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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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Editorial.

On the Wing.

PAST, PRESENT AND FUTURE.

This number is the first of the 21st volume of the FARMER'S ADVOCATE. No one, not even the writer, imagined that this journal was destined to attain its present position, commenced as it was by one totally unacquainted with typography or editorial labors—a backwood's farmer over 40 years of age; that it should have attained the position held for the past seven years—that of being the best agricultural paper published in this Dominion—is something of which its supporters may justly be proud. Your editor feels thankful and grateful to each one of you, and hopes to see it made a greater power for your good than it ever has been.

When the FARMER'S ADVOCATE was first commenced, the majority of farmers took up the cry raised by place-seekers, namely, that it could not exist one year, and various disparaging remarks were made concerning it. And notwithstanding its great success and annual improvement, there still exist defamers even among those who have been directly or indirectly benefited by it to the extent of many times its cost. No one can deny the fact that we have done something towards the improvement of the live stock of the country. The best dairymen in Canada have said that no more valuable information on the dairy interest was to be found on this continent than that furnished by our writers. Every farmer who has raised the most valuable cereals knows or should know that many of the most popular and most profitable varieties have been imported directly at our expense and disseminated by our personal expenditures. In vegetables, fruits and arboriculture your ADVOCATE claims many laurels.

The Executive Committee of the Legislature of this Dominion, in stamping out diseases of farm stock, have on more than one occasion acted on information furnished by the editor of this journal by telegraph and otherwise, which has not been published. If the quarantines have not been established through our instigation, they have been made more effective from information furnished by us. The Model Farm was established from suggestions taken from our plans; this we can prove to the satisfaction of any unbiassed person. We were the first to aid in the establishment the of Grange, in the hope that good might result from it. We strongly supported the Provincial Agricultural Association. We have done our duty in attempting to prevent the introduction or spread of contagious diseases among our farm stock in this Dominion to a much greater extent than we have thought it judicious to publish. We have advocated the judicious opening up of our North west, and the interests of the farmers and our Dominion in various ways, and have kept the pages of this journal open for criticism of any of its statements. For the past twenty years no subscriber sending information suitably prepared, new and of importance to the farmer, has been willfully overlooked. No one has ever doubted our loyalty to our Queen or our country. We believe that no journal of twenty years' standing in Canada has tended more to the elevation of the farmers, their interest, and the general welfare, prosperity and happiness of the nation than your ADVOCATE. No doubt errors have occurred; perfection is not obtainable here.

Up to the present day it has been our desire to conduct this journal independent of party lines, and it is to be regretted that some of our most important remarks tending to the best interests of the country, should have been misinterpreted by partisans. For instance, our condemnatory remarks of the mismanagement of the emigrants and the lands in Manitoba, were a cause for indignation and even falsehood. Had they been regarded, we should not have had bloodshed, and the existing dissatisfaction, taxation and uncertainty that now exist. Had the Provincial Board of Agriculture and Arts regarded the light censures intended for the farmers' good, the members of that body would feel stronger and more useful in their positions than they do.

The Government is so dissatisfied with the past management of the Model Farm that a re-modelling is taking place; and this institution must be re-modelled every year, as the Board of Agriculture and Arts has been, with a greater cost and greater loss of prestige each time, which must continue until they both become extinct, unless the suggestions already published in this journal are adopted.

We are not entirely ignorant of the existing feelings of the inhabitants of our different Provinces, of our sister colonies, and of Great Britain. We anticipate a change; everything is pointing to it. The numerous organizations and factions, with their various modes of boycotting, silencing, dynamiting, etc., may soon

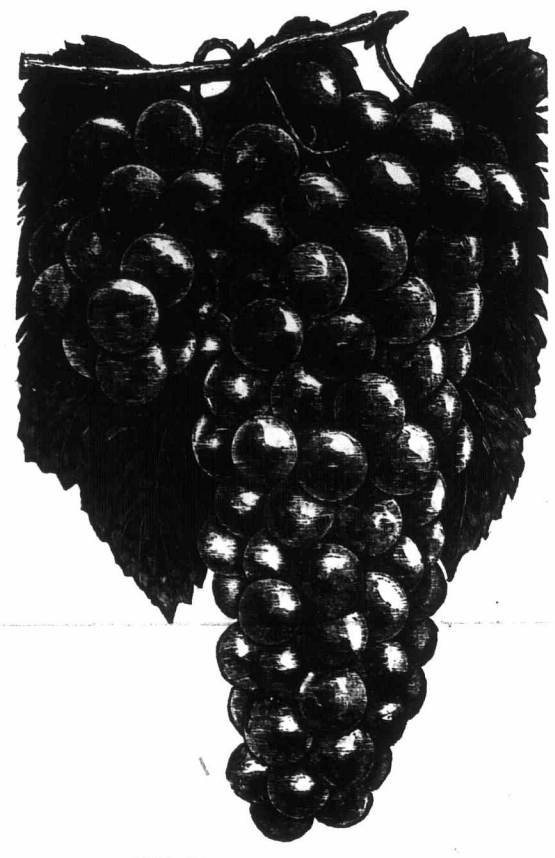
have cause to unite in one grand patriotic course, having more exalted and more philanthropic ends than the suppression of truth and shielding of vice.

Farmers, our country has never been more in danger than at the present time. From Vancouver Isle to Labrador you have heard of dissatisfactions, menaces and in some instances, bloodshed. The greatest cause is partyism. Partyism is many headed; it sacrifices truth, honor and everything ennobling to its ends, while fraud and deception are its weapons. The results, although seen in a small way in many places, should cause us to look for preventative or remedial measures. We cannot remain at rest; we must be improving or degenerating. We should all strive to ward off any impending danger. How can we best do it, is a question asked by many. We can see no better way than to direct the attention of the people from partyism to patriotism. We have a large and beautiful country, ample room to make tens of millions of happy homes. It is possible that some leading expert may be found to promulgate plans that may bring from our present political parties plans that may tend more to patriotism. We see the clamours for more offices, more jobs, high salaries; all these are for the benefit of partisans, and nearly all are additional means to increase the burdens of the real cultivator of the soil. Your ADVOCATE has made many enemies of those desiring to obtain your money and increase your burdens. Many of these strong partisans are abroad in the land and may have tried to disparage our work and your ADVOCATE by forcing their partizan publications on you, by defaming your journal regardless of truth, by attempting to deprive your journal of the credit due to it, by withholding their support, by word or deed. Of such, however, when you hear them in public meetings or in private, when they solicit your vote or influence for themselves or some friend, you may depend they have an axe to grind at your expense in increased taxation of your land or on your necessaries of life.

If the FARMER'S ADVOCATE has during the past twenty years attempted to serve your interest in efforts to improve the agriculturist mentally, morally and honorably, and has succeeded in convincing more every year of its utility, then hesitate no longer; send in your $1, and $1 for some neighbor that you have convinced of the utility of the ADVOCATE, and it may be possible that this journal may warn you of danger in time to save your stock, your crops, or your happiness, as it has already done in many instances.

THE WESTERN FAIR.

Perhaps the greatest loss that the agricultural exhibitors of Western Ontario have sustained has been the disposal of the Western Fair grounds in the city of London. The farmers fought hard against it for fifteen years, but the union of organized bodies and citizens and some misguided or interested parties, have obtained a power over lands that were granted for exhibition purposes, and broken up the best located and the best exhibition grounds that Canada ever had, where the best really agricultural exhibitions have ever been held, and under various pretences desire to pocket the proceeds. Part of the grounds are now sold and built on, and every device is being practiced to wrest the remaining portion from the farmers. The full particulars would be too long for us to publish in this journal, but suffice for us to say that every paper and every farmer should be informed of the full particulars of this improper transaction. There are Members of Parliament who have attended the annual meetings that should be called upon to explain, and should inform you truly of the real position of these grounds, and of the means taken to deprive the farmers of them. We look on it as the worst thing that ever transpired in Middlesex.



THE EMPIRE STATE GRAPE.

What has been done in London may be enacted in any county. Farmers should attend the annual meetings, and be sure and accept no promises in lieu of titles in their own hands for properties supposed to be held by them. In your elections do not put too much confidence in the most plausible or longest speeches. Remember some are apt to talk against time to annoy you and prevent others being heard. Let short speeches be the order of the day, and allow as many as possible to express their views, and elect men whom you know to be honorable and honest, and whom you know to be farmers or farmers' sons, and can and will act openly, fearlessly, truthfully and honorably in looking after your interests. Farmers can do all that is required if they only have an opportunity. It is not judicious to elect merchants or professional men to offices that farmers alone should hold. The loss of the Western Fair grounds has been brought about by those who serve other interests, through misrepresentation and allurements that will never be carried out. In years to come you may look in vain for such an agricultural exhibition as has been held on these grounds.

A NEW GRAPE.

To the best of our knowledge we were the first to raise cultivated grapes in the Township of Delaware; in fact we do not know of any being raised for a distance of 60 miles west of London at that time, nearly 40 years ago. The variety we first grew was the Clinton. A plant from the old stock now clings to the old homestead, and has borne for the last 25 years. We have since tried several of the new varieties, the Concord, the Clinton, and the Delaware being the most valued for hardiness.

This year we intend to plant an Empire State grape vine, and have pleasure in introducing it to you. We have received the very highest commendation regarding it from one of our most reliable Canadian fruit growers. We give the description given of it by different gentlemen who have grown it in Michigan and New York States. It is a new early white grape, the whitest of the hardy varieties, other so-called white grapes being either green or brownish. It was a seedling of the Hartford Prolific with the Concord. $4,000 was paid to the propagator by Pratt Bros., nurserymen, Rochester, N. Y., who now control the stock. It is a strong grower, very early and as hardy as the Concord; it resists mildew better than most varieties; it is very productive, of the best quality, free from floxiness, a good keeper, hangs to the stem well and is considered the best raisin grape that can be raised in northern latitudes. The bunches are large, from six to ten inches in length; fruit large, roundish-oval in shape. From the various reports we have received from different localities we feel justified in commending this grape to our grape-growers and amateurs, believing that it will be found more profitable than any grape we now have growing, as the price that these grapes have commanded, and would command in our markets, would far exceed that of any we now have growing. The price of really good new varieties is always high; these vines are sold at from $1.50 to $2.00 each, depending on the age of the vine.

Those of our subscribers who reside in localities where the Concord will ripen, and who want to make a little profit by selling a few really choice grapes at a good price in your city or village, we feel confident will meet with no loss by sending us two or three new subscribers and procuring one of these vines. We do not advise you to invest heavily until you are sure of what you are doing. Do not plant a grape vine unless you have fully made up your mind to take care of it; very few of you are aware of what can be done with a single plant. In England one grape vine is reported to have borne five tons of grapes in one year and has been in bearing for over one hundred years. In the United States we saw a rose bush, or rather tree, as large round as a man's leg; it returned in one year more profit than 100 acres of nursery ground. Your stock and grain are not paying any too well just now. Just prepare a piece of ground near your house, clean away some of the rubbish you have there, put in a vine and take care of it. Some day you may receive more profit from it than from your best cow. Perhaps you may believe as we do at the present time, namely, that it will be more profitable to plant than sow. See our monthly prize list and you can procure the best without money.

Farmers' Clubs.

Middlesex Agricultural Council.

The regular monthly meeting of this club was held on Saturday, Dec. 19, in the office of the FARMER'S ADVOCATE, the President, Mr. D. Leitch, in the chair.

After routine, several new members having been elected, Mr. Henry Anderson, Secretary of the Society, read the following paper :

THOUGHTS ON OUR DRAINAGE LAWS.

Is is generally the case in this world that we cannot secure any great advantage of any kind without having to submit to more or less disadvantages. So it is with drainage. The very object of draining is to cause a more rapid outflow of surplus water, thereby causing greater floods in the streams, and in many cases overflowing low lands near the outlets. There is no doubt that the general drainage and cultivation of the land has been the principal cause of the disastrous floods in London West, and the same effects are felt more or less in every stream in the settled parts of the Province.

But there is no doubt that the good done by draining in promoting the health of the people and improving the fertility of the soil, is immeasurably greater than the evils caused by it, and no sane person would think of prohibiting draining on account of the damages that may be caused by the rapid outflow of the water on the lands below. Then the question arises, Have the persons living on low grounds liable to be overflowed, a just claim for damages? In my opinion no claim for damages where the water is conducted in its natural course should be entertained, as their misfortune is the natural and inevitable result of the improvement of the country, and might have been foreseen at the time they chose their location. Land in Canada was not assigned to individuals by lot, the same as the land of Canaan was to the Jews. If it had been the person getting an inferior lot, he would have had a fair claim on the community for compensation. Here every one had a free choice, and if a person chose the rich, level flats instead of high land, it is but natural and right that he should take the consequences.

All agricultural writers and the experience of our farmers show the immense benefits derived from draining the soil. Our Legislature of Ontario have done all in their power to encourage draining by passing numerous Acts with that object, and by appropriating $200,000 to be loaned to municipalities for that purpose. The Ontario Drainage Act provides for draining swamps and low lands, to be paid for by local rates on the parties interested, the Government advancing the money to be repaid by annual instalments spread over 22 years, at the rate of five percent., or $7.61 per annum to repay each $100 borrowed.

The Ontario Tile Drainage Act provides that any township council may borrow from $2,000 to $10,000 from the Government, to be loaned to farmers for tile draining, to be repaid in 20 years at the rate of $8 per annum for each $100, or a trifle less than five percent. The Ditches and Watercourses Act of 1883 is an improvement on former Acts, as it provides for a Township Engineer to lay out the drains and assess the cost, instead of the fence viewers, and it worked well as long as it was the generally accepted opinion that every man had the right to drain his land in the natural watercourse, and dig just far enough to get sufficient fall without being liable for damages on account of the water flooding land below. Some few held a different opinion, and to settle the question the Legislature of Ontario, at their session in 1884, unfortunately passed an amendment to the Ditches and Watercourses Act, providing as follows :

"Every such ditch or drain shall be continued to a proper outlet, so that no lands, unless with the consent of the owner thereof, will be overflowed or flooded through or by the construction of any such ditch or drain, and it shall be lawful to construct such ditch or drain through one or any number of lots until the proper outlet is reached."

So, now, before a man can drain his own land he must get the consent and co-operation of all landowners in the course below him. True, he can get the engineer to lay out each one's portion of the work, but Canadians hate to be compelled to do anything, and each one has the privilege of appealing to the judge. Appeals are very common, as it is almost impossible to satisfy people with respect to their share of the work and the benefit, so that if a farmer had a number of land owners on the drain below him, he would most likely give up the drain rather than incur the time and trouble required to put it through according to law. Another difficulty would be to decide what would be considered in law a proper outlet, as it might be claimed that the construction of large drains had the effect of raising the water, even in the river Thames, in time of flood, and consequently increasing the quantity of land overflowed. In fact, if once the principle is acknowledged that a person is liable for damage done by water issuing from his drains, it is almost impossible to say where the liability would cease.

As an instance in point, the Westminster Council were petitioned to construct a drain from the second concession to Dingman's Creek. Accordingly the Engineer made the necessary surveys and estimates, and the parties interested were very anxious to have the drain made, as it would drain a large tract of land at present useless. But a party living on the creek employed an eminent legal gentleman of London to attend the Council and protest against the drain, and he gave notice of an action for damages if it was made, on the ground that Dingman's Creek was not a proper outlet and that the drain would cause an overflow of the flats. To those not acquainted with Westminster, I may say that Dingman's Creek is a large stream rising in Dorchester, running through the whole width of Westminster, and is, in fact, the only outlet for the water of one-half of the Township. I do not think it likely in the case of this drain that they could have proved any damages, but with the natural horror that most farmers feel for lawyers and lawsuits, it was decided to relinquish the drain rather than risk it.

To facilitate draining, and to avoid numerous vexatious lawsuits, in my opinion, the amendment of 1884 above recited should be repealed, and an amendment substituted distinctly recognizing the principle that every man has the right to drain his own land in the natural watercourse, without being in any degree responsible for any damage the water may do below him. This was generally understood to be the law, and was the principle always acted on in this Township, at least, until the amendment of 1884 deranged the whole affair.

