies in each corner.

**GLOVE SACHET.**—For a glove sachet the newest and most useful shape is long, double the width, one-eighth longer than the length of your longest gloves. Take a piece of satin or silk of the size described, line it through with fine, soft surah, and divide it into three or four divisions, rather wider than your gloves; this division should be embroidered, and a piece of sarsenet ribbon or elastic placed across the middle. Have some very fine cashmere flannel, and cut two pieces in thirds of the full

width of your material and the same length. Sew this down, when you have finished it with a little embroidery, about half an inch from each edge of the satin. You require strings to tie it when closed. The gloves are placed under the elastic, light colors together, dark colors, and so on, and the cashmere laid over them, to prevent their spotting. The sachet is then folded up and tied. The sachet can be made of more inexpensive material, if desired, and be equally useful. To preserve kid gloves and cause them to retain their freshness, the fingers should always be pulled out straight, after wearing, and they should never be rolled together in a ball.

**CROCHET SLIPPERS.**—Work in two colors, say light and dark blue; one skein of the light and a half skein of dark will be sufficient for a medium-sized pair; the directions are for a No. 3 cork sole.

Begin with the dark, with ten chain; turn.

1. Miss one chain, four double, three double into next stitch, four double, one chain to turn.
2. Five double taken at the back of each stitch (work the whole shoe in this stitch), three double in next stitch, five double, one chain to turn.
3. Six double, three double in next stitch, six double, one chain to turn.
4. Seven double, three double in next stitch, seven double, one chain to turn.
5. Eight double, three double in next, eight double, one chain to turn.
6. Nine double, three double in next, nine double, one chain to turn.
7. One row of double crochet without increase. Now put in the light blue and work the rest of the shoe with it.
8. Ten double, three double in next stitch, ten double, one chain to turn.
9. Without increase, one chain to turn.
10. Eleven double, three double in next, eleven double, one chain to turn.
11. Without increase.
12. Twelve double, three double in next, one chain to turn.
13. Without increase.
14. Thirteen double, three double in next, one chain to turn.
15. Without increase.
16. Fourteen double, three double in next, fourteen double, one chain to turn.
17. Nine double only, one chain to turn.
18. The same as last.

As this forms the side of the slipper, repeat until it is long enough to go all the way around the sole, and join it to the opposite side of the front. It is very simple.

**TAMBOURINES** are much used now for holding letters on a writing table which are ready to be posted. They are simply tied with colored ribbons and painted. They are also used for work-baskets, padded and lined and fitted with pockets. When painted they are frequently suspended on the wall by means of a long ribbon. —[Dorcas Mag.

**A PRETTY PINCUSHION** is made by covering a thick cushion of medium size with satin, one of the dark, warm shades of red is most effective, if it is not necessary to match a color in the other decorations in the room. Cut a triangle of sheer white muslin, and cover one corner with it; along the bias edge place a

jabot of lace, and on the other corner a handsome bow of wide satin ribbon. Or let the foundation be of black satin, with a triangle of bright orange across the corner, and a bow of ribbon the same shade on the opposite corner, with a jabot of wide lace covering the edge of triangle and fastened all around the edge of the cushion.—[Dorcas Mag.]

**CHILD'S TABLE-BIB.**—A decided improvement on the old-fashioned bibs for children is made of a towel. Purchase one the desired length to make two bibs, cut it in half and hollow out at the top. It is best to get the towel all white, and work a fancy border in colored worsteds. Bind the neck with white tape, and cat-stitch with color. Be careful not to get the towels too wide, or the bib will always be over the hands.

**TO MAKE PRETTY MATS.**—Take the piece of worn out ingrain carpet that you have thrown aside for the "ragman;" cut into narrow strips lengthwise (crosswise won't do.) It is not necessary to sew the strips together, though some may be only a few inches long. After all are cut take it to a carpet-weaver and request him to knit a mat, "hit or miss," the same as he would a rag carpet. A very pretty stair and hall carpet may be made in the same manner, and has quite the appearance of the Persian carpets of present use.

#### Answers to Inquiries.

**EVERGREEN.**—Hyacinths for the garden should be planted in September, October or November, and before the heavy frosts of winter. Cover the beds with a good dressing of leaves, five or six inches in depth. Over these throw a little brush, earth, or manure, to prevent blowing off. In spring rake off the covering, about half at first, and after waiting a week remove the remainder.

**T. M. E.**—1. The ink spots can be removed from the leaves of your book by using a solution of oxalic acid in water. 2. If you fill a large stone bottle with boiling water and put into your beds, pressing the bolsters and pillows around it in a heap, you need not be in fear of any dampness to cause colds.

**MAGGIE.**—1. You can renovate your old waste paper basket by crocheting a cover of coarse twine, and stiffen with glue, and stretch over the basket to give it shape. Then, if desired, paint it black and decorate with bright satin ribbon. 2. An exceedingly pretty scarf could be made for your chair of a piece of corn-colored pongee or surah satin, a yard wide or more, according to the size of your chair. Finish each end with a pretty outline pattern, in olive brown, and maroons. Catch together in the center with a bow of wide satin ribbon of the same color.

**W. P.**—There is nothing improper in corresponding with a lady older than yourself, providing she is willing—in fact, it might be a great benefit to you, providing she be a good, true woman.

**COUNTRY COUSIN.**—Kerosene oil is excellent for black walnut; rub it on with a piece of flannel, and let it evaporate, and then polish with dry flannel or silk.

**ANXIOUS MOTHER.**—We advise you, as all mothers should, to share your daughter's studies; it would be a great benefit to both,

especially the latter, and recommend you to get a few nice books of travel, which will be both interesting and instructive, instead of trying to devour histories, which are rather dry reading for most young minds. Never be afraid or ashamed to consult the dictionary for information on words that you do not understand, for there is no better way of learning.

**RUBY.**—When a young lady is accompanied to her own church by a lady and gentleman, she should walk up the aisle first, but stand aside at the pew door to allow her guest to take the corner seat unless she has previously found that the lady would prefer the middle seat.

#### Recipes.

**ARROWROOT FOR INVALIDS.**— $\frac{1}{2}$  pint milk; 1 dessert spoonful of arrowroot; sugar to taste; flavor with lemon peel. Take care to get the very best arrowroot, as many imitations are sold; mix a dessert spoonful with a little cold water until it is quite smooth. Boil half a pint of milk, pour it on the arrowroot, while boiling, stirring it all the time.

**CHICKEN BROTH.**—Take an old fowl, and stew it to pieces, with a couple of onions; season lightly with pepper and salt; skim and strain it.

**BEEF TEA.**—Very nice beef tea is made by cutting up tender, juicy beef into pieces about one inch square; put into a strong bottle, cork tightly and set in a kettle of cold water; boil about two hours. The fluid thus obtained will be the pure nutriment of the meat, and the tonic effects are powerful.—[Exchange.]