There is a very large amount of tile draining done, there being no less than five drain tile factories in operation in Westminster. This is all done by farmers at their own cost, and as the land is generally rolling, the majority can get an outlet on their own land, and consequently drain independently of the law. But where a man has to cross his neighbor's land to get sufficient fall, the amendment of 1884 is found to be a great detriment, and in some cases has prevented the making of the drain.

A member.—Does the Act which provides for the drainage of swamps require that the money be borrowed through the municipalities, the same as is provided by the Tile Act?

Mr. Anderson—Yes.

W. A. Macdonald.—I wish to draw the attention of the members to a statement in Mr. Anderson's paper which is very apt to be misconstrued. I refer to the action of drainage upon floods. The question has been discussed threadbare, but I think it should now be regarded as settled. Tile drainage prevents floods, inasmuch as a drained soil will absorb all the water from ordinary rains, and if there be a surplus, it does not usually reach the outlet of the drain until the flood has partially subsided. With regard to open drains, however, especially those which drain basins of water that would otherwise go off by evaporation, or find its way into underlying springs, Mr. Anderson's remarks have considerable weight. If we have more floods now than formerly, I think it should be attributed to the removal of our forests, and not to drainage. When we speak of floods we mix up floods from the clouds with river floods. Tile drainage prevents the latter, and forests the former, as a rule.

Several members expressed their appreciation of Mr. Anderson's paper, and a hearty vote of thanks was tendered to him. One member said he could never get at the true inwardness of the drainage law. He went twice to a lawyer for advice, but still could not comprehend the situation until he heard the Secretary's able paper. Several members mentioned the pending of a number of vexatious lawsuits under the Drainage Act of 1884.

A resolution was unanimously passed to the effect that the Drainage Act of 1884 should be repealed.

EXPERIMENTS WITH POTATO ROT, AND THE ACTION OF FERTILIZERS ON THE YIELD OF POTATOES.

W. A. Macdonald delivered a lecture on the above subject, but we have only space for a synopsis. He said he had tested 15 brands of fertilizers, but his main object was to ascertain what constituents of plant food his soil was deficient in. In some instances he made over a thousand percent profit in the money he invested in fertilizers, while in other cases he lost several hundred percent. By loss he meant that the fertilizers used produced a less yield than where no fertilizer at all was applied. He produced a bottle containing a sample of the soil in which the potatoes grew, a mechanical analysis having been made by separating the clay from the sand by means of water, the soil showing about 60 percent. of clay and 40 of sand. He showed, through a magnifying glass, that the sand was not all sand, but contained fragments of felspar, granite and other alkaline rocks, and said that this was the reason why the potash fertilizers produced a loss, the soil being already too rich in potash. The soil was evidently deficient in phosphoric acid, for the phosphates, even when applied alone, produced profitable results. He believed that most all the soil in the Province was deficient in phosphates. He said that Canadian phosphate rock was the purest in the world, that over $500,000 worth of it was shipped annually to England, which was a sad commentary on the intelligence of the farmers of Canada. Even in the city of London phosphate fertilizers were sold at $10 per ton less than the regular market price, and yet very few farmers took the pains of looking at them. He then spoke of the action of fertilizers on the potato rot, saying that farmyard manure produced twice as much rot as the average of the fertilizers, but with regard to the contagiousness of the disease, his experiments were not yet complete. Of the dozen varieties of potatoes tested, the newest resisted the rot best, and one variety appeared to be perfectly rot-proof. He pointed out how he had discovered frauds in the naming of the varieties of certain potatoes and other vegetables. Referring to the much discussed question that "Tillage is manure," he produced specimens of soil which would be benefited by a large amount of tillage, and other specimens which would not be so benefited.

The program for the next meeting will be the reading of a paper on "Apples and Apple Markets" by the President.

The Farm.

Farm Drainage.

No. V.

How to Take the Level of a Field.—There are complaints throughout the country that "practical" drainers are scarce. This cry of scarcity is uncalled for, when it is considered that a little head-work on the part of the farmer will do the leveling, and any man who can handle a spade

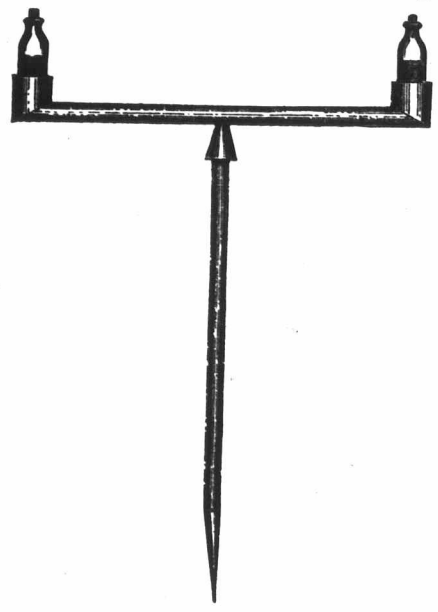


FIG. 1.

can easily do the rest—excepting, however, the laying of the tile, which should be done by the farmer or by a laborer working by the day, not by the job. No wonder that practical drainers are so much in demand so long as the leveling is done by the naked eye, or by observing the flow of water in the drain. No drainer, however practical, should be entrusted with the random system of determining the fall, for the durability of a drain is largely dependent upon the evenness of the flow.

There are many instruments used for taking the level of a field, some being expensive and some not. Although it would pay to procure delicately accurate instruments where a large amount of drainage is done, yet we shall not recommend their use under average circumstances. Fig. 1 is an instrument which we have seen used with astonishing accuracy and success, and it is so inexpensive that no farmer will complain of the cost. The horizontal portion is a tin tube, in each end of which a bottle is placed. It will be observed that the bottles are about half full of water. The bottom of the bottles must be perforated or broken out in order that the water may find its level. They should be fitted tightly into the tin vessel, or, if they are too small to fit well, some sort of stuffing must be used between the glass and the tin in order to prevent the water from running out. Where procurable, a piece of glass tube may be used instead of the bottle. The perpendicular portion is merely a stick, sharpened at the lower end for the purpose of making it retain a firmer footing in the ground. The head end of the stick is very slightly rounded off and acts as a pivot when placed into the tin receptacle in the centre of the tube. It is now plain that if the eye be placed close to any one of the bottles, just even with the water, and a sight be taken over the water in the other bottle, any distant object placed in line with the eye will be on a level plane, and will indicate how much higher or lower the ground is at that point than it is at the point of observation.

Fig. 2 is another leveling instrument used exactly for the same purpose, but can be made by any farmer who is accustomed to the use of carpenters' tools. This cut appeared in our issue of last April, but we reproduce for the benefit of new subscribers. This instrument has also been used with great success; we don't know which is the best, so that the farmer will act wisely if he procures the cheapest. Take Fig. 1 to a tinsmith and Fig. 2 to a carpenter, and get estimates of the cost.

Fig 3 shows how these instruments are applied in the process of leveling. For the sake of variety, we have supposed that the drain to be dug is too long, or rather the instrument too inaccurate, to take the sight from one position, and we have placed one of the instruments in one position, using the other for the other instrument for the other position. Let A B C represent an uneven surface of the field through which a drain is to be dug. Place a leveling instrument in any position near the lower end, say at *y*. Stick a post at A, having feet and inches marked on it. A sight taken at the right side of the instrument will strike the post at 3, and another sight taken at the other side of the instrument will strike the point 1, the stake first having been removed from A to B. The distance from A to *y* will depend upon the delicacy of the instrument or the accuracy of the sight of the observer. Take care that the points 3 and 1 can be distinctly seen. If each mark on the post represents a foot, it will now be seen that the point 3 is three feet above the level of the lowest point of the field at A, and that the point 1 is one foot higher than the ground at B. Now if this 1 foot be subtracted from 3, the result will be shown by the dotted line below the line of sight, or 2 feet, meaning that the ground at B is two feet higher than the ground at A. Let us now suppose that the distance between A and B is 400 feet, then it will be easily seen that there will be a fall of 2 feet in 400, or 1 foot in 200.

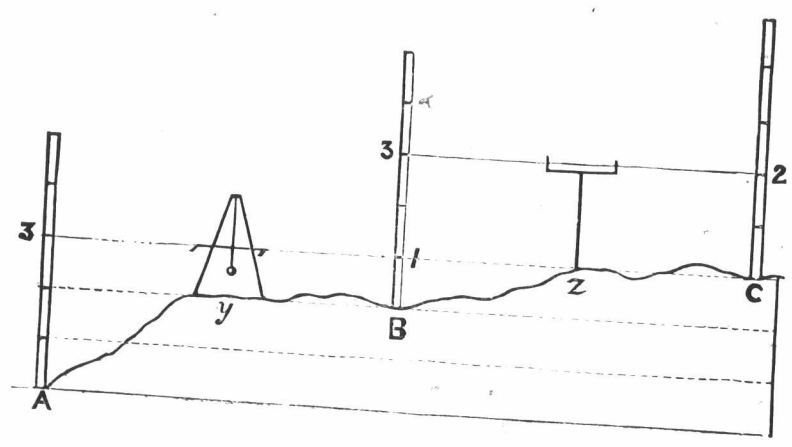


FIG. 3.

This calculation would be quite simple, providing the drain was to be only 400 feet long, or that a greater distance could not be accurately seen at one sight-taking—without changing the instrument. But let it be supposed that the length of the drain is to be from A to C, or say 800 feet; then it will not do to take the fall from B to A and then from C to B, but the fall from C to A must be ascertained. In this case proceed as before in taking the sight 3 to 1; then remove the stake to C, and place the instrument at *z*. In taking the sight over the water in the bottles, the point 3 will be found from the right, and the point 2 from the left. By subtracting 2 from 3 it is found that

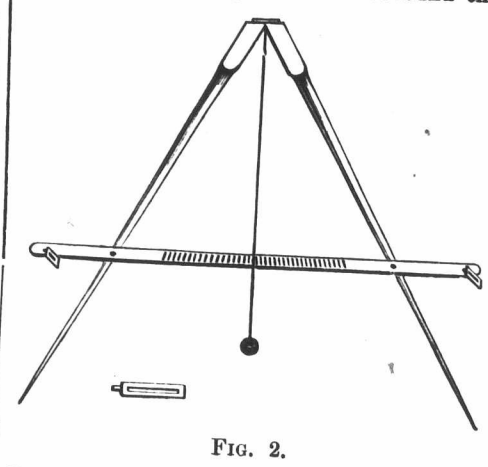


FIG. 2.

C is a foot higher than B, or three feet higher than A, as will also be proved by counting up the dotted lines. Therefore the fall from C to A is 3 feet in 800 or 1 in $266\frac{2}{3}$. In the same manner the fall must be taken from the upper to the lower end of the drain, no matter how often the instrument has to be changed.

In using the instrument represented in Fig. 1, some coloring material should be put into the water, especially by beginners, as the sight can then be taken more accurately.

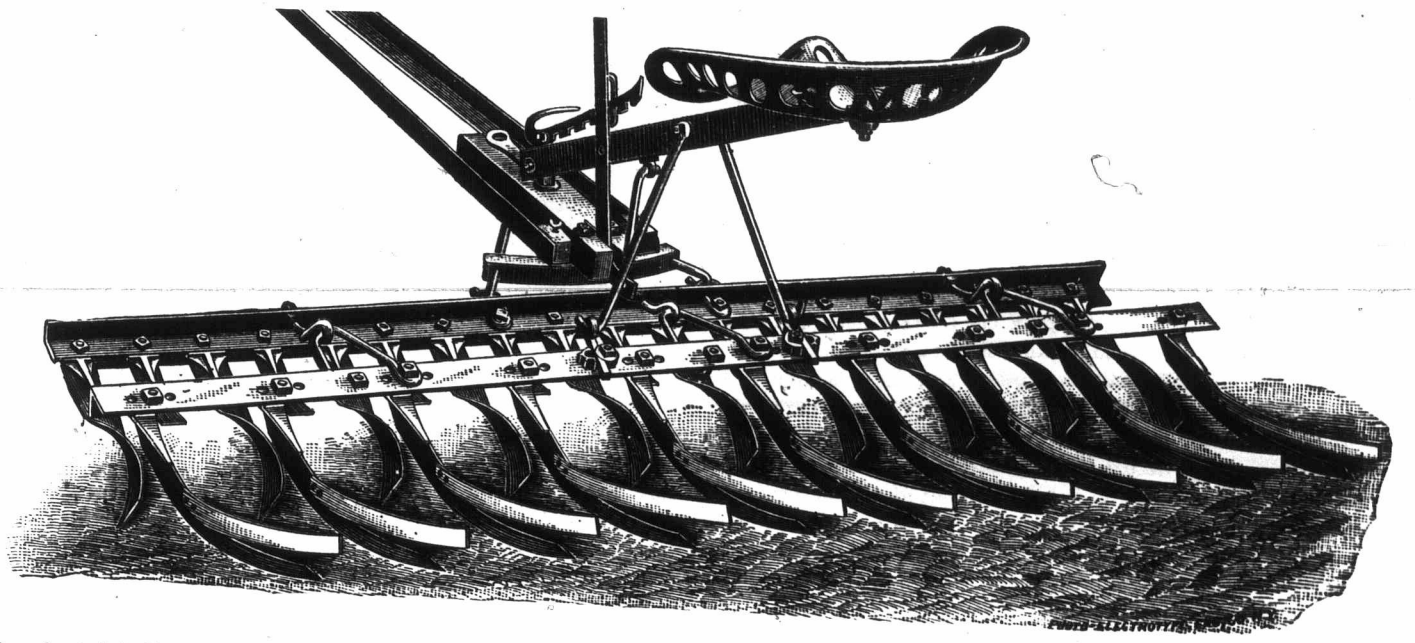
These instruments possess a double advantage, as they can also be used in measuring the fall in the drain. Take a ten foot straight edge and fasten it on the feet of the instrument represented by Fig. 2, taking care that when the thus completed instrument stands on level ground, the string supporting the weight will fall on the centre of the cross piece; then let one end of the straight edge drop until the desired fall of the drain is obtained, and mark the position of the string on the cross piece. For example, if the fall is found to be half an inch in the ten feet, let one end of the straight edge drop one-half inch below the level, mark the position of the string, and when digging the ditch, the desired fall will be obtained when the straight edge lies in the bottom of the ditch in such a manner that the string will coincide with the aforesaid mark on the cross piece.

The instrument represented in cut No. 1 can also be used in the same manner. Fix a leg firmly into the tin receptacle at the centre of the tube, and then fasten a straight edge at the lower extremity, securing it firmly by means of

braces, nailing one end to the upper portion of the leg, and the other to the straight edge. The fall of the drain can then be marked on one of the bottles, on the same principle as on the cross-stick in Fig. 2.

The Acme Pulverizing Harrow.

Every year improvements, alterations or new implements are being made, the wish of the enterprising being to procure the best. The stock of implements on a first-class farm is now no small item. To do the work most effectually special implements are now employed. We now introduce to your attention another harrow, clod crusher and leveler which has special merits. The teeth are made of the best steel, are strong and sharp, and are so placed as to cut and turn over the ground at a uniform depth, thus securing an evener growth of the crop. It is considered a most desirable harrow to put in grain in level fall-ploughed land, and to be the best levelling harrow, and an excellent clod crusher. It will cut, break up and kill all weeds. It is claimed to be admirably adapted for use on fall ploughed land, either stubble or sod.



We are in receipt of the catalogue of Nash & Brother, of Millington, New Jersey, in which we see the testimonials of over 2,000 farmers that are using the Acme Pulveriziug Harrow, Clod Crusher and Leveler. They express their highest approval of it, and say that the g ound is better pulverized by it by one rack than by two of the ordlnary harrow.

Notes on Clovers and Grasses.

A popular method of renovating a worn out soil is by means of green manuring. It can only be profitably practiced in light sandy soils and heavy soils which are deficient in vegetable matter. The best time for plowing under is just before the time of flowering. In England the crops used for the purpose are buckwheat, rye, white mustard, rape, vetches and clover.

The best crop for green manuring is the one that will take the most nutriment from the atmosphere and from the subsoil. These offices are best filled by red clover and lucerne. A dry season and a drained soil are best, for then the vegetable matter decays more rapidly, which process is prevented in a water-logged soil. Green manuring is preferable to summer fallowing for the reason that in the latter the nitrates are lost, while in the former they are preserved in the surface soil. The covering of the soil with clover helps to kill the weeds, and sometimes a cereal crop may be grown at the same time.

There is a broad difference between clovers and grasses, the former belonging to the leguminous or pod-producing plants, which also include beans, peas, lupin, etc. They are all very rich in nitrogen or flesh-forming constituents. They are a sort of scavengers, and eat food which no other plants will touch. Like hogs, they are not very dainty in their diet. Hence we find that a piece of land, after a crop of clover is taken off, is often richer for other crops, especially wheat, than it was before. It is firmly believed by some of the best authorities that leguminous plants take in nitrogen from the atmosphere through the leaves, which other plants cannot do, and investigators are now hard at work settling the question.

The clovers and grasses best suited for this Province are timothy, red clover, alsike, red top, meadow foxtail, orchard grass, lucerne, meadow fescue, besides our native grasses. There are a few other excellent grasses which do well in some localities, but all should be tested thoroughly in each locality before any large quantity be sown.

Some agricultural writers and authors of seed catalogues do more harm than good in telling some farmers how much seed they should use per acre. This cannot be got at without first weighing the farmer's intelligence and then the conscience of his seedsman. The farmer who does not take a first-class agricultural paper is just as likely to buy weed seeds as anything else, and if they happen to be mixed with a few grass or clover seeds, they may be too old to germinate. But such an assortment is cheap, and the farmer buys it in order to save money. The condition of his soil, of course, corresponds to the seeds used. Our advice, therefore, is : Sow from 5 lbs. to 5 bushels per acre, bearing in mind that the farmer who sows upon his estimate of his own intelligence, is sure to sow too thin.

Stock, as well as land, requires a change of food, and no change can be better than a variety of grasses and clovers. Is a concentrated diet required, it can be obtained in early cut, well-cured clover; is a bulky food in demand, it i furnished by the coarser grasses. But bulkiness and concentration are governed more by the time of cutting and manner of curing than by variety.

There is a great deal of talk about sowing a "nurse" crop with the grasses. It is said to protect the young shoots from the piercing rays of the sun. This may work on the same principle by which a patient should take medicine so long as he remains in ignorance as to how he can maintain his health by natural means. Protection always weakens, and besides a general purpose soil is just as bad as a general-purpose cow. You can change the chemical and physical character of your soil from year to year to suit your rotation, but you can't make two or more crops gro v on the same soil and at the same time with the best results.

Marl as a Fertilizer.

Prof. Kedzie, of the Michigan Agricultural College, has filled a blank which will enlighten many of the farmers of Canada, as well as those in his own State. We have received frequent inquiries with reference to the value of our marl beds, but not having an analysis, we have not been able to give substantial advice. Prof. Kedzie has analyzed several specimens sent to him from different counties in Michigan, and it is not likely that our marls differ much from these in their chemical composition. Marls are valuable in proportion to the percentage of carbonate of lime and magnesia which they contain, but in one of the specimens in the table subjoined there is a small percentage of phosphate of lime, which is exceedingly valuable as a fertilizer.

TABLE OF ANALYSIS OF MARLS IN DIFFERENT COUNTIES IN MICHIGAN.

	Berrien County.	St Joseph County.	Lenawee County.	Otsego County.
Carbonate of lime	79 60	56.16	90.00	80 00
Carbonate of magnesia	4 54	6.00	2.00	2.50
Oxide of iron	1 43	1.05	.....	.....
Clay and sand (insoluble in acid)	13.00	36.79	5.50	16.00
Organic matter	1.43	.....	2.50	..
Phosphate of lime	.....	.....	.....	1.50
	100.00	100.00	100.00	100.00

Carbonate of lime is commonly known as lime stone, from which lime is made by heating it and driving off the carbonic acid. As a fertilizer the carbonate is very mild, and many authorities attach little value to it except as a means of improving the mechanical texture of heavy soils. Marl, as a rule, may be regarded as finely pulverized limestone. The test for carbonate of lime is hydrochloric acid, more commonly known as muriatic acid. When this acid is poured on limestone, a strong effervescence takes place, so that by pouring it on marl, the percentage of carbonate of lime may be roughly ascertained by the amount of foaming or effervescence which takes place. Professor Kedzie gives the following mode of testing:

Mix 1 lb. of the acid with 1 quart of rain water and put this in a bottle for use. Take a tablespoonful of the material supposed to be marl, put this in a large glass or earthen vessel (avoiding metallic dishes) and slowly pour over the material a half teacupful of the dilute muriatic acid. If it is a marl the effervescence will show this fact: if it all dissolves, leaving no residue or but little at the bottom of the vessel, it is marl of good quality. If but little is dissolved and a large residue is left at the bottom of the dish, it is of an inferior quality.

He also gives a simpler test for distinguishing marl from clay, viz.: Place a lump in a basin of water, leaving it undisturbed for a short time. If marl, the lump will crumble down into a diffuse mass; if clay, it will be little changed

In speaking of the value and uses of lime and marl, the Professor does not differ materially from the views already expressed in the ADVOCATE. He considers marl valuable for destroying the acid condition of the soil, as well as for its decomposing influence. He recommends it for light sandy soils containing a good supply of vegetable matter, where the decomposition of the humus is slow, and on "soils that run to moss and bunch grass." But where are such soils to be found? Light sandy soils are already too greedy for organic matter; they decompose it fast enough without the acid of lime, and besides, we have never seen a farmer guilty of putting too much vegetable matter into such soils. The natural drainage of light soils aids in decomposing the organic matter fast enough. The quantity he would use is 50 to 75 bushels of marl per acre, applied on or near the surface and mixed thoroughly with the soil. He also recommends marl for dressing pastures and meadows, adding two or three bushels of salt per acre. In speaking of clay soils, he says that a larger quantity than can usually be obtained at moderate rates would be required in order to produce any material change on the physical properties of the soil. On muck beds or lands having a large excess of vegetable matter he would apply 100 bushels per acre or more.

He speaks of marl as a dose, by which he seems to agree with us that it is more of a medicine than a food, and its use can therefore be avoided by good husbandry. Of course, a few soils are constitutionally deficient in lime, and then marl is a good food. This deficiency can easily be ascertained by experiments.

Marl is a whitish material usually found in layers at the bottom of muck-beds and shallow ponds. Any farmer who discovers such a mine on his lands should look round to see how it can be best turned to profitable account.

Can We Compete in the English Market with Wheat Raised in India?

The astonishing progress made in India in the production of wheat should begin to cause alarm amongst our farmers. The American protective policy has driven England to seek new wheat fields, and she may not cease until she is able to tell us to keep our wheat at home. Americans are trying to console themselves with the idea that it would be more profitable for them to consume their own wheat, just as they are attempting to do with their bogus butter and cheese, but Canadian farmers delight in foreign markets, and they would not like to see their wheat industry destroyed through the recalcitrant policy of the Americans.

But there is another phase of the question. Nothing has deteriorated our soil so rapidly as our excessive wheat growing, which, if much longer continued, may lead to disastrous consequences. Although Canada leads this continent in the production of wheat, yet there are other departments of husbandry to which she is equally well adapted. In the production of fruits, live stock and dairy products, this Province has no peer, and if our farmers could be educated up to a knowledge of this fact, they would not complain of losing their wheat fields. No branches of farming fit better together than those just mentioned.

Mr. J. L. Houser, of Massachusetts, who spent considerable time in India, especially at the Government Model and Experimental Farm, in charge of the Director of Agriculture for the District of Cawnpore, recently published a pamphlet which contains an exhaustive account of farming in British India, as well as some interesting statistics.

Within the past five years about a million acres have been added to the wheat area, without any reduction in the other crops, the total wheat acreage now being 27,600,000, an increase of 111,000 acres over 1883-4. The total wheat yield in 1884 was 260,000,000 bushels, and as cheaper foods, such as rice, fruits, vegetables, etc., are consumed by the natives, a very large percentage of the wheat is exported. Not satisfied with this marvelous rate of progress, the Government of India is still pushing railroads and other public enterprises with commendable vigor and rapidity, and new portions of the country are being constantly opened up. The wheat exports have increased from 3,660,000 bushels in 1879-80 to 35,000,000 bushels in 1883-4. The best wheat regions are the northwestern Provinces, where the soil is largely alluvial, with a fair mixture of clay and sand, and it is said to be in a fine mechanical condition, as well very productive, all the available manure being carefully saved and applied to the land. The average product is 17 bushels per acre for the irrigated portions, and 10 bushels for dry lands. But the figures should not be taken as a criterion for the productive capacity of the soil after taking the crude mode of husbandry into consideration.

The plow consists merely of a triangular piece of wood with a sort of iron bar for a point. This implement merely tears the surface of the soil, and the land requires to be thus plowed about twenty times before a crop can be vouchsafed. The working bullocks are very slender and about half the weight of our oxen. The only other implement used is a sort of a log drawn over the field as a clod crusher. The seed is dibbled in the furrows after the plow. The wheat is sown in Oct. and Nov., and harvested in March or April. The weeding is usually done by hand, and the harvesting by a sickle, an acre being harvested in a day by 12 men. The threshing is done by cattle treading the grain on a hard dirt floor, and the cleaning is done by pouring the grain into the wind with wooden scoops. The cost of a farmer's outfit is estimated as follows:—Yoke of bullocks, $12; plow, 40c; yoke, 15c; leveler, 0c; weeder, 6c; winnowing scoop, 3c; sickle, 6c; water lifter, 50c; total, $13.50.

The cost of raising an acre of wheat is estimated as follows:

Rent per acre	$ 3 50
Cartage of manure	1 20
150 pounds seed	1 65
Plowing twenty times	75
Sowing by hand	15
Watering three times	2 25
Reaping and carrying	60
Threshing	35
Winnowing	8
Total	$10 62

Before the building of the railroad, the cost of transporting wheat from Cawnpore to Calcutta (684 miles) was 57.6 cts. per bushel; now it goes by rail for 18.29 cents. An estimate is made of the difference in the cost of laying Indian and American wheats in Liverpool, which shows an advantage of 16½ cts. per bushel in favor of the former. The following are the figures:

Cost of wheat per bushel in Delhi	62½c.
Railway freight	20¼
Ocean freight	20¼
Total cost per bushel in Liverpool	$1.03¼
Cost of wheat per bushel in Chicago	$1.02¾c.
Railway freight to New York	19¼
Ocean freight	7¼
Total cost in Liverpool	$1.29¼

Mr. Houser makes the following concluding remarks:

In concluding this report, I will state what I think are the advantages and disadvantages of wheat raising in India. First—The wonderful productiveness of the climate and soil. Second—The use of irrigation, on account of which there can be no failure of the growth of a crop. Third—The facilities for inland transportation and cheap ocean freights. Fourth—The variety of seasons, giving the farmer work in the fields every month in the year, thus making the wheat crop almost an extra or surplus one, the other crops supplying the laborers with food. Fifth—The cheapness of labor. All these combined indicate that the wheat-growing power of India will largely increase. The Government is planning in every way to increase the facilities of irrigation, introducing new seed and improved methods of cultivation, and also urging that freights on wheat by the state and other railroads by greatly reduced.

The drawbacks are: First—Heavy storms of wind and rain that cause the grain to lodge just before harvest, when it quickly spoils in the hot sun. Second—Heavy hail-storms, and in some localities frost. The hail breaks the stalk or threshes out the grain. Third—Rust, flies, and locusts or grasshoppers. All these, at times, greatly affect the crops, but they are accidents and expected to occur only occasionally.

A live stock organ actually thinks that "scrubs" may be utilized by poor farmers by "grading them up."

Horses that eat their oats too greedily may be cured of the habit by putting a number of stones, say about the size of a hen's egg, into their feed box.

Harness Polish.

The "Science News" gives the following receipt for making a harness polish: Four ounces glue, a pint and a half of vinegar, two ounces gum-arabic, a half-pint black ink, two drachms isinglass. Break the glue in pieces, put in a basin, and pour over it about a pint of the vinegar; let it stand until it becomes perfectly soft. Put the gum in another vessel, with the ink, until it is perfectly dissolved; melt the isinglass in as much water as will cover it, which may be easily done by placing the cup containing it near the fire about an hour before you want to use it. To mix them, pour the remaining vinegar with the softened glue into a sand-pan upon a gentle fire, stirring it until it is perfectly dissolved, that it may not burn the bottom, being careful not to let it reach the boiling-point; about 82° C. is the best heat. Next add the gum; let it arrive at about the same heat again; add the isinglass. Take from the fire, and pour it off for use.

To use it, put as much as is required in a saucer, heat it sufficiently to make it fluid, and apply a thin coat with a piece of dry sponge. If the article is dried quickly, either in the sun or by fire, it will have the better polish.

Dr. Harvey Reed, of Mansfield, Ohio, says the Popular Science Monthly, after a study of forestry as affecting his own State, concludes that amongst the results of the destruction of the forest and the drainage of the land, are: More wind, more humidity, more rainfall, more dust, more sudden dashes of rain, more sudden changes from one extreme to the other of temperature and moisture, more rapid transmission of water from the periphery to the great basins, robbery of the natural regulators of distribution, and diminution of the common supply of springs and wells. These changes have been followed by a decrease of all forms of malarial diseases and an increase of typhoid fever, catarrh, deafness and chronic pulmonary troubles, and an increase in wind and dust favors the spread of zymotic and contagious diseases.

Mr. A. A. Crozier, of the University of Michigan, has published a thesis on plants. In it he sums up concerning the matter as follows: "It seems to be established that as plants move from the locality of their largest development toward their northern limit of growth, they become dwarfed in habit, are rendered more fruitful, and all parts become more highly colored. Their comparative leaf surface is often increased, their form modified, and their composition changed. Their period of growth is also shortened and they are enabled to develop in all respects at a lower temperature."

The late Arthur Bryant, of Princeton, Ill., had on his lawn a *Catalpa speciosa*, which stood more than forty years uninjured by the severe winters, and made a growth of more than three feet in diameter, says a cor. of the Country Gentleman. I have had both Catalpas an my place at Muscatine for over thirty years, and have never seen one of the *speciosa* injured ofter it became three or four years old, with the mercury sometimes 30° to 36° below zero; but the *bignonioides* often winter-killed, making it unfit to plant for any practical use.

Special Contributors.

A Chatty Letter from the States.

FROM OUR CHICAGO CORRESPONDENT.

The general nineteenth century air of hurry and bustle has so permeated all leading branches of industry that stockmen are not now satisfied with knowing the state of current events; they want to know what is going to be the situation next month, next year, etc. At present the western stockmen are considerably exercised to know what is in store for them in the cattle trade during the present winter. The outlook just at present many of them do not seem to regard as being very encouraging.

The month of December never brought to market so many good ripe cattle as this winter, and not a few stockmen have been thinking that the country is full of both cattle and corn, and that it is hopeless to anticipate anything better toward spring. But this does not naturally follow, since the chief cause of the very good quality of the beef cattle marketed this winter lies in the fact that the weather has been unusually good for out door feeding, rather than to the fact that the number of cattle in the country is large.

Thus far the glut in the market has not been of ripe cattle, but of unfinished stock, and good judges think that while the present winter will bring forward a large number of good fat cattle, the offerings of mature beeves will not be in excess of the demand.

There was some talk lately about the advisability of changing the time of holding the Fat Stock Shows from November to December, chiefly that the cattle might be in better season for the holiday markets, and also that the carcasses might not be in danger of spoiling as some did in November, on account of warm weather. This idea is not good, because at all the previous shows held in Chicago the weather was too cold in November, and the prices obtained in November for the show cattle were higher than those obtained in December for Christmas cattle.