**POTATOES BOILED, IRISH METHOD.**—Wash, leaving skins on, and throw into boiling water; as soon as a fork can be easily thrust through them, dash some cold water into the pot, let stand two minutes, pour off the water, half remove the pot lid, and let them remain over a slow fire until the steam is evaporated; then peel and serve in an open dish. They will be sweet, dry and mealy.

**KEEPING CORNED-BEEF.**—Cut up the meat in suitable pieces, pack in a cask or vessel, then make a brine as follows: To one gallon of water add one and a half pounds of salt, one ounce of saltpetre; bring the brine to a boil, and then, while boiling hot, pour on the meat; it will keep as much as it will cover. The meat must be kept entirely under the brine. In the spring again boil, skim and pour it on the meat while hot. Some add one pound of sugar and one ounce of saleratus to 100 pound of corned beef.

**A SAND BAG.**—A sand bag is one of the most serviceable things that can be had in a sick-room. Get some clean, fine sand, dry it thoroughly in a kettle in the stove, make a bag about eight inches square of flannel, fill it with the dry sand, sew the opening carefully together, and cover the bag with cotton or linen cloth. This will prevent the sand from sifting out, and will also enable you to heat the bag quickly by placing it in the even, or even on the top of the stove. After once using this, you will never again attempt to warm the feet or hands of a sick person with a bottle of hot water or a brick. The sand holds the heat a long time, and the bag can be tucked up to the back without hurting the invalid. It is a good plan to make two or three of the bags, and keep them ready for use.

**CELERY.**—Celery can be kept for a week or longer by first rolling it up in brown paper, then pin it up in a towel and keep it in a dark place, and keep as cool as possible. Before preparing it for the table place it in a pan of cold water, and let it remain for an hour. It will make it crisp and cold.

**TEA.**—Tea is best made in an earthenware tea pot, which should be kept dry, for if allowed to remain damp after use it becomes musty. The water should always boil when the tea is added. Tea is not wholesome taken on an empty stomach.

**BOSTON BROWN BREAD, No. 1.**—Pour sufficient boiling water over three cups of corn meal to thoroughly scald it. When sufficiently cool, add four cups of rye meal, half a cup of molasses, half a cup of liquid yeast, and a teaspoonful of salt. Let stand until well risen, then steam about five hours.

**BOSTON BROWN BREAD, No. 2.**—Three cups of corn meal, two cups of rye flour, three cups of sour milk, one cup of New Orleans molasses, one cup of raisins, two even teaspoonfuls salt, three even teaspoonfuls soda. Sift the meal and flour together; mix the molasses, sour milk, salt and soda—the soda dissolved in a little warm water, and, while the mixture is effervescing, pour it into the flour, beating with a wooden spoon until smooth. Grease a pudding boiler, and pour in the batter, a little at a time—adding the raisins in layers—until the mold is filled to within about two inches of the top. Cover closely, place in a kettle of boiling water, and cook four or five hours, adding more boiling water as that in the kettle boils away.

**TEA RUSK.**—One pint of flour, one teacupful of sweet milk, one tablespoonful of sugar, three of melted butter, one teaspoonful of soda, two of cream of tartar, two eggs, and a pinch of salt.

**SAUCE FOR BOILED FISH.**—To one teacup of milk, add one teacup water; put it on the fire to scald, and when hot stir in a tablespoon of flour, previously wet with cold water; add two or three eggs; season with salt and pepper, a little celery, vinegar and three tablespoons butter. Boil four or five eggs hard, take off the shells, and cut in slices, and lay over the dish. Then pour over the sauce and serve.

**BEEF LOAF.**— $3\frac{1}{2}$  lbs. veal or beef, minced very fine and uncooked; 4 large crackers, crushed very fine; 1 egg, 1 cup milk, butter size of an egg, 1 teaspoon salt, 1 of pepper; mix in shape of a loaf; and bake in a slow oven  $2\frac{1}{2}$  hours, basting often; to be eaten cold; very nice for tea or lunch.

**TO FRIGCASEE OYSTERS.**—Take one quart of oysters, pour over them their own liquor, but drain it off, do not use it; mix one teaspoonful of flour, a piece of butter the size of a walnut, a saltspoonful of salt, the same of pepper, and three cupfuls of milk; have ready a baking dish, put in a layer of oysters, cover with some of the mixture, then another layer of oysters, and so on till all are used; then for the top layer cover with fine bread crumbs; bake twenty minutes.

**PRINCESS CAKE.**—One cup of butter, two of sugar, three eggs, three-quarters of a cup of milk, four cups flour, one pound of stoned raisins, three and a-half teaspoons of baking powder, lemon flavoring.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES,—Among my various friendly letters to you, I do not remember having attempted to impress upon you the danger which you are in of acquiring and nourishing prejudices or views of a narrow-minded or ungenerous character. Young persons who remain in a state of comparative ignorance from want of proper mental education, are usually filled with the most absurd notions. One of the first prejudices which children acquire is one of self-love. It is the notion that they are the best, the cleverest, the most knowing, and, if chastised for misconduct, the worst-used, of all boys and girls. His next prejudice is that the place where he was born and dwells is superior in excellence to all other places in the country. Another great leading prejudice is that the country to which he belongs is the greatest and most-to-be-lauded country in the whole world; he believes there is no country like it; that it could fight and beat any two nations on the globe; that the people of other countries are a poor, shabby, ignorant race, not nearly so strong or so wise as the people of his country, and only fit to be despised. Now, my dear young friends, all this is the result of sheer narrow-mindedness and want of knowledge. If those who think so foolishly would reflect a little, or read a little, or know a little, more of mankind, they would perceive that such notions are both weak and absurd. They would know that there are boys and girls far cleverer and much worse used than themselves; they would know that the place of their birth or residence is not only no better than hundreds of other places, but perhaps very much inferior in many points.

It is my wish that you should habituate yourself to the practice of suspending your opinions of any body, of any class, or of the people of any country, till you have read a good deal, gained experience of the world, or have had just cause for forming a mature judgment. By reading the works of travellers and historians, and comparing the facts detailed one with another, you will, I have no doubt, purify your minds from many such prejudices as I have here exemplified. Without reading, you will remain in a hopeless state of ignorance. Before closing, I want to remind you that next month's puzzles will be the last counted in this year's work, so I hope you will send some really good ones for Xmas.

UNCLE TOM.

Puzzles.

[1.—SYNCOPIATIONS.

- A relation = An insect.
- A giver = An entrance.
- Reality = Plump.
- A large spoon = To load.
- A weapon = To fight.
- Small measures = Small, useful articles.
- To bend = To impede.
- A coin = A stamp.
- In these syncopations you may detect the name of one we love and respect.

ADA ARMAND.

2.—NUMERICAL ENIGMA.

- My 4, 5, 11, 18, is a wharf.
- My 9, 3, 2, 6, 12, means weak.

My 10, 8, 11, 17, means to ascend.  
My 4, 16, 2, 13, 12, is a kind of bird.  
My whole is a statesman. HENRY REEVE.

3.—ENIGMA.