The number of men who contribute to the supplies of holiday stock now is growing surprisingly large, and the business can by no means be said to be a monopoly.

The number of hogs sent from Chicago to Canada is much larger than generally supposed, and as a Canadian writer not long since said, is fully equal to the number of Canadian sheep and lambs that are sent to the States to find a market.

The growth of the sheep trade in the west is quite large, though for some time sheep raisers have been discouraged by the low prices they have received. The depression of the wool trade and the evident hopelessness of keeping a high tariff on importations, have caused woolgrowers to feel very discouraged.

But the mutton demand is increasing, and good fat sheep and lambs have lately been selling relatively better than other kinds of stock. Chicago has made a very rapid growth as a sheep market, chiefly owing to the large development of the refrigerator business.

The bogus butter war continues. The natural butter men are very much troubled at the growth of the bull butter business. The artificial butter men seek to enlist the sympathy of beef cattle growers, by claiming that the manufacture of oleo. oil increases the value of tallow fat very materially. But a western stockman calls attention to the fact that while the manufacture of bogus butter was never so large as it is now, the prices for fat cattle have seldom been lower than at present. Very likely the demand for animal fat increases the profits of slaughterers, as they can sell for oleo. oil what they formerly had to sell as tallow, but the producer has as yet received no benefit.

While the fight between the cow and bull butter men waxes warm, the manufacture and consumption of bogus butter increases at an astonishingly rapid rate.

Depression in England—Politics and Agriculture—Colonial Exhibition—Fall Shows—Foreign Trade—Herds and Herd Books.

[FROM OUR LIVERPOOL CORRESPONDENT.]

The depression in nearly every branch of trade in England continues. Thousands of would-be industrious men are unemployed, and thousands more are only partially employed. In the great shipbuilding districts the direst distress prevails, and the efforts of the charitable to relieve the sufferings of their fellow countrymen are strained to a degree. Of dock porters and laborers in Liverpool alone over six thousand are out of work. The situation is aggravated by the effect of the French bounties on shipping, and the *Surtase de Entrepot*, which are causing cotton to be shipped from New Orleans direct to the continent, instead of being transhipped at Liverpool, as was formerly the case.

The reports from the agricultural districts are equally gloomy. Poverty stalks through hundreds of villages. Men who were formerly in good circumstances are endeavouring to keep up a hollow show, that they may appear as well off as they were formerly. They are engaged in the struggle between a proud mind and an empty purse, and are longing for a return of the good times, which seem to be as far off as ever they were. The poor are steeped in the most miserable poverty. In Lincolnshire men's wages have been reduced to two shillings per day, and it is only found practicable to give three days work a week, even at this price. Many farms in Warwickshire are unoccupied, and the laborers have to look to the landlords, who give an occasional odd job. The workhouses are full to overflowing, and were it not that the workmen's wives manage to earn a little in such work as washing and sew ng, etc., the wolf would enter many a poor man's door. All of these things look gloomy in the extreme, and men of wide experience declare that circumstances point to some form of moderate protection, otherwise the cultivation of the land will cease, when, as one determined farmer exclaimed the other day, "Britain will be shaken to its foundation."

There is no improvement in the meat trade, but the means of transmitting mutton from the Argentine Republic are now being perfected, and, if reports are true, mutton can be landed, from River Plate and other South American countries, in England, at nearly one penny per pound cheaper than the New Zealand and Australian people can afford to ship it at.

The promise attributed to Mr. Joseph Chamberlain, of "three acres and a cow," has won

many county seats for the Liberals in the general election now brought to a close. In the boroughs fair trade, promoted by the experienced artizans, who are well versed in politics, has won many seats for the Conservatives. But the Liberal victories in the counties far outnumber those of the Conservatives, who, without the Parnellite vote, are in a minority of 82 in the new Parliament. That minority almost exactly represents the number of Irishmen returned to support Mr. Parnell.

As might have been expected, the agricultural laborers who have for the first time exercised the franchise, have supported their unionist leaders. Mr. Joseph Arch, president of the National Agricultural Laborers' Union, and who is well known in Canada, and has visited your Province, has been elected by a large majority. He has defeated Lord Henry Bentinck in his own county, and this is certainly, from the agricultural laborer's point of view, a striking sign of the times. It has been aptly observed that "here, truly, is Gurth at last standing upon equal terms with Cedric, and overmastering him in a fair fight."

The cattle exhibition at Smithfield, London, has this year been a great success. Sir Chas. Tupper visited the show, and a large number of Canadians did likewise. In addition to the Canadian Pacific Railway Company's exhibits of grain and roots, some fine specimens of agricultural produce were shown by Mr. Stockwell, of the Island of Anticosti. A number of ranchmen from the Western States were at the exhibition, but the proposal to put an embargo on pedigree breeders of stock to the extent of 100 dollars per head, of animals sent from Great Britain to the United States, has had a very damaging effect upon that particular trade. The 100 dollars is to be the charge for entering British animals in the American herd book, the Americans themselves only paying one dollar for the like privilege. In the words of a dealer, the embargo means "death to the trade." In Herefordshire alone over one million pounds have been expended in the purchase of pedigree cattle by Americans during the past five years.

The arrangements for the Canadian exhibition in London next year are now being perfected. Nearly the whole of the material that was exhibited at Antwerp has been transferred to the exhibition building in London. The arrangements made by the High Commissioner have secured the whole of the best of the space for the Canadian section. Of course a space of this kind, nearly an acre and a quarter in extent, will contain a large amount of produce, but it is admitted by those who have a sound knowledge of the subject, that Canada has more varied resources than probably any other country, and it will be a great pity if the efforts of the Government are not supported by everyone in your Province. Not only in agriculture, for which London, Ontario, is already well known throughout England, but in petroleum and the products of petroleum, your people ought to be able to make a most interesting exhibit.

It is now almost certain that a measure giving Home Rule to Ireland will be brought before the new Parliament. It is a fight between them whether the Tories or the Radicals shall have the credit of introducing it. Mr. Parnell has played his cards well, and he can now almost dictate his own terms. If he can have his way, one of the first acts of the Parliament in Dublin will be one for protecting Irish farmers against Canadian and American competition. That is the policy he has dictated in some of his recent speeches.

The Herefordshire cattle carried off the chief prizes at the great fat stock show at Birmingham. The extra prize for the best Hereford beast was won by Mr. Robert Workey, Sutfield, Aylsham, Norfolk, with a two-year-old steer. His live weight, sixteen hundred weight, eighteen pounds, however, was exceeded by two beasts in the same class, one, although two months younger, weighing eighteen hundred weight, two quarters, seven pounds. Mr. George Pitt's first prize three-year-old is of great size and substance, weighing nineteen hundred weight, two quarters, at three years and six months old. The Prince of Wales won the first and second prizes for Southdown wethers. The combined weight of his Royal Highness' first prize steer was five hundredweight, two quarters, four pounds.

Reverting to the condition of British agriculture, it may be stated that the markets are now overstocked, and in consequence the prices have fallen so low that the production of most articles can only be carried on at a loss to the producer. As a remedy for this state of things the farmer is advised to increase the production of his commodities, which he cannot do without increasing the cost thereof. Truly it is an absurd remedy, for it can only aggravate the evil; as by increasing the supply—the market being already overstocked—the prices of his commodities must further fall, and yet at the same time the cost of production is increased.

Farmers' Union—Railroad and Elevator Monopolies—Hard and Soft Wheats—Frosted Grain—Twine Monopoly—"Bill of Rights."

[BY OUR WINNIPEG CORRESPONDENT.]

The "Farmer's Union of Manitoba," whose fame has gone abroad as a power for good or for evil, closed its convention last night, lasting four days. Nothing can better show the power or influence of the Union than the bold bids of the party organs of this city for its support. To the credit of the Union, however, party politics have been subordinated to the best interests of the farmer.

For four days past have been gathered together from every corner of the Province, representative farmers, numbering at least one hundred. In the large hall in which they met they formed a body of farmers that few countries could produce. The subjects treated of at this convention were: "Railroads and the People. The C. P. R. Monopoly and the Pooling System as it Affects all Classes in Manitoba and the North-west. The Elevator Monopoly. Grain Standards. The Established Grades and Present Inspection of Grain. Fife Wheat versus other Varieties. Stock Raising, Mixed Farming, Cheese Factories and Creameries. Review of the Present Position and Future Prospects of the Country." It can be imagined that a hundred of the leading farmers of the country meeting together and discussing these questions pro and con, would stir up some lively and instructive debates. It is edifying to hear such statements as: "Gentlemen, the great thing is to be always improving, never going back," from the lips of the father of agriculture in this country, Mr. Kenneth McKenzie. A statement made by the same gentleman will show the extent of the elevator monopoly which the Union is fighting. The statement was that his son put into an elevator 1,800 bushels of wheat and had to give the elevator company 500 bushels of it for storage. Last year, by presenting a fair case and co-operating, the Union obtained from the C. P. R. a reduction in rates which actually put some five cents per bushel of wheat extra in the pockets of the farmer. They are now negotiating with the railroad for a reduction of rates on frosted grain. The rates that have been announced are such that it will not pay to ship frosted grain, and as there is over fifty per cent. of the wheat frosted, the result will be as Dr. Fleming, a member of the Union, informed me, that grain will be left in the country to rot. Unless they can get an important reduction of rates on frosted wheat, fifty per cent. of the product of the country will be totally useless.

Another item of importance that was brought up at last night's meeting is the supply of binding twine. A firm in the east has offered to supply the Union ten carloads of twine laid down at Port Arthur at the sum of ten and a half cents per pound. The dealers here have heretofore charged farmers from fifteen to twenty cents per pound, averaging perhaps sixteen or eighteen cents. When it is known that an ordinary farmer here will pay out fifty dollars a year for twine, it will be seen that the Union is doing a good work in breaking the monopoly on twine.

Another question brought up last night was the advisability of substituting for the Red Fife wheat a softer and earlier variety, such as White Russian, and thereby avoid the early frosts. The general opinion seemed to be that where the Fife could be grown with any degree of success it would be unwise to discard it altogether. This is the wheat for which Manitoba has become noted, the No. 1 hard, and which obtains so ready a sale in eastern markets.

The "Bill of Rights" which forms the political aspect of the question, created an animated discussion as to whether it should be made the test of membership, a few threatening to resign if it were. The majority, however, stood by the famous Bill of Rights that was drawn up at the Convention two years ago. It is well known how that Bill of Rights was adopted by the Provincial Legislature here and a deputation sent to Ottawa to present it to the House of Commons. The various clauses were thoroughly discussed at the late Convention and reiterated by resolution. They condemn the tariff as discriminating unfairly against this Province. They advocate the early completion of the H. B. railway.

It must be remembered that there are people in this Province who look upon the Union as a dangerous thing; especially the Secretary, Mr. Purvis, has been soundly abused. But it must be admitted that the power of the Union is felt, and that they have obtained important concessions for the farmers of this Province.

The annual meeting of the Union will be held in this city next January, at which the officers of the Company will be elected. It is proposed in future to have the Convention and annual meeting on the same day. Important business will no doubt be transacted at the next meeting.

Stock.

A General Purpose Barn and Stables.

Mr. Donald Murray, of Hickson, Oxford county, sends us a rough sketch of a barn, stables, etc., from which we make the following illustration. It possesses some excellent and original features, which are well worthy of discussion. The following is his own description:

"The accompanying illustration represents a barn 54x111, elevated on a stone wall, having a floor running lengthwise and granary outside to one side of gangway entrance to granary from the barn floor. The object in having the granary outside is to have free circulation of air all around it, so as to protect the grain from heating when put in rather damp. The basement is divided off so as to hold all the stock, roots and manure usually kept on a medium-sized farm. The cattle and horses are fed from off the barn floor, the feed being put down in the feed manger (see fig 3). The frame part above the line is built above the floor, to form a hatch, and the part below the line in the basement holds the feed for the stock so that they cannot waste it. This kind of manger can be easily and quickly filled, and the stock is obliged to eat the feed as it is put in—for it will be noticed that the mangers are slatted at the bottem so that the feed cannot be thrown about. The manger is made larger at the bottom, so that the feed will drop down easily. There is also a door at the back of manger, opening into passage at the head of the stock, so that if there be any feed that the stock does not eat it can be taken out, or meal or something put on it so as to make them eat it. Each animal has a water bucket, connected to each other by an iron pipe, and this, when going the width of all the stalls, connects with the water tank in feed-room, thereby supplying all the stock with water when needed. There is also a sliding drawer below the feed manger, and between the water-buckets, which can be taken out into the passage at the head of the stock and cleaned, and turnips or other feed put into it, and returned to its place. The partitions between each kind of stock is tightly boarded up to the ceiling, as the breath of some stock is injurious to others, and each department should have an ample supply of air and ventilation. The floor of the stabling has a gradual slope toward the manure shed, and behind the stock, below the gutter, there is a zinc trough, and a grating in the bottom of the gutter to filter through the liquid manure and carry it into a tank set near the manure pile. This liquid should be applied to the manure pile when getting too dry or fire-fanged. If any farmer wishes a plan of smaller dimensions, this plan can easily be made to suit the quantity of stock desired to keep. I do not advocate boarding and battoning a barn up tight, as that prevents the grain from drying when drawn in rather damp—not to say that every farmer draws his grain in damp, but there will be a few sheaves lying down in the field, and these can be thrown against the boarding in the barn. If there is any person who thinks he has a better plan I would like to hear from him through the columns of your valuable journal."

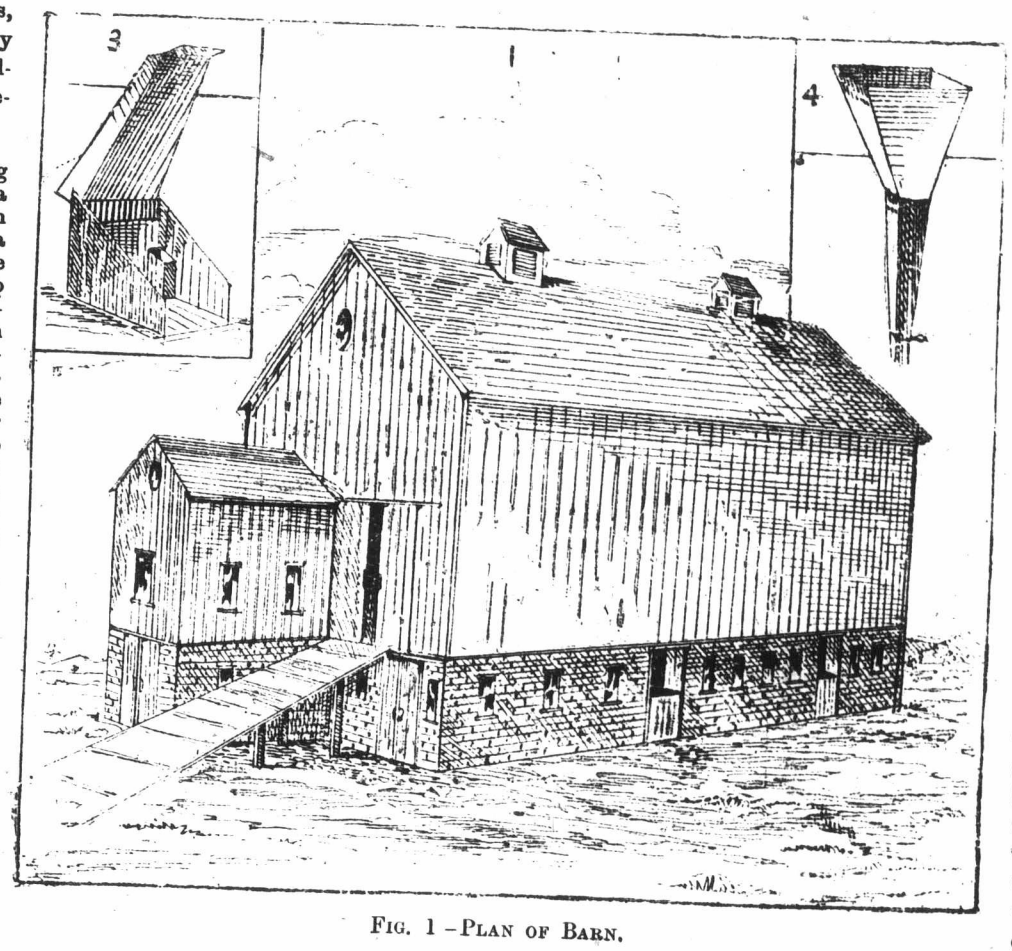


FIG. 1—PLAN OF BARN.