My 1st is in sabre, but not in gun.  
My 2nd is in three, but not in one.  
My 3rd is in language, but not in speech.  
My 4th is in orange, but not in peach.  
My 5th is in king, but not in queen.  
My 6th is in scarlet, but not in green.  
My 7th is in document, but not in check.  
My 8th is in mouth, but not in neck.  
My 9th is in canter, but not in trot.  
My 10th is in blemish, but not in blot.  
My 11th in harrow, but not in plow.  
My whole is a vain, boasting fellow.

FAIR BROTHER.

4.—RIDDLE.

A word of five letters, take four away and leave five. ALICE M. HUME.

5.—DIAMOND.

A consonant, a deer, a bird, prospers, a famous outlaw, elders, reading matter, an enemy, a consonant. EDMUND PEPPER.

6.—ILLUSTRATED REBUS.



7.—DIAMOND.

A consonant, an animal, a boy's name, a leader in the N. W. rebellion, a color, a vehicle, a consonant. MARY BLACK.

8.—TRANSPOSITION.

I lhod ti erut eawther' felba  
I lefe ti hwne i rossow osmt  
Ist terteb ot vahe oeldv nad solt,  
Ahtn renev ot veah evlod ta la.

MAGGIE F. ELLIOTT.

9.—DROP-VOWEL PUZZLE.

Th - b - st m - d - c - n -  
J - y - nd t - mp - r - nc - - nd r - p - s -  
Sl - m th - d - - r - n th - d - ct - rs n - s -

HARRY WOODWORTH.

10.—DOUBLE ACROSTIC.

A shell fish, a painter, a well known bird, a snare, a small river in Europe, greenness, an open surface. HARRY A. WOODWORTH.

11.—WHAT I KEEP IN MY AVIARY.

A heavenly body and a kind of fish.  
Equality and decay; near, a metal, and a storm.  
To punish, mean, and inclination.  
To fight, and a quarrel.  
A girl's nickname, and a kind of pastry.

ADA ARMAND.

Answers to October Puzzles.

- 1.—The fool who loves the law too well, Will lose the nut and gain the shell.
- 2.—An honest yeomanry is our country's pride, When once destroyed can never besupplied.
- 3.—William the Conqueror.

- 4.— Home—hoe—M.  
Hoist—host—I.  
Halt—hat—L.  
Peter—peer—T.  
Cance—cane—O.  
Many—may—N.

5—How long we live not years, but actions tell,  
That man lives twice who lives the first life well.

6.—London, Toronto, Chatham, Quebec, Kingston.

7—  
A  
A M Y  
S P E A R  
M E R I C A  
W H I T E  
A C T  
A

8—This life is not so bad a life  
As some would choose to make it;  
But if you are pressed by care and strife,  
Just firmly stand and take it.

9—New-s-paper.

10— P A N  
A C R E  
I R I S  
N E S T

11—By ignorance is pride increased;  
They most assume who know the least.

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

E. W. Hutcheson, Chas. H. Foster, Wm. Webster, Jane L. Martin, Mary Morrison, Wm. A. Laidman, Edmund Pepper, Tillie Hodgins, Wm. Jackson, Georgia Smith, Alice Mackie, Lottie A. Boss, Mary Black, Robt. Kerr, Thos. J. Lindsay, Robt. J. Risk, Alice M. Hume, Will Thirlwall, Ellen D. Tupper, Frank L. Milner, Henry Reeve, Joseph Allen, Ada Armand, Robt. Wilson, I. J. Steele, Emma Dennee, Edward A. Fairbrother, Becca Lowry, Henry Willson, J. E. Bennet, Chas. Simpson, Agnes Leslie, Minnie Smith, G. C. Gordon, Sherman Fortner, Henry Willson.

Spurgeon tells an amusing story of the old lady who started up when her grandson was about to take her umbrella, exclaiming,—

"No, you don't! I've had that umbrella for about twenty-three years, and it's never been wet yet; and you aint going to begin!"

There is a church in Michigan which has been struck by lightning a dozen times, and now, when the preacher shows signs of getting long-winded and passing from his seventhly to an eighthly, the organist slyly imitates the sound of approaching thunder on the pedals. The way that the preacher dives into the conclusion, says the *Independent*, and rushes through it and starts the Doxology, is a caution.

Perseverance.—If you wish to do good, do good; if you wish to assist people, assist people. The only way to learn to do a thing is to do it; and that implies, before you learn to do wrong—you will make blunders, you will have failures; but persevere, and in the end you will learn your lessons, and many other lessons by the way.

**Make Childhood Sweet.**

Wait not till the little hands are at rest,  
Ere you fill them full of flowers;  
Wait not for the crowing tuberose  
To make sweet the last sad hours;  
But while the busy household band,  
Your darlings still need your guiding hand,  
Oh! fill their lives with sweetness!

Wait not till the little hearts are still,  
For the loving look and phrase;  
But while you gently chide a fault  
The good deed kindly praise;  
That word you would speak beside the bier  
Falls sweeter on the living ear;  
Oh! fill young lives with sweetness.

Ah! what are kisses on clay cold lips  
To the rosy mouth we press,  
When our wee one flies to a mother's arm,  
For love's tenderest caress!  
Let never a worldly babble keep  
Your heart from the joy each day should reap,  
Circling young lives with sweetness.

Give thanks each morn for the sturdy boys,  
Give thanks for the fairy girls;  
With a dower of wealth like this at home,  
Would you rifle the earth for pearls?  
Wait not for death to gem love's crown,  
But daily shower life's blessings down,  
And fill young hearts with sweetness.

Remember the homes where the light has fled,  
Where the rose has faded away;  
And the love that glows in youthful hearts,  
Oh, cherish while you may!  
And make your home a garden of flowers,  
Where joy shall bloom through childhood's  
hours,  
And fill young lives with sweetness.

**The Number Nine.**

The number 9 possesses some remarkable properties. If the nine digits, 1, 2, 3, 4, 5, 6, 7, 8, 9, be added together the sum will be 45, which is equal to five times nine, and the sum of the digits of their sum, 4 and 5, is nine. If any number is subtracted from another, having the same digits in a different order the remainder will be divisible by 9, and the sum of the digits of the remainder will also be divisible by 9. Subtracting 2,967,634 from 7,364,629, there remains 4,396,995. The sum of the digits, 4, 3, 9, 6, 9, 9, 5, is 45, which is divisible by 9. If any number be multiplied by 9, the sum of the digits or figures of the product will be divisible by 9. Nine times 43,780,135 is 394,021,215; the sum of the digits of the product is 27, a multiple of 9. If a number be subtracted from another having the same digits in a different order, and one of the digits of the remainder erased, it can be found in the following manner: Add together the figures of the remainder that are left, divide the sum by 9, subtract the figure that remains after dividing by 9, from 9, and the last remainder will be the digit or figure sought. If there was no remainder 0 or 9 was erased.

Ask some one to write down a number and subtract from it another composed of the same digits in a different order, without letting you see either of them. Tell him you want all the figures of the remainder but one. By the above rule you can soon find the figure you have not seen. The feat will appear quite mysterious to the uninitiated. Here is an example: Subtracting 156,324 from 231,456, the remainder is 75,132. The sum of the figures 7, 5, 1, 3, is 16. Divide 16 by 9, we have a remainder of 7. Seven from 9 leaves 2, the other figure.

**Number One.**

[From Hood's Comic Annual, 1830.]

"It's very hard! and so it is,  
To live in such a row,  
And witness this, that every Miss  
But me has got a beau.  
For Love goes calling up and down,  
But here he seems to shun:  
I'm sure he has been ask'd enough  
To call at Number One!

"I'm sick of all the double knocks  
That come to Number Four!  
At Number Three I often see  
A lover at the door;  
And one in blue, at Number Two,  
Calls daily like a dun—  
It's very hard they come so near,  
And not at Number One!

"Miss Bell, I hear, has got a dear  
Exactly to her mind,  
By sitting at the window pane  
Without a bit of blind;  
But I go in the balcony,  
Which she has never done,  
Yet arts that thrive at Number Five  
Don't take at Number One!

"Tis hard, with plenty in the street,  
And plenty passing by—  
There's nice young men at Number Ten,  
But only rather shy;  
And Mrs. Smith across the way  
Has got a grown-up son,  
But la! he hardly seems to know  
There is a Number One!

"There's Mr. Wick at Number Nine,  
But he's intent on pelf;  
And, though he's pious, will not love  
His neighbor as himself.  
At Number Seven there was a sale—  
The goods had quite a run!  
And here I've got my single lot  
On hand at Number One!

"My mother often sits at work,  
And talks of props and stays,  
And what a comfort I shall be  
In her declining days!  
The very maids about the house  
Have set me down a nun—  
The sweethearts all belong to them  
That call at Number One!

"Once only, when the flue took fire,  
One Friday afternoon,  
Young Mr. Long came kindly in,  
And told me not to swoon.  
Why can't he come again without  
The Phoenix and the Sun?  
We cannot always have a flue  
On fire at Number One!

"I am not old! I am not plain!  
Nor awkward in my gait!  
I am not crooked like the bride  
That went from Number Eight!  
I'm sure white satin made her look  
As brown as any bun!  
But even beauty has no chance,  
I think, at Number One!

"At Number Six, they say, Miss Rose  
Has slain a score of hearts.  
And Cupid, for her sake, has been  
Quite prodigal of darts,  
The imp they show with bended bow—  
I wish he had a gun!  
But if he had, he'd never deign  
To shoot with Number One!

"It's very hard! and so it is,  
To live in such a row!  
And here's a ballad-singer come  
To aggravate my woe;  
O take away your foolish song  
And tones enough to stun—  
There is 'nae luck about the house,  
I know, at Number One!"

**The Little Ones' Column.****Human Nature.**

A TRUE INCIDENT.

Two little children five years old,  
Maggie the gentle, Charley the bold;  
Sweet and bright and quaintly wise,  
Angels both in their mother's eyes.

But you, if you follow my verse shall see,  
That they were as human as human can be,  
And had not yet learned the maturer art  
Of hiding the "self" of the finite heart.

One day they found in their romp and play  
Two little rabbits soft and gray—  
Soft and gray, and just of a size,  
As like each other as your two eyes.

All day long the children made love  
To their dear little pets—their treasure trove,  
They kissed and hugged them until the night  
Brought to the conies a brief respite.

Too much fondling doesn't agree  
With the rabbit nature, as we shall see;  
For ere the light of another day  
Had chased the shadows of night away

One little pet had gone to the shades,  
Or let us hope to perennial glades,  
Brighter and softer than any below,—  
A heaven where good little rabbits go.

The living and dead lay side by side,  
And still alike as before one died;  
And it chanced the children came singly to view  
The pets they had dreamed of all the night  
through.

First came Charlie, and with sad surprise  
Beheld the dead with streaming eyes;  
However, consolingly, he said,  
"Poor little Marie"—her rabbit's dead.

Later came Marie, and stood aghast;  
She kissed and caressed it, but at last  
Found breath to say, while her young heart  
bled,  
"I'm so sorry for Charlie—his rabbit's dead."

**Agricultural Courtship.**

A potato went out on a mash,  
And sought an onion bed;  
"That's pie for me!" observed the squash,  
And all the beets turned red;  
"Go 'way!" the onion, weeping, cried,  
"Your love I cannot be;  
The pumpkin be your lawful bride;  
You cantelope with me."

But onward still the tuber came,  
And laid down at her feet;  
"You cauliflower by any name,  
And it will smell as wheat;  
And I, too, am an early rose,  
And you I've come to see,  
So don't turn up your pretty nose,  
But spinachat with me!"

"I do not carrot at all to wed,  
So go, sir, if you please!"  
The modest onion meekly said,  
"And lettuce, pray, have peace!  
Go, think that you have heaven seen  
Myself, or smelled my sigh;  
Too long a maiden I have been  
For favors in your rye!"

"Ah, spare a cuss!" the tuber prayed;  
"My cherrished bride you'll be!  
You are the only weeping maid  
That's currant now with me!"  
And as the wily tuber spoke,  
He caught her by surprise,  
And giving her an artichoke,  
Devoured her with his eyes.

—Selected.

Commercial.

THE FARMER'S ADVOCATE OFFICE,  
London, Ont., Nov. 2, 1885.

Another month of comparatively fine weather is leaving the farmers no excuse nor reason to complain that the weather has retarded the fall work. The roads are good, but the movement of grain has not been as free as it might be, nor what the merchants would like to see. Farmers are slow to take in the situation or realize the fact that the wheels of trade and commerce depend so much upon them, and that all lines of business and manufacturing depend largely upon a bountiful harvest and free marketing of the same.

WHEAT.

The market for this article has fluctuated somewhat the past month, but the range of prices are now much the same. The movement of wheat in the Western States has been pretty free, while with us it is only moderate, and the export demand does not stimulate the buyers to any exertions to buy for through shipments.

The total quantity of wheat in America is now about 85,000,000 bushels less than a year ago; the visible supply being about 15,000,000 greater than a year ago, would indicate that the invisible supply is 100,000,000 smaller than then.

The following shows the exports of wheat and corn, including wheat in flour, from all American ports and Montreal, from September 1 to October 10, for the years named:

	Wheat.	Corn.
1885..	8,016,000	5,366,000
1884..	16,359,000	1,970,000
1883..	15,156,000	6,940,000
1882..	25,157,000	875,000
1881..	17,443,000	5,545,000
1880..	25,629,000	12,268,000
1879..	43,662,000	9,999,000

The fall of exchange and the low price of silver, are said to be stimulating the export of wheat from India. Enormous shipments are pending. Vessels have already been chartered for the shipment of 100,000 tons before January.

A leading Chicago dealer says: "October is the month of big receipts, and it is not reasonable to suppose the advance came to stay. Still, whether Europe takes hold or not, I believe the grain will all be wanted, especially as the south is already drawing heavily upon the northwest, their home deliveries not being equal to their demands for bread. Along in the early months of 1886 I look for a permanent improvement in values."