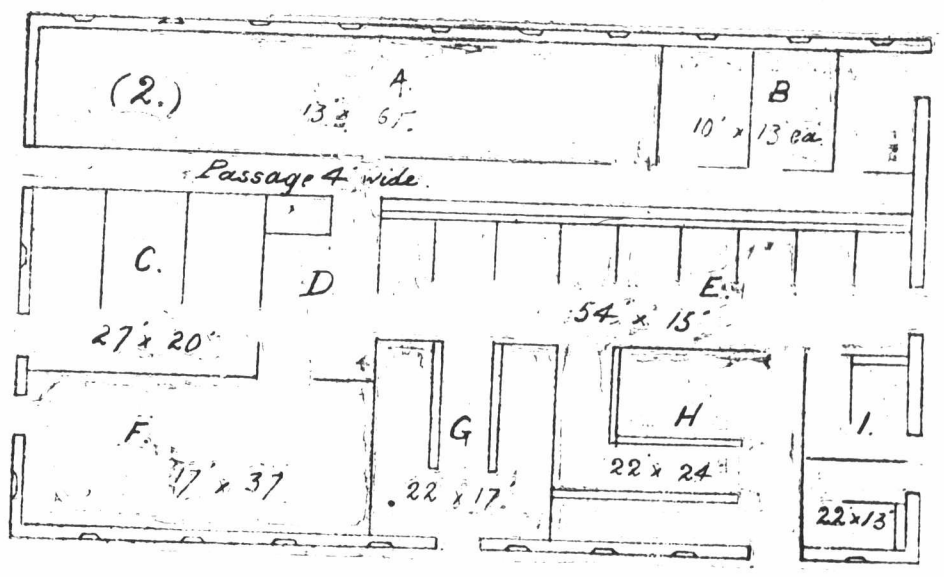


FIG. 2—GROUND PLAN.

A—Root-house. **B**—Box-stalls. **C**—Horse Stables. **D**—Feed-room. **E**—Cattle Stable. **F**—Drive-house. **G**—Hen-house. **H**—Sheep-house. **I**—Pig-pen.

In Mr. Murray's illustration, a fenced yard is drawn extending the whole length of the barn, which we have not represented as it takes up a great deal of space, and we have shortened the length from 111 feet to 91 by cutting off the department for holding the manure.

He does not say what he intends to do with the basement of the granary, but we have converted it into a tool house with a passage in the center, into which a wagon can be backed up to be loaded from the granary directly above, Fig. 4 showing how the grain can be brought down. This arrangement opens through the granary floor, and may be set behind the fanning mill, so that the cleaned grain may drop into the spout. Near the bottom of the spout will be seen a slide, by means of which bags may be filled and loaded with the greatest ease and convenience. There are hinges on the spout near the granary floor, just where the spout begins to widen, by means of which it may be fastened up in a horizontal position out of the way. Mr. Murray says nothing about the arrangement of the mows in the barn. We would suggest that there be no mows at all, and that no posts stand in the interior of the barn. The whole floor should be clear, no obstruction being offered in the turning of a wagon or in any other respects. It is not necessary to have a drive door in the end opposite the granary.

We give a plan of the basement the same as drafted by Mr. Murray. The greatest objection we can see is the position of the horse stable, there being insufficient light for this class of domestic animals. The same objection applies to the cattle stable. It is probable that he intends to throw the roots in through the windows, which would give great advantage to a long, narrow root-house; but we think it would be better if the horse stable exchanged

places with the drive-house, putting the cow stable in the place occupied by the root cellar. In this case the wagon would have to be backed up into the root-house to be unloaded. Light can be secured into the root house by making a partition of slats.

We join issue with Mr. Murray in his manner of handling the manure. This is by far the most important consideration in the arrangement of the stables. The time must soon come when farmers will find this out. His plan is a waste of time, labor and money. The handling of large quantities of manure in the busy seasons is an obstacle which farmers must overcome. According to our arrangement of the stables, the manure from all the houses, except the cattle stables, can easily be heaped together, where it can lie all winter to be fermented.

With regard to the cattle manure, we would dispense with liquid tanks, manure sheds, and straw bedding. We would not slope the gutter towards the outer end of the stable for the purpose of giving drainage to the liquid manure. We would use absorbents under the cattle and in the gutter, and would have a trap-way in the gutter close to the outer end, under which a sleigh or wagon could be backed up and loaded, and the whole mixture, solid and liquid manure, litter and all, could be hauled to the field as fast as made, and spread directly upon the snow or frozen ground. This may seem somewhat radical, but, all things considered, it is the most economical plan. An objection has been raised that it costs so much time to haul the absorbents, but it must not be forgotten that a ton of dry muck has as much manurial value as a ton of the best stable manure, and, besides, most all the work can be done in winter. Another important consideration is this: our flax industry is developing very rapidly, and oil cake can be had at reasonable figures, which can be fed with straw at about one-half the cost of the hay and grain ration. Bran can also be utilized in the same way, so that all the best straw should be saved for food instead of being wasted in litter, by which means a large quantity of solid and liquid manure is also wasted, there being a considerable amount of ammonia lost in the process of cleaning out the stables, fermenting and turning the manure, etc. Our plan would pay from the standpoint of cleanliness alone. Fermenting manure in or around a stable is very unhealthy for the stock, and very injurious to the milk and dairy products. This can all be abolished by our plan, as dry earth absorbs the bad odors, and the manure is not allowed to remain about the building to leave it in a filthy condition.

We leave the suggestions to the consideration of our readers, and shall gladly afford space in our columns for criticism. We are thankful to Mr. Murray for his excellent ideas, and hope to see other farmers follow his good example.

The heading, "the food-cooking folly," startled me a little at first sight, for I scarcely ever even eat an apple or take a drink of water that has not been cooked, says a cor. N. Y. Tribune. But when I found it to apply only to graminivorous creatures I could assent to every word; having made experiments thirty years ago, at considerable cost, which proved the uselessness of cooking their food. Potatoes, however, when fed to pigs, may be an exception.

Trade Prospects.

The press is now full of prophecy on the prospects of a near revival in all departments of industry. We seldom indulge in such speculation, knowing that people of the soundest judgment are frequently very far astray in their calculations.

With regard to our live stock prospects, Mr. G. F. Frankland, of Toronto, who is our best authority in such matters, advises caution, but refuses to sink his reputation in prophecy. He informs us that our live-stock booming has been greatly overdone, other agricultural interests having been too much neglected; that the poultry trade has increased so rapidly that it has caused a depression in other forms of meat; that the large quantities of refrigerator mutton glutting the English market have delapidated this commodity, dressed mutton carcasses now being sold in the English market for 6 to 8 cents per pound; that beef is a cent a pound live-weight less than a year ago—hogs and geese about three cents less; that the wool markets are still worse, and that we can no longer compete with Australia in the production of mutton and wool.

There being a growing demand for well-marbled mutton and for medium wools, the Down breeds of sheep have at present an advantage over the long wools, which have a tendency to lay on too large a percentage of fat. The depression in sheep and wool in the United States has forced breeders to lower the cost of production in the West, as well as improving the quality, thereby creating a demand for Down rams; and importers who exhibited at the recent Chicago Fat Stock Show inform us that they have no reason to complain at the prices they received from western breeders, Southdown ram lambs having brought $35, ewes $30 to $50. In the West there is also an increasing demand for Polled Angus bulls in sympathy with the higher prices paid in the English markets for Polled Angus beef, it being of better quality than that of the coarser breeds. Draft horses and roadsters in Canada have fallen 25 to 30 percent since this time last year, and it is difficult to predict anything definite with regard to the prospects.

Business men are living in hopes of a speedy revival, forgetting that such an event would only be the beginning of another collapse. When everything is cheap, nobody has a right to complain. The present depression exists more in the imagination than in the reality, and if people would endeavor to accommodate themselves to existing conditions, they would thrive better in the end. High, abnormal prices are the unmistakeable forerunners of disaster. By stricter economy and closer calculation in the cost of production, the times would soon materially improve without the expected advance in prices. Consumers must lose as much by high prices as producers gain, so where is the advantage to the whole community?

Judging by the experience of the past, however, high prices and high hopes, by a misnomer called good times, must soon come. There is a repletion of money in all the great business centres, which is one of the most pronounced indications of revival. It is money that people are after; now it can be had exceedingly cheap, and yet there are wailings of lament. If the hankering is after any other commodity, the same remarks will apply. It is hard to say what direction the agricultura booms will take upon the coming revival; but as in the past, it is quite likely that we shall be compelled to waste considerable time, space and money in resounding the notes of warning. With one exception, all the booms which we raised our voice against have already collapsed, and there is still sufficient vitality left in us to brace ourselves against all the coming dangers to our agricultural interests.

The political and social complications and uncertainties in England, the United States and Canada, may retard high expectations in the immediate future. Business people are afraid to embark in speculative undertakings at present; they are waiting to see what will turn up. When something does turn up, the letting loose will go forward with only greater violence.

How to Judge Fat Stock Shows.

Fat stock shows being an offshoot of our general show system, and being supported by our Government, it would be well to inquire into their principles and tendencies. Laudable objects need nothing more than sound arguments for their support; other objects, familiarly known by the name of "boom," are supported by a cry.

Nobody having attempted to advance any arguments in favor of the fat stock show, we are forced to examine into the cry. We do it "just to see what can be done," cries one. "The block is the crucial test," tells another. If a farmer built a glass house over a compost heap in order to raise wheat for exhibition purposes, his fellows would brand him as a lunatic, and yet, on the same principle, he would just be seeing what could be done. His lunacy, however, would be of a milder form, for the bread from the wheat would be quite eatable, which cannot be asserted concerning the brute monster of the show ring in the skating rink. Drawn to its logical conclusions, the reasoning is this: An animal, under high pressure, lays on a large quantity of diseased tallow; therefore, under a lower pressure, it can lay on a less quantity of wholesome meat.

Let us also examine into the cry: "The block is the crucial test." This means that the butcher is master of the situation, that all meat products must be governed by his profits. If he can persuade his customers that "baby beef" is best for the well-being of society, the farmer and the drover must bow to this, and if he can show that well-marbled, three-year-old beef is desirable, then the farmer must change his system of feeding and breeding accordingly. It will not do to say that the consumer demands "baby beef," for its production goes before the demand. Figures go to show that a well-bred steer will put on 2.50 lbs. per day the first year of its life; 1.75 the second, and about 1 lb. the third year. These figures are accurate enough, but they prove that, although figures cannot lie, they can mislead, which may be far worse than lying. It stands to reason that if an animal is stuffed two-thirds of its life, there is little or nothing to stuff the remaining third. What we want to know is, what will be the increase per day the third year if the animal is kept in good growing condition the first two years? Experiments conducted in this direction would benefit

all parties concerned. There is a growing demand for beef with all the "babiness" fed out of it, and it is an example of unparalleled tyranny for a Government to conspire with speculators for the purpose of forcing upon innocent consumers a commodity which they do not want, and which is prejudicial to their pockets and their health.

Barring the prizes, the free advertising, and the vanity for notoriety, the producer operates at a loss, and in order to make the thing a paying concern, he must now feed for several shows, and keep his animals stalled and stuffed several years after the period of their babyhood has expired—just for the purpose of seeing what can be done, and to prove the cruciality of the butcher's block.

How does the matter now stand from the block's standpoint? A few butchers who feed the "society" position of the community, sometimes make a profit by effecting sales at prices far beyond the intrinsic worth of the article; while a larger number of the vain-glorious type, with a keen eye for business, trade in their cruel and ruinous profession for the purpose of widening their notoriety for enterprise. Ald. Frankland, in his speech at the opening of the recent Government Fat Stock Show, uttered one of the keenest satires we have ever heard when he remarked to the effect that the exhibits were grand, just only too good. This thought points out the degrading effect of overdoing good things. All this has arisen from adopting a false cry. If it had been cried that the consumer's stomach was the crucial test, overdoing whould have been impossible, and we could at the same time, "see just what could be done."

A cry is necessary in order to drown the plaintive voice of reason and true inwardness. Business competition and ambition are the base of the whole fabric. In times of keen competition, there is an active demand for farmers to come into our towns and cities for the purpose of spending their surplus earnings—especially during the season when money is a drag in their pockets. The merchants invest liberally in an enthusiasm of some sort, hoping to make a large percentage on their voluntary outlay. If the concern turns out to be a success, all the citizens of the corporation are taxed for its support, and finally a tax is levied on the ratepayers of the whole Province to aggrandize a few business people in a few localities. Government officials spring up whose "biz. it is to enthuse." All this is done for the benefit of agriculture, and for the purpose of giving the poor farmer as good a chance in the struggle for existence as the rich, and an equal share in the prosperity of his grand and glorious country.

Fat or Lean?

A correspondent of the *Country Gentleman* severely criticises the moral tendency of the Chicago Fat Stock Show, points out how the wants of the consumer have been neglected, and how the demand for certain breeds arises from the determination of their champions to beat all competitors, thereby receiving the greater share of free advertising—not from the intrinsic merits of those breeds. These facts would be bad enough, even granting that the judgment of the judges were sound, but when it is considered how many fine breeds are being ruined, and how appallingly untrustworthy those prizes and awards are, then the course pursued by the ADVOCATE with reference to fat stock shows will be viewed in its true light. The correspondent says:

The awards went, for the three-year olds, to the Polled Angus; for the two, to the grade Hereford, and for the yearling, to the Sussex full blood. The Hereford also got the grand sweepstakes, which many thought should have gone to the Sussex, and perhaps would, had it not been for the objection of "baby beef." The meat on block, as a whole, was superior to the show of last year, in that tallow predominated less. Still, the meat would have been better with half the tallow and double the amount of lean. Of all the carcasses, there was only one that showed the right proportion of fat and lean, and that was of the Sussex steer with the shrinkage of 90 days' quarantine upon him. Perhaps the large development of lean in the Sussex meat is due to peculiarities of race, but more likely to the different character of the fattening ration, on the other side. Perhaps no more important or significant fact was made public in the whole course of the show than this striking exhibition of lean. Certainly there was none of more interest to the consumer, unless it be another that Mr. Gillett, some time since, learning the peculiar merits of the Sussex beef, has ordered an importation of thirty head of full bloods, male and female, for his own use. To the consumer, the sightly proportion of fat and lean of the Sussex was at the same time a revelation and a lesson, giving him to know and understand that there are breeds of cattle that, on being long fed and high fed, develop into something more than vast masses of tallow. Or, if this is denied, and it is claimed that all breeds are alike in this particular, than it is made plain that the Sussex have been fed and fattened on different rations, and that when other breeds are served with them, the results will be similar. In a few words, the case of Ohio Belle last year, and that of the Sussex steer this year, have taught the public that high feeding need not reasonably result in an undue proportion of tallow, and when, in future fat stock shows, consumers are given twelve hours of daylight in place of two hours of gas-light to view the prize meat on the butcher's block, they will make awards so decisive that breeders and feeders will be likely to heed them, as all are apt to do when we hear from the court of last resort.

Provincial Fat Stock Show.

The third annual Provincial Fat Stock Show was held at Woodstock, Dec. 9-11, under the auspices of the Agriculture and Arts Association and the County of Oxford Fat Stock Club, Mr. E. W. Chambers being President of the committees of the united Associations. The spacious skating rink was fitted out and decorated specially for the occasion. The list contained 160 entries, including cattle, sheep and hogs, which completely filled the shed without overcrowding.