LIVE STOCK.

The British live stock markets have been very depressed, and prime steers have been sold at 10c. per lb. The decline in the past six weeks has been 4 cents per lb.

The Montreal Gazette reports the market as follows:

"Our cables to-day regarding the British cattle trade are the worst yet by a long way, indicating a most deplorable state of affairs for which it is difficult to account, and quoting an extremely low range of values. To sell at all at any price during the past week has been a most disheartening task, and the money dropped by holders must foot up a very large total. It is hardly too much to say that cattle are being given away, when prime Canadian steers can command only 10c. per lb. in the Liverpool market. The decline in six weeks has been four cents per pound. Receipts of cattle from Canada and the United States have continued heavy, but is more satisfactory to note that the receipts from other quarters have fallen off considerably, despite which, however, the markets have been in the last stages of demoralization, and values have declined one cent per pound during the week. At Liverpool to-day trade was extremely dull under heavy offerings and a weak, dragging demand. Sellers were forced to accept buyers' prices or hold, as the latter completely controlled the market, and bought at any figure they chose to name. Prime Canadian steers sold at 10c.

per lb., which is a phenomenally low price. Fair to choice grades were at 9½c. poor to medium at 8½c., and inferior and bulls at 5c. @ 6½c. The sheep trade has remained unchanged. Best sheep at Liverpool to-day were at 13c., secondary qualities at 11c. @ 12c., merinos at 10½c. @ 11½c., and inferior and rams at 8c. @ 9½c. All the foregoing quotations are calculated at 480 in the £.

The following were the exports of live stock from the port of Montreal for the week ended October, 24, with comparisons:

Per	To	Cattle.	Sheep.
Carthaginian.....	Glasgow.....	745	....
Dominion.....	Bristol.....	335	292
L. Winnipeg.....	Liverpool.....	152	252
Total.....		1,232	544

Last week.....	1,385	1,219
Corresponding week, 1884.....	2,007	2,426
Corresponding week, 1883.....	306	1,210
Corresponding week, 1882.....	508	855
Corresponding week, 1881.....	911	1,722
Corresponding week, 1880.....	422	698
Corresponding week, 1879.....	108	....
Corresponding week, 1878.....	43	....
Total to date.....	58,035	37,402
To same date, 1884.....	53,540	52,749
To same date, 1883.....	47,825	80,710
To same date, 1882.....	26,938	57,991
To same date, 1881.....	36,277	52,312
To same date, 1880.....	37,944	68,719
To same date, 1879.....	20,868	60,904
To same date, 1878.....	13,953	25,324

APPLES.

The crop of apples (winter) in some sections is very heavy and very fine. Buyers are paying about \$1 per barrel for export.

A London, Eng., circular, dated Oct. 17th, quotes:-

Kings @ 17s. to 19s. per bbl.
Spitz @ 18s. to 18s. 6d. per bbl.
Baldwins @ 13s. to 16s. 6d. per bbl.
Greenings @ 11s. to 13s. per bbl.
Other sorts 12s. to 15s. per bbl.

At the auction rooms, Covent Garden, some choice lots of Baldwins sold as high as 18s.

The following were the exports of apples from the port of Montreal for the week ended October 24:-

Per	To	Brls.
Concordia.....	Glasgow.....	277
Barcelona.....	Bristol.....	130
Carthaginian.....	Glasgow.....	4,897
Circassian.....	Liverpool.....	3,556
Sarnia.....	Liverpool.....	587

Total.....	9,447
Last week.....	3,462
Total to date.....	21,775

The total shipments for the week ended Oct. 24th, from Montreal, New York and Boston to British ports, was 54,000 bbls., and for this season up to date named 178,700 bbls. Same date last year, 185,759 bbls. Of this quantity 21,800 has been shipped from the port of Montreal, 128,000 from New York, and 26,500 from Boston and 2,000 from Halifax.

CHEESE.

The cheese market has ruled very quiet for the past two weeks, and the edge seems to be off again; whether it is only a sort of breathing spell or halt to consider matters well before the final rush for the season is made, remains to be seen. There don't seem to be much disposition on the part of importers to lay in any stocks, as the losses of last year are still too fresh in remembrance. By far the greater portion of the September make east of Toronto is moving, and will probably be all moved by the first of November. West of Toronto the August make is pretty well gone, with September and October cheese still in the factories, with considerable sold. Taken all through the make of fall cheese cannot be considered excessive, but it remains to be seen whether the market can take it or not. Factory men who have not sold, are holding at 10½c. and 11c. for September and October cheese; whether they will succeed in getting this figure remains to be seen.

BUTTER.

The butter market is very quiet and there is no demand for any but the very finest grades. The export demand for dairy goods is very limited, and unless producers shade their prices very materially a good deal of the supply held in the country will have to remain where it is for some time. Creamery is also held too high to admit of business. Montreal quotations are as follows:-

Creamery, choice.....	22	@	23
Creamery, fair to good.....	20	@	21½
Townships, finest.....	19	@	20
Townships, fair to good.....	15	@	18½
Morrisburg.....	14	@	19
Brockville.....	14	@	19
Western.....	12	@	15

PRICES AT FARMERS' WAGONS, TORONTO:

	Oct. 30, 1885.
Wheat, fall, per bushel.....	\$0 88 0 00
Wheat, spring, do.....	0 88 0 00
Wheat, large rolls, do.....	0 75 0 75
Wheat, goose, do.....	0 55 0 35
Barley, do.....	0 34 0 38
Oats, do.....	0 60 0 62
Peas, do.....	0 60 0 62
Rye, do.....	1 00 1 25
Beans, do.....	5 75 0 00
Dressed hogs, per 100 lbs.....	3 25 4 25
Beef, forequarters.....	5 50 7 00
Beef, hindquarters.....	6 00 7 00
Mutton, carcass.....	14 00 17 00
Hay, timothy.....	11 00 13 00

PRICES AT ST. LAWRENCE MARKET, TORONTO.

	Oct. 30, 1885.
Chickens, per pair.....	\$0 45 0 55
Ducks, do.....	0 50 0 75
Butter, pound rolls.....	0 19 0 20
Butter, large rolls.....	0 14 0 16
Butter, inferior.....	10 12
Lard.....	10 00
Bacon.....	9 12
Turkeys.....	0 75 1 50
Geese.....	0 70 0 90
Cheese.....	0 10 0 12
Eggs, fresh, per dozen.....	0 23 0 24
Potatoes, per bag (new).....	0 75 0 80
Apples, per bbl.....	0 25 0 30
Cabbage, per dozen.....	0 20 0 30
Turnips, per bag.....	0 30 0 35
Carrots, per bag.....	0 35 0 40
Beets, per doz. bunches.....	0 15 0 20
Parsnips, per peck.....	1 00 1 20
Onions, per bag.....	40 75
Cauliflower, per doz.....	40 75

LIVE STOCK MARKETS.

Buffalo, Oct. 27, 1885:

Receipts 9,440, against 8,440 the previous week. The offerings of cattle on Monday numbered 250 loads. Trade opened slow and at a sharp decline. Some choice steers sold at \$5 40 @ 5 65; good, \$5 10 @ 5 30; fair to medium at \$4 25 @ 4 85; good butchers' \$3 65 @ 4; mixed butchers at stock, \$3 @ 3 75, with stockers at \$3 @ 3 40, and feeders at \$3 50 @ 3 75. Prices were lower on Tuesday, and closed flat on Wednesday. Of Michigan cattle 20 steers av. 940 lbs., sold at \$3 40; 20 do. av. 892 lbs. at \$3; 24 do. av. 823 lbs. at \$3; 18 do. av. 694 lbs. at \$2 85; 24 do. av. 688 lbs. at \$2 75; 25 do. av. 924 lbs. at \$3 20; 15 do. av. 874 lbs. at \$3 15; 33 do. av. 756 lbs. at \$3; 13 feeders av. 692 lbs. at \$3 90; 10 do. av. 1,010 lbs. at \$3 90; 19 do. av. 940 lbs. at \$3 50; 18 mixed butchers' av. 943 lbs. at \$3 45.

QUOTATIONS:

Extra Beeves—Graded steers weighing 1,450 lbs. and upwards.....	\$5 10	@	\$5 50
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 25	@	4 65
Medium grades—Steers in fine flesh, weighing 1,050 to 1,250 lbs.....	3 75	@	4 15
Oxen—Coarse rough to extra.....	3 25	@	4 00
Good Butchers' Beeves—Light, fat steers, weighing 900 to 1,000 lbs.....	3 40	@	3 65
Heifers—Fair to choice.....	3 00	@	3 50
Cows and Heifers—Good to choice.....	2 75	@	3 50
Texas and Cherokees, oorn fed.....	3 25	@	3 50
Do do grassy.....	3 00	@	3 25
Mixed Butchers' Stock—Common steers, stags, old cows, light heifers, etc.....	2 50	@	3 00
Stockers—Good to choice western, weighing from 950 to 1,000.....	3 00	@	3 40
Canadian feeders.....	3 50	@	3 90
Stock bulls.....	1 90	@	2 25
Butchers' do., fair to good.....	2 15	@	2 50
Veals—Fair to prime of 160 to 210 lbs. average.....	5 75	@	6 25

HOGS.

Receipts, 53,850, against 47,665 the previous week. The hog market opened up slow on Monday, but later improved, and sales were made at the closing prices of the previous week. The supply was light on Tuesday, and the feeling was stronger, and on Wednesday Yorkers were advanced, closing with good to choice Yorkers selling at \$4 10 @ 4 15; fair do, \$4 00 @ 4 05; medium grades fair to choice, \$4 10 @ 4 15; good to extra heavy, \$4 @ 4 10; pigs, common to choice \$4 @ 4 10; skips and culls, \$3 @ 3 20.

ADVERTISING RATES.

The regular rate for ordinary advertisements is 25c. per line, or \$3 per inch, nonpariel, and special contracts for definite time and space made on application

Advertisements unaccompanied by specific instruction 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 advertising circular and an estimate.

NEW ADVERTISEMENTS.

THIRD ANNUAL ONTARIO PROVINCIAL FAT STOCK SHOW

TO BE HELD IN THE TOWN OF WOODSTOCK On December 9, 10 and 11, 1885 UNDER THE AUSPICES OF THE AGRICULTURE AND ARTS ASSOCIATION OF ONTARIO, and the COUNTY OF OXFORD FAT STOCK CLUB.

Cattle to be in the Building on the Afternoon of December 9th. COMMITTEE OF MANAGEMENT: From the Agriculture and Arts Association of Ontario: Messrs. George Moore, Waterloo; J. C. Snell, Edmonton; J. B. Aylesworth, Newburgh; Stephen White, Chatham; Henry Parker, Woodstock.

Wesleyan Ladies' College HAMILTON, CANADA, THE OLDEST LADIES' COLLEGE IN THE PROVINCE. MOST COMPLETE IN ITS EQUIPMENT.

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A FIRST CLASS BUSINESS TRAINING COLLEGE Practical in every department, well qualified and energetic Teachers, system new, unsurpassed by that of any other College of the kind, and endorsed by the leading business men of the city.

SHORTHAND AND TELEGRAPHY BY SKILLED INSTRUCTORS Ladies admitted to full course. Terms reasonable. For further particulars address

E. A. GEIGER, Secretary. M. L. RATTRAY, Principal. Mention FARMER'S ADVOCATE. 230-y

VIRGINIA FARMS—Mild Climate. Cheap Homes. Northern Colony. A. O. Bliss, Centralia, Va. 239-y

\$10 BRONZE & NARRAGANSETT TURKEYS Bred 14 years for size and plumage. 20 per cent. off if ordered now. Tim Bunker on Turkey Raising, 25c. W. CLIFF, HADLYME, GT. 239-b

DR W. E. WAUGH—Office, The late Dr. Anderson's, 239-y



GRAND Colonial Exhibition in London, Eng., 1886

Fifty-Four Thousand Feet Reserved for Canada.

FIRST ROYAL EXHIBITION COMMISSION SINCE 1862.

THE COLONIAL AND INDIAN EXHIBITION to be held in LONDON, England, commencing MAY 1st, 1886, is intended to be on a scale of great magnitude, having for object to mark an epoch in the relations of all the parts of the British Empire with each other.

This Exhibition is to be purely Colonial and Indian, and no competition from the United Kingdom or from foreign nations will be permitted, the object being to exhibit to the world at large what the Colonies can do.

All Canadians of all parties and classes are invited to come forward and vie with each other in endeavouring on this great occasion to put Canada in her true place as the premier colony of the British Empire, and to establish her proper position before the world.

By order, JOHN LOWE, Sec. of the Dept. of Agriculture. Ottawa, 1st Sept., 1885. 239-c

STANDARD CHOPPING MILLS.



EASTERN OFFICE—154 St. James St., Montreal. Waterous Engine Works Co., Brantford and Winnipeg. 239-y

FARMERS' SONS and DAUGHTERS WANTED TO SELL MY

Famous TEA and COFFEE in your own neighborhood; good pay; no cash capital required; enclose stamp for reply. Address PETER WESTON, Tea Merchant. LONDON, ONTARIO. 239-a

USE the BOSS Zinc and Leather Interfering BOOTS and COLLAR PADS. They are the best. 239-b

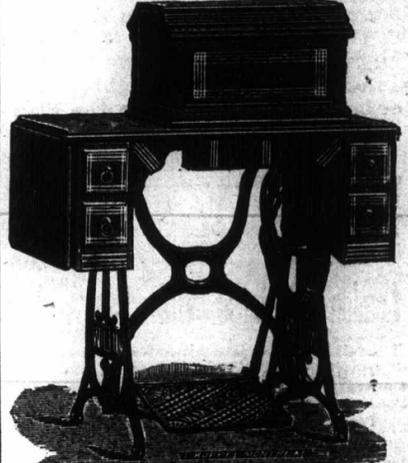
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PLACE in the West to get a Business Education, learn Shorthand or Spencian Penmanship, is at the DETROIT BUSINESS UNIVERSITY, Detroit, Mich. This school comprises the Goldsmith, Bryant & Stratton, Spencian and Mayhew Business Colleges, all recently consolidated.