Whether regarded from the number of spectators or the character of the exhibits, the show was a grand success—due mainly to the energy and public spirit of farmers of Oxford County and the citizens of Woodstock. The number of visitors from remoter parts also contributed largely to its success. The exhibit of dressed carcasses of poultry was fine, though not large. When the excellent character of the judges is added to the other features, it may be safely asserted that the show was the finest of its kind ever held in the Province.

The judges of cattle were Ald. Frankland, Toronto; W. Nanceval, Ingersoll, and W. Dodson, London. Of sheep—E. B. Morgan, Horace Chisholm, and W. J. Anderson. Of pigs—James Mayne, J. Boyne and J. Snell. Of poultry—W. H. Doel and Wm. McNeil.

The best sweepstake steer of any age or breed—prize $40—was awarded to H. and J. Groff, and best female—prize $30—to J. and R. McQueen. The best car lot of 8 fat cattle, any age, sex or breed—prize $30—was awarded to J. K. James, Woodstock. "Red Duke," owned by Messrs. McQueen, took the silver cup, valued at $100, given by the Shorthorn breeders for the best fat Shorthorn steer or cow of any age. In sheep the sweepstakes for the best wether of any age or breed ($15) were taken by J Rutherford; best ewe, $10, by John Kelly, jr In hogs of any age, the sweepstakes ($15) were won by G. Denoon, Milton, Ont.

Some of the best steers were sold at 10c per pound live weight, and some sales of sheep were effected at 4 cents.

Who are our Live-Stock Educators?

If the block be the final judge of the prime steer, we are curious to learn why a trio of judges is not considered complete unless it consists of a breeder, a feeder, and a butcher. This question has become especially practical since the system of judging by ballot has been introduced. The butcher, according to the theory, being the best or final judge of the block capabilities of the steer, he could, under the system of consultation with his fellow judges, not only point out the defects of the steer, but also the defects in the judgment of his associates. But in the ballot system, no whispering being allowed, the two judges, acknowledged by the theory to be the inferior, may outvote the butcher or superior judge, and the probabilities therefore are that the decision will be erroneous. If the block be the crucial test, then the butcher must be the crucial judge, and it follows, especially under the ballot system, that all the judges should be butchers.

Let us examine how the educating process is carried out in natural practice. The butcher purchases say three steers from the feeder or drover. He tells him that this steer is worth so much, that one so much more, and the other so much less. He gives his reason for these variations, all the animals being possibly of the same size and weight, and the ordinary farmer may not be able to detect any difference. The feeders now learn what the butcher wants, and when they purchase from the farmer or breeder, they educate him in the same way. The feeder soon finds out what stamp of stores will produce the most suitable primes for the butcher, and when purchasing from the farmers, he soon teaches them how to breed for the block. We thus see that the farmer is the pupil of the feeder, and the feeder the pupil of the butcher. We never see the farmer or the feeder teaching the butcher. The feeder is the monitor, as it were. This is a natural system of education for adults, and any government which adopts a forced system should be called upon to explain its advantages.

But what we want to ask is this: How can it be explained that those qualified teachers in the show ring can give less justice than one teacher aided by his monitor and the monitor's pupil? When this can be explained to us, then we will uphold the existing system of judging, in preference to the appointment of a trio of butchers. Our live-stock magnates thus

stand condemned upon their own evidence, and they have not the courage to come forward and explain. The fact of the matter is that justice, in all its bearings, is subservient to demoralizing ends, and our system of education, like our Xmas show monster, is a crammed concern—only fit to be immolated on the altar of our *block*-headism.

Wintering the Stallion.

It is the practice of many grooms to neglect the stallion during the autumn and winter months, and commence to feed him up a few months before the approach of the service season. The rearing of the stallion should commence with his sire and dam—if, indeed, not with the grand or great grand parents. The stallion of the future is to come from the stallion of to-day, and a pure stream cannot come from an impure fountain. If the stallion raiser of the future understands his business, and if he has selected your stallion to be the basis of his operations, he will look more sharply after your method of rearing than after the pedigree; for it is the former that determines the intrinsic value of the latter. A defect in the rearing of the stallion may leave its impress on his posterity for all time to come.

The groom, however, may understand very well how the stallion ought to be reared, but the perverted tastes of the farming community in judging by appearances instead of by intrinsic worth may change his whole mode of operation. Not unfrequently do we see the best stallion in the neighborhood passed over because he is not so rounded off and sleek coated as his competitors in the race for patronage. Of a given draft stallion it is sometimes said that he is too light, and the groom will then set to work to increase his weight by putting on a burdensome load of fat. Such an addition to the weight should never be counted, for it is almost invariably made at the expense of muscular tissue, which, in connection with the bone, is the true measure of weight. It is no wonder that many a fine looking stallion is only fit to be cast out of the show ring on account of bog-spavin, scratches, thoroughpin, sidebones, etc., contracted by over-feeding and under-exercising.

Most farmers know the condition in which horses should be kept in order to obtain the best results from their work. If this condition is aimed at in the rearing of the stallion, the greatest procreative and impressive power will then be obtained. Feeding and exercise are relative and sympathetic. For example, a stallion may be reduced in condition either by reducing the ration, by increasing the exercise, or by adopting both measures. By reversing this rule an increase in condition is attained; and it is only by an harmonious arrangement in these particulars that the greatest success is possible. Another grand rule, which may be more valuable to the groom than the price of the stallion is, treat him in such a manner that all stimulants, drugs, condiments, and nostrums may be dispensed with. Anything which will produce muscular development and general constitutional vigor, will, at the same time, increase the sexual or procreative power, which drugging has only a tendency to destroy. Food, cleanliness, air, and exercise are the corner stones of the whole structure.

The feeding just before and during the service season has less to do with success than the treatment during the other seasons. The condition of the animal should therefore be liable to fluctuation as little as possible. If the stallion is a heavy draft, his mode of exercise should be corresponding in kind, but as this is rarely attainable, walking or "jogging" will be a fit substitute. Let the standard of exercise be the equivalent of a walk or "jog" of five or six miles per day, varying this rule according to the feeding and condition of the animal, the quantity of exercise it gets in the open yard, if any, and its constitutional vigor. Roadster stallions should trot 6 to 8 miles daily as the average exercise ration. All stallions should be kept in spacious box stalls, opening into a free yard, if convenient. All the food should be given in the stall, not in the yard, in order that the animal may learn that it goes out for sport and fresh air, and not for food.

The necessity for cleanliness cannot be too strongly enforced. Grooming is much healthier than blanketing, and produces greater warmth. It is the letting out of the heat, creating a circle of warm air around the body, that produces natural warmth, not the keeping out of the cold. Healthfulness demands that the pores of the skin be kept open, and if this cannot be sufficiently accomplished by grooming, an occasional washing with soap and water will prove beneficial, rubbing the body well until dry. Keep the feet, legs, mane and tail clean. It is better to let the animal go unshod. Plenty of ventilation and light are indispensable requisities.

Oats, with a mixture of clean, early cut timothy and clover, should be the basis of the ration, but as all animals delight in a change of diet, other foods should be used to make a variety. Wheat bran is not only a food rich in bone and muscle forming material, but is the best medicine for the bowels,—also the safest and cheapest. Corn and barley should also be given for a change, and when a greater variety is desired, small quantities of wheat and oil-cake may be given. The right condition of the animal can be better determined by the firmness of the handling than by the appearance.

Do not let the cattle go into winter quarters infested with lice, says the N. E. Farmer. Before the weather gets any colder, lousy cattle should be thoroughly washed in strong soapsuds, in which a little carbolic acid has been added. Rub the wash well into the skin in those places where lice are most usually found, and if need be, wash the entire body. Take a sunny day, and rub well with dry cloths until the animal is past danger from cold. We know farmers who wash their whole herds in this way, fall and spring, and believe it pays. Lice are often brought to a farm upon purchased cattle. Before turning such into a clean herd, they should be thoroughly cleaned from lice and nits. A mixture of lard and kerosene rubbed into the hair of the neck and shoulders, and at the roots of the tail, will tend to clear the animals of lice. But like kerosene will be required, and the mixture should be applied sparingly in cold weather, as it will make the skin sensitive to cold. Plenty of good food to keep cattle thrifty, will tend to keep them free from lice.

The Dairy.

Butter-Making in England.

Amongst the English authorities on practical butter-making, Miss Smithard has distinguished herself. She explains her methods in show yards and delivers lectures on the subject. Above all she insists on strict cleanliness in every detail, remarking that neither a first-class quality nor a long-keeping article can be obtained unless this rule be rigidly adhered to. She attributes, in a large measure, the lack of keeping qualities in English butter to the failure of thorough cleanliness. All butter-milk utensils, after use, should have three washings, first, well rinsed with cold water; second, thoroughly scalded with boiling water; third, washed again with cold water. These washings were rendered necessary from the fact that small quantities of acid from the butter-milk lodged in the minute depressions of the utensils. A very small quantity of acid might set up fermentation in a large quantity of milk or cream. All the other utensils should first be scalded and then thoroughly washed with cold water. If this were done immediately after use, and the utensils remained unused for some time, then this washing should be repeated just before use. In further enforcing her methods of cleanliness, she urged that the human hand should not touch the butter in any of the stages of manufacture. There was always a minute perspiration exuding from the cleanest hands, which injuriously affected the butter. Wooden utensils now being procurable, there was now no excuse for using the hands. If the hands, however, must be used, they should first be washed in warm water, then in cold, and finally in butter-milk. The use of the hands greatly affected the keeping qualities of the butter, and certainly did not improve its flavor.

She made her butter from sweet, ripened cream. She used unmixed cream of 24 hours standing in preference to the quicker method of ripening by adding a little well-ripened cream to that which was newly skimmed. The churning should be commenced slowly, and the churn should be well ventilated. If there were not ample means for the air to escape, the buttering process would be hindered, if not prevented. The cream should be put into the churn, as a rule, at from 58° to 59°, and a thermometer should be used. If the cream did not show this temperature, she filled a tin cylinder with hot or cold water and stirred it in the cream until the desired temperature was obtained. She repudiated the use of salt, but as this drug was required to please some people's tastes, she used brine in preference to dry salt, made by mixing 1 lb. of fine salt with a gallon of water, adding this liquid to the butter before removal from the churn, just after thoroughly washing the granular butter with cold water.

Referring to the Normandy or unsalted butter, she said it had driven the very finest English butter out of the English markets, owing to its good keeping qualities, it being as pure and fresh from the dealers as from the churn.

She stopped churning when the butter globules were about the size of a pin's head. She then drained off all the butter-milk from a tap in the churn, allowing it to run through fine muslin in order to catch the escaping particles of butter, which she put back into the churn.

She drained out every possible drop of butter-milk before beginning to wash with cold water. She washed four times in cold water, and even a fifth time if the water did not run from the butter in a perfectly clear state. The butter should be thus washed immediately after butter-milk is drawn. The different washings should neither be hurried nor delayed. The temperature of the water should be about the same as the churning temperature. She worked the butter as little as possible in order to prevent its becoming greasy. During and after working, the butter should be gradually reduced to the temperature at which it should afterwards be kept, say about 45°, when it became quite firm.

Milk as Food.

The milk of each species of mammals, when of normal quality, is a perfect food for its young. Bovine and human milk do not differ so much but what infants can live upon the former, and grow and be perfectly nourished and healthy, says Prof. Arnold. But while milk is a perfect food for infants, it is not perfect for adults. It is, however, perfectly wholesome for the latter when used in connection with other varieties of food which balance its defects. Life and health can be indefinitely sustained in adults on a diet of bread and milk, potatoes and milk, or rice and milk, the excesses and defects in one balancing those in the other, while neither one alone will long sustain either life or health without faltering. Used in connection with similar foods, milk becomes not only one of the most wholesome and nutritious of foods, but also one of the most economical.

There is little difference between the nutritive value of a pound of steak, the bone being counted as weight, and a quart of milk. The milk used with the same quantity of bread and potatoes that would be taken with the steak will support life quite as long, and at less than half the cost of the steak. As a general rule, a given amount of nutriment in meat is twice as expensive as the same amount in milk. There is further necessity for caution in the use of milk. It has been proved to be one of the most fruitful nurseries for every variety of ferment, and one of the readiest vehicles for the transmission of infection, whether taken in from the blood of the milk-giving animal, or absorbed by contact with infected air. But this danger lies only against the conditions under which it is produced and handled. All animal foods are subject to similar objections.

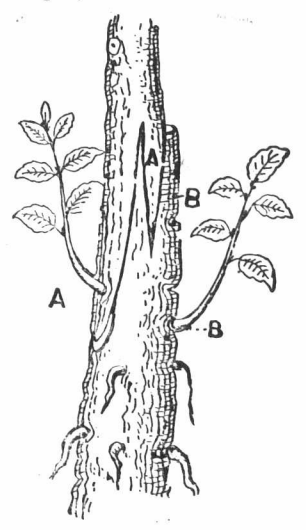
Condensed milk is much to be preferred for adults to milk in its normal condition. The evaporation of more than half of its natural moisture much better adapts its fluidity to natural life; and the addition of sugar to its excessive protein gives a better balance between flesh-forming and heat-producing material for the use of adults, than exists in the native milk, but impairs it for the use of infants. The great advantage from condensing milk lies in its long and almost indefinite keeping. Skim-milk, when used alone, forms a more one-sided diet than milk in any other form. It can be better tolerated by the young and growing than by the old, but it is unsuited to either and should be used in connection with foods that are drier and richer in starch, sugar or fat. Used in this way it can be made to form part of a perfectly wholesome diet. It is better suited for young domestic animals than for human use.

Garden and Orchard.

Planting Apple-tree "Suckers."

A correspondent asks us if it would be advisable to plant the "suckers" which spring out from the roots of his apple trees. This being a question which will interest a large number of our readers we give it special prominence and present the accompanying illustration for the purpose of making the answer plain. If the apple tree is grown from the seed, the suckers, if planted, would produce the same variety of apple as the parent tree, and if the quality is good, no objection can be raised against planting the suckers. However, not one tree in a thousand grown from the seed may produce a good quality of fruit, and none will be the same variety as the parent apple.

In order to obviate this risk, nurserymen have adopted three methods of treating seedling apple trees: (1) The seeds having been thickly sown in spring, the most vigorous seedlings are transplanted into nursery rows when a year old, and budded the second summer; (2) the seedlings are dug up in autumn and root grafted (see the accompanying illustration; (3) the seedlings are planted into rows and grafted at any subsequent time.



We have only to deal with the second case, for the suckers from limb-grafted trees would, of course, produce scrub fruit, and when the seedling is budded, the budding is done a short distance above the ground, so that in this case also the suckers would produce scrub fruit. With root grafting, however, as will be seen by the illustration, the growths may be from the stock or from the scion. The upper portion of the stem, represented by A A, is the scion, and the lower portion, containing the rootlets, is the stock. The illustration shows how the grafting is done. The suckers would most likely come from the stock, but if the grafting is not well done, and the tree is planted so that part of the scion will be below the ground, then underground offshoots may also spring up from the scion. It will be seen that the offshoot at A is from the scion, and the sucker at B springs from the stock. Now if suckers from the stock be broken off and planted, the chances are one in a thousand that the fruit will be of good quality, while if offshoots from the scion be planted, the fruit will be just the same as that produced by the parent tree. It is true that the suckers may be budded or root-grafted, like seedlings, but then no advantage would be gained over the practice of sowing the seeds and operating upon the seedlings.

If the stock is produced from the ordinary apple seed, the inexperienced eye may not readily detect any difference between the suckers and the offshoots without examining the callous, for all the leaves may present the same general appearance; but sometimes dwarf stocks are imported from Europe and used instead of seedling stocks in which case the difference between suckers and the offshoots is quite distinguishable. The Paradise tree is no larger than the currant bush, but when the stock is root-grafted with a scion of the ordinary apple tree, the resulting tree will grow 6 to 8 feet high and will bear in two or three years. The Doucin, another imported stock, will produce a size between the dwarf and the natural standard.