BUSINESS COLLEGE IN CONNECTION WITH WOODSTOCK COLLEGE WOODSTOCK, ONT.

The College has been thoroughly re-organized and placed in the hands of a most able staff of teachers (including two who have been principals of similar and successful institutions). Course most thorough and practical. Fees very moderate. For full information, address— N. WOLVERTON, B. A., Principal Woodstock College. 239-d

THE BEST IS CHEAPEST.



NEW WILLIAMS SEWING MACHINE

Possesses more new improvements and points of superiority than any other sewing machine yet introduced, namely: A new Self Threader Shuttle, which can be instantly threaded by a blindfold operator. An Adjustable Castor, which steadies the machine on an uneven floor.

THE WILLIAMS MANUFACTURING CO., 1733 Notre Dame St., MONTREAL, P. Q. 239

CORRESPONDENCE BUSINESS SCHOOL

451 MAIN ST., BUFFALO, N. Y. A new and special Department of the Bryant & Stratton Business College. Thorough and practical instruction given to young and middle-aged men and ladies at home by means of personal correspondence.

BOOK-KEEPING, BUSINESS FORMS, PENMANSHIP, ARITHMETIC, COMMERCIAL LAW, LETTER WRITING AND SHORTHAND

successfully taught. Distance no objection. Terms moderate. Circulars free by mentioning FARMER'S ADVOCATE. Address— C. L. BRYANT, Secretary, Buffalo, N. Y. 231-y

1885... 23... 21 1/2... 20... 18 1/2... 19... 15... 1885... 0 00... 0 00... 0 75... 0 85... 0 88... 0 82... 0 02... 0 1 25... 0 00... 0 4 25... 0 7 00... 0 7 00... 0 17 00... 0 13 00... 1885... 0 55... 0 75... 0 20... 0 16... 0 12... 0 00... 9 12... 75 1 50... 70 90... 10 0 12... 10 0 24... 23 0 80... 75 2 00... 205 0 30... 200 0 30... 30 0 35... 35 0 40... 15 0 20... 00 1 20... 40 75... 27, 1885... week. The... Trade... steers... medium at... butchers... feeders at... and closed... steers av... do av... do av. 688... av 874 lbs... ers av. 992... do av 940... 3 45... 10 @ 85 50... 75 @ 5 00... 25 @ 4 65... 75 @ 4 15... 25 @ 4 00... 40 @ 3 65... 00 @ 3 50... 75 @ 3 50... 25 @ 3 50... 00 @ 3 25... 50 @ 3 00... 00 @ 3 40... 50 @ 3 90... 90 @ 2 25... 15 @ 2 90... 75 @ 6 25... week. The... ut later im... prices of the... weekly, and... prices were... rkers selling... g ades fair... @ 4 10; pigs... @ 30.

## PRIZES! PREMIUMS

Farmers, many of the most valuable Cereals on your farms, the most valuable Vegetables in your gardens, the most valuable Fruit in your orchard, and some of your most beautiful Flowers; the most pleasing and most original Pictures that decorate your houses, or Books that enlighten your minds, have been procured by you, directly or indirectly, through the medium of our Prize List, or our introduction.

For instance, we first disseminated the Clawson Wheat in Canada. Who sent out the Scott Wheat? Where did you get the Democrat Wheat from? Who got the Early Rose Potatoes for 50 cents or one subscriber? Where did you first hear of the Nonpareil Apple? Have you any more pleasing picture than your Life's Voyage in your neighborhood, or one more original than the Princess Louise and her Consort?

They were first sent out to the country through the medium of the Farmer's Advocate. Many procured

them as prizes for sending in one subscriber; others purchased or procured them after hearing of them through the same paper.

This year we are intending to introduce to you many highly valuable prizes, many that you have not heard of. All we say now is, go to work and get at least one new subscriber, and secure one of the valuable prizes that will be offered next month; you will never regret your exertion, if you get but one name. We will do what no other premium offerer dare do, that is to guarantee the winners satisfaction and guarantee that every one shall be a winner.

There will be a fine list to choose from, and every old subscriber that sends in one new subscriber will have a prize.

Go to work! Be the first in your locality to secure the best.

See List of Prizes next month.

### Notices.

The third annual Ontario Provincial Fat Stock Show, under the auspices of the Agriculture and Arts Association and the County of Oxford Fat Stock Club, will be held in Woodstock, Ont., from the 9th to the 11th of Dec., 1885. A very fine display is expected.

The eighth annual American Fat Stock and Dairy Show will be held in the Exhibition Building, Chicago, from Nov. 10 to 19, 1885. During the exhibition there will be special meetings of the different stock associations. One of the special features will be the exhibition of butter, cheese, dairy cattle, and dairy utensils used in the manufacture of dairy products; over 6,000 pounds of milk will be manufactured each day into butter and cheese, and the public will have an opportunity of seeing the most approved appliances, and the methods in use among the most successful dairymen in the country.

### Stock Notes.

A special meeting of the American Berkshire Association will be held November 14th, 7.30 p. m., at the Sherman House, Chicago, Ill.

Most diseases of domestic stock are brought on by injudicious feeding. Too much, too little, the wrong kind, or too sudden change, will, any and all of them, make trouble. This is worth knowing and remembering.

Mr. Arthur Johnston, of Greenwood, Ont., has in quarantine 19 head of Scotch Shorthorn cattle selected by himself from the best herds in Scotland, and from notes published in the Old Country papers, both at the time of purchase and shipping, we think they will be well worth seeing on their arrival at Greenwood. They consist of lots selected from such well and favorably known herds as Messrs. Campbell, of Kinellar, Duthy, of Collynie, the Duke of Buccleuch, of Dalkith Park, Inglis, of New More, Cruickshank, of Littyton, and others. Besides the Shorthorns in quarantine, Mr. Johnston brought along with him four very superior young Clydesdales, some of which were winners at the leading shows in Scotland.

The Woodside flock of Southdowns has again been very successful in the shows of 1885, securing 68 first prizes, 10 being flock prizes (all that were offered). The above record has been made in the face of strong competition, even from England.

The sales have been fairly good, with a stronger demand for ewes than usual. The following list will show how they have been distributed:—

- One ram and three ewes to U. Privett, Greensburg, Ind.
- One ram to J. A. Jackson, Caistor.
- One ram and three ewes to A. Zeffler, Paris.
- One ram lamb to S. White, Charing Cross.
- One ram to Dr. Morton, Barrie.
- Four ewes and two ewe lambs to J. D. Downing, Eldred, Pa.
- Two ewes and two ewe lambs to E. Cresswell, Seaforth.
- One ram and two ewe lambs to J. H. Gordon, Catawaqui.
- Ten ewe lambs to Jas. Niel, Collingwood.
- One ram and two ewe lambs to Geo. Glover, Nottawa.
- One ram lamb to R. C. Lymburner, Camboro.
- Ram lamb to A. Bratt, Moulton.
- Ram lamb to H. Zumstin, Caistor.
- Ram lamb to G. Moot, Gainsborough.
- Ram lamb to J. Creek, Gainsborough.