Winter Treatment of Onions.

A warm place never answers in which to store onions over winter. Warmth will start the bulb into growth—a direct blow at its vitality for keeping. Onions keep much better in a frozen state through the winter, provided the thawing out in the spring can be gradual, and provided further, that there is no liability of alternate freezing and thawing during this time.

In a barn loft, covered with hay or straw a foot or more thick, the conditions for perfect keeping are well met. The onions should not be in large piles, but rather in layers of not more than one foot through. By this course of treatment, the risk of keeping is small indeed, and those who assume it may expect a reward in much higher prices in the spring than if sales had been made before winter.—[Popular Gardening.

Ducks in the Garden.

Of what are termed large water-fowls, including ducks, geese and swans, the former are well entitled to consideration for use and ornament about gardens and elsewhere, even if living water for them is lacking. Not but that it is far more desirable that ducks have access to a lake or stream, than otherwise, but they will get along with a small supply of water in a pond or tank a few feet across, in a way that the others could not near so well do.

Kept in such a manner, and ducks will not only be found profitable and ornamental about a garden, but serviceable; they offer the advantages of being voracious insect consumers, and of neither scratching up seeds or roots or flying about mischievously. It is a special recommend that they will destroy those great plagues of the garden, namely, slugs, a thing that even hens will not do. One of our friends once had a garden on sandy soil, which as a result of the heavy manuring needed to fit the soil for vegetation, became terribly filled with slugs, cutworms and other insects; the young plants were destroyed and roses and other bushes greatly marred.

Some ducks were suggested. Eight or nine of these were bought, turned into the garden and given free range. The result was most astonishing; in a few months the insects seemed entirely used up, after which the flock of ducks was reduced to three, and these kept to guard against further trouble.

To be sure, some things can be brought against the keeping of ducks in the garden, but these do not offset the benefits. They have a great liking for strawberries, about the only fruit they will trouble. Keep them from the strawberry enclosure during fruiting time and trouble is averted. The Muscovies eat buds and young shoots,—we can keep other kinds

which do not. But ducks do trample down the plants and tilled earth, and eat young leaves. This is the most serious charge against them, but it may be reduced to a small thing, by not giving them free range at all times. Turn them into the garden only for an hour or two hours daily, and that in the morning when the dew is on the plants. Then they will seek mostly for slugs and similar pests. At other times they may be about the lawn. Where there is no natural bed of water for ducks, pains should be taken where they are kept to provide a change of water in a clean tank every day. This should be located near the water tank or other supply, for convenience.—[Popular Gardening.

Papers for Amateur Fruit Growers.

BY L. WOOLVERTON, GRIMSBY, ONT.

No. IV.

THE PEAR—ITS HARDINESS.

The pear is not quite as hardy as the apple, and therefore the area of its successful cultivation is less extended. In the southern part of Ontario, that is, south of latitude 43½, and even higher than this along the lake margins, the question of hardiness need not be much considered; indeed, almost every variety may be planted with confidence, providing the ground is in a suitable condition. In this region, however, one of the choicest of pears, the Flemish Beauty, is a perfect failure, on account of cracks and spots; and the Seckel, that most famous pear in some American markets, is unpopular on account of its small size. The Bartlett holds the first place as a market pear, except in the county of Middlesex, where it is reported as being somewhat tender.

Between latitudes 43½ and 45, except as the climate is modified by the proximity of large bodies of water and other conditions, the question of hardy kinds becomes prominent. The counties of Huron, Bruce, Grey and Simcoe report the Flemish Beauty as the leading kind, both for quality and hardiness, while they place the Bartlett at the foot of the list. The same is true of Dundas, Stormont and other counties in the east. For hardiness and general excellence, the Clapp's Favorite is growing in favor. It is most highly commended in Ontario county, and also in Frontenac.

North of latitude 45, pears are a failure. Lanark, Renfrew and Russell report them as too tender to be grown there.

Among the Maritime Provinces, Nova Scotia takes the lead in fruit culture, and in some favored sections compares very favorably with southern Ontario. From some reports collected by Mr. Charles E. Brown, of Yarmouth, we learn that in the counties of King, Digby, and Annapolis, all the leading varieties of pears may be grown; and in Yarmouth county, although they fail on the coast, they do well inland.

In Manitoba, and the Northwest generally, pears are a failure. Yet, even for Manitoba there is a gleam of hope, for Mr. Charles Gibb, of Montreal, says he saw in Russia, as far north as latitude 54, very large orchards of Bergamot and other pears; and when these kinds are tested in Canada, some good varieties may be obtained that will endure the cold of the Canadian Northwest.

KINDS FOR SUCCESSION.

There are at least a thousand varieties of pears, and it is obvious that the amateur cultivator would have very great difficulty, without advice, in selecting from any extended list those varieties most desirable for his purposes. To assist in this, and save the intending planter much vexatious disappointment, we will here give a list of a dozen of the very best kinds for succession, beginning with the early summer, and closing with the late winter pears.

(1.) The *Osland's Summer* is a very good pear, ripening about the first of August. The tree is vigorous and a good bearer, but unfortunately rather subject to blight.

(2.) The *Rostiezer* is the best early pear, being nearly equal to the famous Seckel in flavor, but it does not bring its value in the market, because it is below medium size, and its dull, yellowish-green color, though shaded with reddish-brown, does not make it sufficiently showy. It ripens from the middle of August to the middle of September.

(3.) The *Clapp's Favorite* is a very beautiful pear of large size, and of excellent quality when picked in good time. It ripens about the last of August, and frequently contends for the first place with the Bartlett.

(4.) The *Bartlett*, like the Baldwin among apples, and the Concord among grapes, stands first among pears wherever the climate is not too severe. It ripens from the last of August to the middle of September, and may be picked even before it is full grown, and ripened in close boxes or barrels. It is too well known to need any description.

(5.) The *Louise bonne de Jersey* ripens in September and October. It is a very pretty pear of good size and color, and of fairly good quality. Its chief fault is its liability to grow knotty when the tree is not well cultivated and shortened in. It succeeds best as a dwarf.

(6.) The *Sheldon* is an American seedling of medium size and very good. Its color is greenish-yellow covered with light russet, and ripens in October.

(7.) The *Seckel* is also an American pear, and there it is very popular, but it is too small to be popular in Canada. Its flavor is esteemed to be the best of any pear known, and therefore it deserves a place in every home garden It ripens in October.

(8.) The *Duchesse d'Angouleme*, when well grown on quince stock, is one of the largest and finest of dessert pears, but some seasons it grows unshapely. Its season is October and November.

(9.) The *Beurre d'Anjou* is a fine large pear of green color shaded with crimson. The flesh is melting and juicy, and usually of the best quality. It ripens in October and November.

(10.) The *Lawrence* is only medium in size, but is the best early winter pear, and ripens in December. It is an abundant bearer.

(11.) The *Winter Helis* is also of medium size, but keeps till the middle of January, and is of the first quality among winter pears.

(12.) The *Josephine de Malines* closes our list. It keeps until well on in February, and is most satisfactory, so far, wherever it has been tried in Canada.

The *market* for pears is nearly always good. The chief discouragement to pear growers is the blight, and not the sale of the fruit. Every small town in Canada is a market for pears, and when these are stocked they may be shipped to our cities, such as London, Guelph, Kingston and Toronto. The latter is an excellent distributing point, and it is almost impossible to glut that market with early good fruit, notwithstanding the immense quantities of American fruit daily arriving by both land and water. Montreal and Ottawa too are good pear markets, though not quite as good of late as in past years.

During the last summer pears have been unusually low all around, and at one time last summer even the Bartlett would only bring 50c. per basket in St. Catharines market. But every kind of fruit has shared a similar fate, and no doubt another season will give the grower more satisfactory returns.

PRIZE ESSAY.

The Advantages of Planting Nut-Bearing Trees.

BY P. E. BUCKE, OTTAWA.

The advantage of planting any kind of tree in a country like this, where timber is liable to become scarce, and where there are no special regulations for the purpose of keeping up the supply by planting, as there is in most of the countries of Europe, is so obvious, that it would scarcely be worth while to take up space in so valuable a paper as the ADVOCATE, to point it out to so intelligent a class as the farmers of Ontario. But there are special reasons why the nut-bearing trees should have our preference and first attention when planting for timber, for ornament, or for profit.

The nut-bearing trees of Canada may be divided into four families. 1st.—The oak, *Quercus*, of which there are some ten native species. 2nd.—The hickory, *Carya*, four species. 3rd.—The walnut, *Juglans*, two species. 4th.—Chestnut, *Castanea*, one native species. It would be difficult to find four more valuable classes of trees than the above. The oak has been celebrated in poetry and prose from the earliest ages. Its durability, strength, and the beauty of its grain, the polish which it takes, makes it suitable for almost every purpose, from the frame of the most stately ship, to the finest cabinet-ware. This timber has been specially used wherever lasting qualities are required. Any one who has been in Europe will remember the exquisite carved oak work in the cathedrals and many of the churches of the finest sort wherever ornamental wood-work is requisite. The handsome carved doors of the government buildings at Ottawa are of this wood, which show that new ideas have not yet superseded old ones in the use of oak, where strength and beauty are desired. Before me is a descriptive catalogue which contains forty-two varieties of native and foreign oaks. It must be confessed that the acorn as a nut has no special advantages, but the beauty of the leaf makes the tree a favorite for shade, or for purposes of ornamenting public parks and grounds.

The hickory, *Carya alba*.—The shell-barked variety was, at one time, very plentiful in the township of Warwick, county of Lambton, and in many parts of Western Ontario. The timber of this tree grows large and splits freely; when plentiful thirty years ago, it was largely used for rails for fences and fuel. Hickory in combustion is celebrated for giving out more heat than any other wood; with one pound of wood of shell-barked hickory, of hard maple and beech, the value as a heating material stands as follows, respectively, 100, 60 and 65. The ashes of the hickory are very rich in potash; its

sap is fully as sweet as the maple, though, perhaps, not so abundant; when standing in the sugar bush this tree is always tapped. The shell-bark is the most rapid grower of all the *Carya* family. In planting forest trees the distance apart should be 3½ feet by 3½ feet; this gives ample room for horse culture, but if hickories are cultivated one way only, it would be best to set two feet apart in the row and 3½ between rows; the young saplings being valuable for hop poles, walking sticks and similar purposes. The young timber, when of a size to make tool handles, brings a higher price than that of any other. Hickory is used extensively for carriage building, wheel hubs, spokes, &c., for axe handles, pick handles, and for all sorts of tool handles. The best pork packers use hickory wherever it can be procured for smoking hams and bacon, for which purpose no other wood can supply the place. The nut of the shell-bark is the finest for eating. *Carya porcenia*, or pig-nut hickory, produces the toughest and most elastic timber; it is, however, of slow growth, but the tree does not require to be more than from four to six inches in diameter before it is of use. The grain is fine, the wood hard and flexible. For high, broken or rocky land there is nothing better to plant than oaks, walnut and hickory.

Of the walnut *(Juglans)* family (if the hickory is excluded, as it is sometimes classed with them), there are only two species, the black walnut, *Juglans nigra*, and the butternut, *Juglans cinerea*. The black walnut is decidedly the tree of trees, its rapid growth, the extreme beauty of its wood, and the palm-like luxuriance of its foliage, leaves little to be desired, whether we plant for shade, for ornament, for present purposes, or for posterity. This tree grows almost as quickly as the willow or the poplar. I have a number of young specimens on my place which are growing very thritly; but as I considered the walnut question of the first importance, in order that my own opinions might be strengthened, I wrote to my friend, Mr. Thos. Beal, of Lindsay, who has been engaged in rearing these trees for some time, and who has a very fine grove of them. He writes me:

"My walnut trees produced fruit from six to ten years from the nut. The black walnut will grow much more rapidly than the butternut, and is a better tree; the foliage of the latter begins to fall in August, whilst that of the former retains its beautiful green color until the frost comes. I have had them grow four feet high the first year from the seed."

It will easily be seen there would be little difficulty in reproducing this valuable tree wherever and whenever it is thought desirable to do so. In its native wild state the furthest east the *J. nigra* is found is in the vicinity of Belleville, in Hastings county, but the Hon. H. G. Jolly grows these trees with success at Lotbiniere, between Three Rivers and Quebec. So that the trees are perfectly hardy in any part of Ontario, and most parts, if not all over the Province of Quebec. The trees may be found in a cultivated state in many parts of western Ontario. In the streets of Strathroy they are growing as shade trees.

The butternut is also a quick growing tree. It matures much faster than the maple or even the elm. It will produce nuts from seven to ten years from the seed. As an ornamental tree it is only a partial success, as the leaves are produced late in the spring and begin to fall in August, or early in September. Whilst in full leaf the tree has quite a handsome appearance. The branches are straight and stiff, but the ungraceful form of these is modified by the long and drooping foliage. The butternut is the best wild edible nut we have; if grown in quantites it would well repay to have a fixed lever press to crack the nuts, as they require to be set on end whilst they undergo this operation; a good solid iron bed to receive the nut, with a long handle working on a hinge, would be all that is required. In the green state, before the shell begins to harden, all the walnut family are esteemed for the delicious pickle which is made from the nuts. A beautiful brown dye is extracted from the bark, and is used for coloring cotton and woolen yarns, etc. A brown or olive green color is made from the leaves and outer covering of the nut. Gastronomists tell us no oil is equal to walnut oil for culinary purposes, and artists say it is the best for mixing paints, as it dries very quickly. In writing on the advantages of planting nut-bearing trees, perhaps I might be permitted to say that the edible walnut of Europe, *Juglans rigia*, is too tender for almost any part of Canada, unless it may be near the Rond Eau, on Lake Erie. This tree is not sufficiently hardy to stand the cold of the northern part of England. Most of the nuts are produced in Spain and southern France, but the tree thrives well in Essex, Kent and Surrey, England.

Almost all writers on the walnut and other nut-bearing trees state that the nuts should be planted where the tree is to grow, owing to the difficulty of transplanting them. Now, this is very sound advice, if one wants to grow the trees in a situation that can be wholly given up to them, which is by no means always the case. For my own satisfaction I have made several experiments to see why this advice is so invariably given. I found that when the germ bursts the nut a long, straight, bare root is projected directly down into the ground (this is not so much the case with trees produced from seeds). Very few rootlets (spongiols) are radiated from it; the root, when young, if taken up, looks as if it were a skewer thrust into the soil to keep the top from turning over. On digging up the plant at one or two years of age, it will be found a long and large tap root has been formed with few fibrous roots attached; the stem of the plant is considerably enlarged below the ground; the root sticks straight down, tapering to a fine point, making an awkward thing to handle. In removing the seedlings to their future home, this tap root is generally cut or broken with the spade, or shortened for convenience with a knife, and it is this operation which checks the natural growth of the tree. To obviate all difficulties as to future transplanting, I have found the following plan to succeed most effectually: Place the nuts in the ground, as soon as they fall from the trees, as thickly as possible (a hatful may be thrown into a hole if desired). When the seed leaves are matured, take up the plants and pinch off a small portion of the lower part of the root with the thumb nail, and set the plants with a dibble in nursery rows in finely prepared, rich earth; this will make the roots branch, and no further difficulty will be experienced in transplanting. This operation will give the plants little or no check, if expeditiously performed. This plan also succeeds well with horse chestnuts.