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### London Business University and Telegraphic and Phonographic Institute

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COURSE—Comprehensive and Practical. INSTRUCTION—Rapid and Thorough. Rooms Centrally and Pleasantly Located and Elegantly Fitted up. The only Institution which really gives a Business University Course.

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### FOREST CITY BUSINESS COLLEGE, OPP. MASONIC TEMPLE, LONDON, ONT.

Is the most Elegantly Furnished and Thoroughly Equipped Business College ever opened in London, and is rapidly gaining the confidence and support of the business men of the city. We were awarded **FIRST PRIZE FOR PENMANSHIP** at the late Provincial Exhibition.

*Western and York.*

## BRITISH AMERICAN Business College

ARCADE, TORONTO.

A School thoroughly equipped for Business Training, Bookkeeping, Penmanship, Business Correspondence, Arithmetic, Commercial Law, Shorthand and Type Writing practically taught. For circular and information, address.

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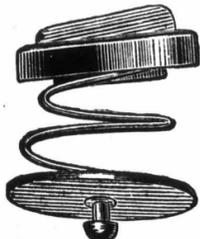
C. O'DEA, Secretary.

## RUPTURE CURED

IN FROM 30 TO 40 DAYS BY WEARING

### EGAN'S IMPERIAL TRUSS.

Read the following extract from a letter of a well-known citizen of St. Catharines, — hundreds like it:—  
 Sr. CATHARINES, Sept. 30th, 1885.  
 GENTLEMEN,—Being over 70 years of age, and over 30 years ruptured, I looked upon my case as hopeless, especially as I tried various appliances without success, among others, recently, two springless trusses made in York State, costing me \$40. Nothing would retain my Hernia. \* I have worn your truss over four months, night and day, with great satisfaction and comfort; even to bathe in it the rupture has never come down, it holds me perfectly secure under all circumstances. You may publish this for the benefit of other sufferers.  
 Yours truly,  
 CAPT. B. KING.

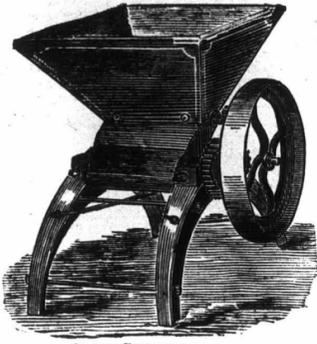


This new Spiral Spring Pad Truss has taken ten years to make it perfect; is guaranteed to hold the very worst case during the hardest work or severest strain. It will cure every child sure; and so but of every 100 adults. **Be warned—don't waste your money on useless appliances,** but send stamp for our treatise; it contains full information, your neighbors' testimony, price list and questions for you to answer. When writing please mention this paper.

ADDRESS

Egan's Imperial Truss Co., 23 Adelaide St. East, Toronto, Ont.

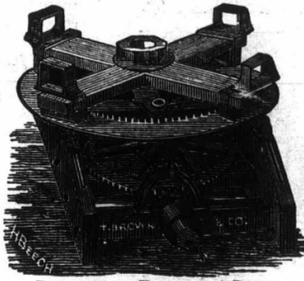
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GRAIN CRUSHER.

### John Russell & Co.

Ingersoll Foundry  
INGERSOLL, ONT.



TWO OR FOUR HORSE (PIT) POWER.

JOHN RUSSELL & CO. have manufactured and sold hundreds of the above machines in the past, and the demand for them is increasing every year. They are constantly receiving very gratifying letters from farmers who have used them, and are fully warranted in saying that these machines together with their Power and Hand Straw Cutters, also the "Combination," "Richardson" and "Bruce" Sawing Machines, are far ahead of many, equalled by few, and excelled by none in the market. Manufacturers also of **Brown's Improved Patent Hay Loaders, Hay Tedders, Pitt's Horse Powers (2 to 10 h.p.) Reapers, "Star" Mowers, Land Rollers, Field and Corn Cultivators, &c.** One of the best 600 acre farms in the County of Kent for sale in 1, 2 or 3 lots.

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BESIDES A VERY LARGE GENERAL STOCK OF  
**FRUIT TREES, ORNAMENTAL TREES, SMALL  
FRUITS, FLOWERING SHRUBS, &c.,**

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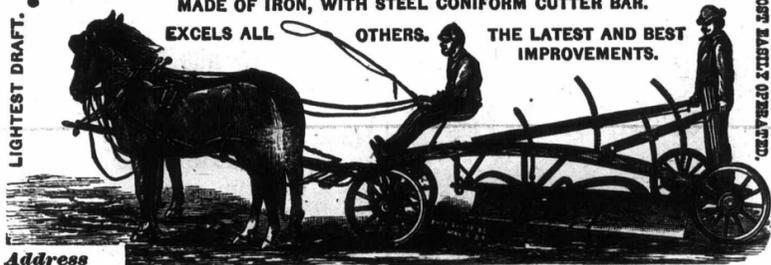
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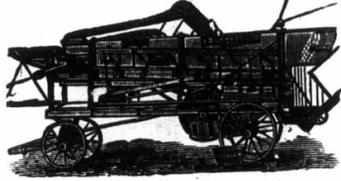
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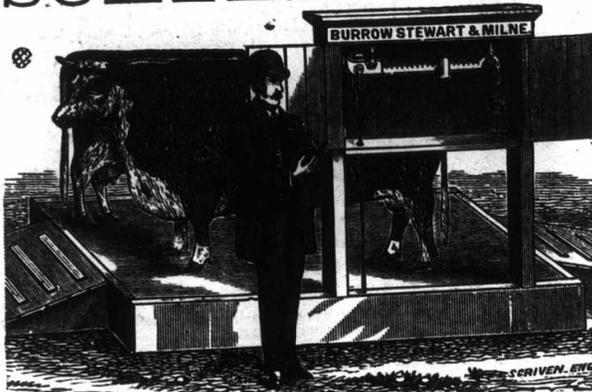
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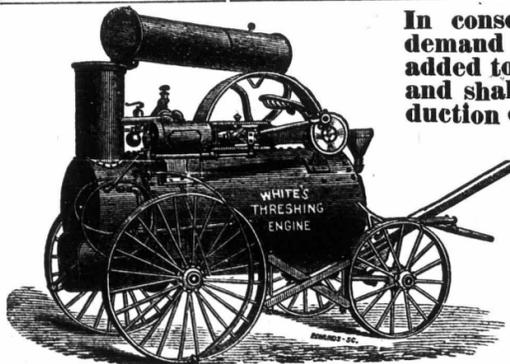
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