The chestnut *(Castanea Americana)* is also a quick growing and handsome tree; the leaf resembles the beech, but has a higher gloss on it; the young saplings are used for hoops. When the trees were plentiful the timber was employed for rail fences and shingles, as the wood splits freely and the grain is straight. The trees are now sawn into boards and made into furniture. Some years ago a cabinet maker in Detroit made a specialty of his commodities constructed from this wood; the writer has now a very pretty bed-room set of his manufacture. The wood is of light color, with a handsome grain, and very durable. I have tried several times to grow this tree from the nuts at Ottawa, but have as often failed. I fear it must be put down as not sufficiently hardy for this climate; it is indigenous over the western part of the Ontario peninsula, and no doubt its growth could be much extended by planting, as is the black walnut. The fruit is pleasant to eat when roasted, but it is not conspicuous for its size. The *Castanea japonica*, of which mention is made in the December number of the FARMER'S ADVOCATE, is said to be exceedingly promising. It comes into bearing at from four to five years of age. Some years ago it was awarded a certificate of merit by the New York Horticultural Society, as a new introduction from Japan of great value and universal interest. The tree is said to be as hardy as the American, and the nut nearly as large as the European chestnut. A cross between this and the native would probably produce valuable results.

The nuts of the old world are all of them superior to the native types on this side of the Atlantic, and it is natural to expect this would be the case, as they have been handed down from generation to generation, and cultivated for hundreds of years. The contact of domesticated animals and trees with civilization always has had a beneficial effect on the wild parents. The reason for this in the vegetable kingdom is probably because the best nuts, or nuts from the best trees, have been selected for seed, or the different climates, soils and circumstances under which they have been cultivated, have improved their products. In some instances the nuts and trees have been shifted from climate to climate, from one part of Europe to another, or from Asia to Europe; by these means in the course of centuries a better class of tree has been secured. All that has been done in the old world will have to be done here before our nuts are up to the standard required by our advanced civilization. Wild nuts do very well for wild men, but the cultivated apple is generally preferred for eating purposes to the acrid crab. Of course if the old world trees are found to suit our short, bright summers and to stand our more rigorous winters, all that requires to be done is to transfer them to our soil, but as a rule this has not been found to work well. The fruits in which we excel, such as the apple, the peach, the blackberry, the red varieties of raspberry, the black caps and the strawberry, which we now cultivate, are all improvements on wild plants native to the soil, or are produced from the seed or plants of old world varieties.

Can any one doubt whilst the labors of the

horticulturist have been so eminently successful in so short a time on this continent, that when a full adaptation has been made of our plants to our requirements, we shall be as successful in the field of nut culture as in the softer and more luscious fruits. For my own part I am perfectly satisfied that when attention has been turned to our nut-bearing trees with a view to improving their products, immense advance will be made. The bisexual nature of the flowers gives an advantage to the hybridist which he has not in any of the long list of fruits we now possess, if a few of the strawberries be excepted. It may be fifty and it may be five hundred years before the nut bearing trees yield their fullest tribute to the genius of man, but no one can doubt, when he sees the advances which have been made in other directions, that the highest results may be delayed, but in the end are sure to be reached.

From the above, intending planters will see that the advantages to be gained in planting nut-bearing trees are four-fold, first, to get the nuts they bear; second, to obtain the beautiful wood which specially belongs to this class of tree; third, to obtain their shade and to add beauty to the landscape; and fourth, with the view of improving the nuts they produce.

Entomology.

The Hessian Fly.

Insects are classified according to the number of their wings, and the Hessian Fly, being two-winged, belongs to the order *Diptera*. The female is slender, of a dark brown color, the wings being a dull, smoky brown. The male is somewhat smaller. The egg is about one-fiftieth of an inch long, cylindrical and pointed at both ends, having a shining, transparent shell.

There are two broods of this insect in the year, the first laying its eggs on the leaves of the young wheat in April and May, the second appearing in August and September, depositing its eggs on the tender shoots of winter wheat.

The egg hatches in about four days after being layed, a larva or maggot being produced, the body being soft, smooth, shining, oval-cylindrical, containing twelve segments. Many of these larvæ find their way down between the stem and the base of the leaf, near the roots, producing a swelling of the stalk, and the plant turns yellow and dies.

The next transformation is the puparium or "flax-seed" stage. This occurs about 30 or 40 days after the fall wheat is sown, and in this condition the insect remains over winter. The body is then brown, and finally turns into a bright chestnut color. In the first warmth of spring these "flax-seeds" rapidly transform into the chrysalis state, soon after which the fly escapes into the air.

This is the life history: now for the remedies. It is necessary for a farmer to understand the life history of his destructive insects; for there are so many humbug remedies, the absurdity of which can only be seen through the life-history spectacles. If much wheat is shelled on the field while harvesting, it is quite natural that the sprouts will be attacked by the fly. Late sowing has been strongly recommended in order that the first frosts will destroy the fly before the growing wheat appears above ground, thereby preventing egg deposits, but late sown wheat is apt to be winter killed, is usually more liable to rust, and to be attacked by the midge. A great deal of nonsense is talked about insect-proof varieties of different field and garden crops, but the wheats which best withstand the attack of the Hessian Fly, are not owing to varieties in themselves so much as to the fact that the hardest and coarsest leaf and stalk is less inviting to this insect. Burning the wheat stubble immediately after harvest has the disadvantage of destroying the parasites which are the worst enemies of the fly. Close pasturing with sheep late in the fall will destroy myriads of the insects. Strengthening the vitality of the crop by drainage, rotation, cultivation and fertilizers is an excellent preventative. Plowing narrow strips around and through the field and sowing them early with a soft, tender variety of wheat, will attract the fly, and by plowing the wheat deep under the insects will be destroyed, and the whole field may be sown to fall wheat.

The great drawback with this, as well as with all other destructive insects, is that farmers will not co-operate, and it is useless for a few of the most intelligent farmers to use preventatives and remedies so long as a large number of their neighbors believe that such calamities are a visitation of Providence, and must therefore be endured.

The Wheat Midge.

This fly is a very minute insect, with long slender legs and antennæ (horns). The eyes are large and black. The wings are somewhat wide and rounded at the outer extremity, and moderately transparent. The body is slender and is divided into a large number of segments. This insect should not be mixed up with the Hessian fly, as is done in the minds of many farmers.

The female deposits her eggs on the heads of grain, and the hatched larvæ are maggots of a reddish color, which feed upon the young kernels of wheat and other small grains—even sometimes upon the grasses. The insect has been known on this continent since 1827, although it had been known in Europe for nearly half a century prior to that date. Its life history has not yet been thoroughly explored. The maggots reach maturity in the latter part of July and in August, when they are supposed to enter the ground and remain there over winter, until the following June. Some maggots, however, have been found in wheat which was left standing long after it became ripe, proving that the insect, to some extent, can thrive on dry food.

From their life history it will be seen that remedial measures must be very limited. If wheat growing ceased for a season or two for the purpose of preventing their ravages upon this crop, it is not known to what extent other crops would be attacked.

Our Friends.

We desire to secure the assistance of our readers in the increasing of our circulation, and shall esteem it an especial favor if they will make a point of showing this number of the ADVOCATE among any of their acquaintances, who, perhaps, might wish to have it sent regularly to them. Specimen copies sent on application.

Veterinary.

Unshod Hoofs.

For the past few years the American press has been teeming with correspondence from farmers who seem to have vied with each other for success in working their horses in an unshod condition. Horse shoeing has become a very scientific process, and a man's lifetime seems to be too short to master the whole situation. Yet the more scientific the trade becomes the worse, apparently, for the horses' feet. Science is all right in her place, but when she comes to kick against nature she shows her weakness.

When the road is too hard for the foot, nature's plan is to fit the foot for the road, not the road for the foot. Man protects the foot against the road. We often find that the foot is the only artificial part of the horse, so that if he is worked to his utmost, the foot is the first thing to give way—on the same principle that the weakest link determines the strength of the whole chain. The excess to which horse-shoeing has gone has given popularity to the cry, "No foot, no horse."

It has been estimated by level-headed veterinarians that nine-tenths of the causes of lameness can be traced to bad shoeing. This has given rise to a demand for veterinary knowledge amongst blacksmiths; but this would be of little or no avail, even if every veterinary plied the trade of horse shoeing, for no amount of patching can make a wrong principle right.

It is true that it would not do to deprive all horses of shoes without a moment's warning, for it must be borne in mind that their feet are artificial, both by heredity and usage. It is true that many of our roads are artificial too, but this is a lame excuse, for it does not follow that artificial feet are required for artificial roads. The whole question of horse-shoeing is well worthy of earnest discussion and experiment. Shall we continue to rear horses until they shall have no foundation, or shall we establish a new race worthy of the foundation on which it stands?

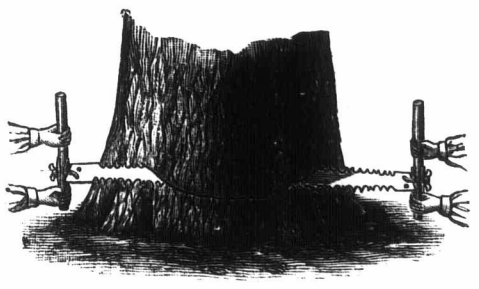
The following article from a correspondent of the N. Y. Tribune is a specimen of many other writings on the same subject and is worthy of earnest perusal:

After spoiling two noble horses I was led to try driving without shoeing. Buying a three-year-old I had the smith remove shoes which she had worn about six months, level the hoofs and rasp the edges of the shell, rounding to prevent breaking up. She had an average good foot. I have driven her two years, and never any horse faster nor longer drives, nor over more hard and stony roads, and her feet are still in good condition. When standing she rests back upon the frog; never stands braced. There are many who do not drive more than two or three times a week; the remainder of the time the horse stands in a narrow stall, on the floor. Soon, to the owner's surprise, "Ned" is lame; stands braced; step shortened. He is taken to another smith, who berates the former shoer, pulls off the shoes with great indignation, pares the feet, nails on some new shoes and warrants now that Ned shall travel all right. Perhaps an improvement for a few days, when the owner realizes that his horse probably is spoiled, sells at a sacrifice, buys again, etc. Now by selecting young horses that have not been shod long (better if not at all) with good feet—an important item always—I am convinced that nine out of ten at least could be driven without shoes.

Barefooted they would escape lameness, drive

better, faster and further, last much longer and keep on less food, save suffering and shoe and treatment bills, which are no small items. The reasons are evident: 1. No restriction to the natural growth of the feet, caused by shoeing, no matter how well done. Shoeing is unnatural. 2. Letting the frog (nature's cushion) down to the ground, giving it exercise, softness, hence health to foot; whereas the shoe elevates the foot, suspends the frog, causing it to dry, becomes hard and dead, following which is contraction of the heel and inflammation of the foot. 3. The frog without shoe serves as a cushion to strike upon, relieving both foot and muscles from the jar of the step; especially can your steed be driven faster down grade; the step not so high as with the shoe, and but little shock to foot or muscle; for the same reason can be driven further in a day. No danger of corking, forging, stumbling, etc. My experience is that with feet properly trimmed the gait is natural, easy and clear. 5. No danger—with any care whatever—of contraction by standing on floor. As a rule, unless the drive is every day, and long at that, the feet will grow faster than they wear. So much for light drivers. But I know of a number of teams (draught horses) always at work that were never shod.

The New Crosscut Saw.



As timber becomes scarcer greater care must be exercised in reducing the waste as much as possible. The great waste made by the axe in felling trees and chopping them up, and sawing with wide-set, upright saws, would, if estimated, amount probably to millions of dollars. The Waterous Engine Co., of Brantford, Ont., have reduced the waste to a minimum with their large circular saws, and have, for their sawmill machinery, obtained a reputation of unsurpassed fame. They are now introducing the double crosscut, narrow blade saw. These saws are made of solid steel; the narrowness of the blade prevents the liability to bend. The handles are adjustable, and can be changed almost instantaneously, so that they can be drawn out of cut, if necessary, or the handles raised or lowered, as required. We give you accompanying illustrations of the saw at work. Fuller particulars you can obtain by referring to the company at Brantford. Their advertisement of engines, etc., appears in this issue. This firm has been long noted for the superiority of their productions, and for the honorable manner in which they have transacted their business. Their business has been yearly increasing in Ontario; now they have an establishment in Winnipeg, to enable them to fill the demands made for machinery in our Northwest. We are pleased to state that they are meeting with the success they richly deserve.

Correspondence.

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

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

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

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

Fish Culture Again.—We are still receiving communications relating to fish culture, some without the names of the writers, which, of course, we do not answer. All the necessary information will be found in the correspondence columns of our last two issues. We have just received the following letter from Washington:—"Since the publication of my reply to your letter of inquiry in regard to Carp, I have received a number of applications from individuals in different parts of Canada. We can arrange to supply them by express direct from New York, if parties are willing to run the risk of loss in transit. If such be their desire, they should write at once, giving the express address to which shipment is to be made. I think, however, it would be wise for all in your latitude to wait until next fall, when I will arrange to send the fish forward at the very beginning of the season, before cold weather sets in."—M. MCDONALD, Chief Div. of Distribution, Washington, D. C., Dec. 19, 1885.

Frozen Wheat in Manitoba—Apple Markets—Prices of Farm Products—Heavy Freights.—I did not observe until too late to mail you anything for last month, that you had thought my previous contribution worthy of insertion in your columns, or I would have kept my promise and sent you some brief account of our doings in this part of the world. The winter set in on us rather early this year, about the fourth of November, when the ploughs were brought to a standstill. This following upon an exceptionally dry fall, which made ploughing on heavy lands almost impossible, prevented many farmers getting their ploughing done. I think, as far as my own observations go, that fall ploughing is behind hand this season. This is to be regretted, for on getting our seed in the ground early in the spring depends our chances of escaping the early frost, and in giving our crops a chance to smother the weeds, instead of the weeds smothering our crops. This season it seems that the percentage of wheat damaged or spoiled by the frost is very large. some authorities placing it so high as nine-tenths. The truth is that except in some few favored localities, such as that to which reference was made in your last issue, at the foot of Riding Mountain and around the Turtle Mountain district, and the stretch of country which the Pembina range of mountains protects, the whole wheat crop is to a greater or less extent damaged. There are farmers living on the western boundary of Manitoba who have had their wheat frozen for three consecutive years. One young farmer this year had fifty acres of wheat on new land that was not worth the cutting even for pig feed, and from what I can learn from those who travel more than I do, these are no exceptional cases. The average yield is about 18 bushels per acre, and the price at present paid in Southern Manitoba ranges from 35 to 65 cents per bushel for wheat, 30 cents for barley, 18 cents for oats. Beef and pork remain about the same, viz., 5 cents per lb. I see from your last issue that American apples are sold in England considerably cheaper than we can get them here. Surely if apples can be bought for export for one dollar per barrel, it would allow a sufficient margin for freightage and profits if they were retailed out to us at $2.50 or $3 per barrel, instead of which we are charged $4 and $4.50. The store-keepers tell us in reply to our grumbling that it is on account of heavy freight charges they are so dear, and assert that they can get their goods to Gretna on the boundary line by the United States railroads on reasonable terms, but when the C. P. R. Company gets hold of it they have to pay very stiffly indeed. That certainly is one benefit arising from monopoly. Competition is the life of trade. And if our legislators in their wisdom had seen fit to allow us to have competing lines of railways, I think the farmers of Manitoba and the North-west would derive many other advantages than the getting of cheaper apples.—R. C. B., Stoddenville, Man.

Farm Fences—Hauling Manure in Winter.—Will you kindly answer me the following questions in your next number: 1. Which do you consider to be the best fence on a farm? I bought a farm this fall which will require to be fenced throughout. There is any quantity of cedar and black ash on the farm. I thought of a straight rail fence, wired top and bottom, as taking up less room than the ordinary fence. 2. Would it be a good plan to draw out my manure this winter and spread it on the snow? I expect my time will be limited in the spring for such work, there being a large stock of manure to be spread.—C S., Wiarton, Ont.

[1. No fence is best for all sections of the country. Your plan seems to be the best under your circumstances. You should, however, consider that your timber will be very valuable in years to come, and it might be cheaper in the end to build a wire fence—taking also the snow drifts into consideration. 2. Every farmer should haul most of his manure in winter, and spread it on the frozen ground or snow. In this case no straw should be used for bedding, but absorbents should be used to suck up the liquid manure. Cut straw, however, is not very objectionable. This method is best adapted to cattle manure, leaving the other manures to be heaped up and fermented.]

Keeping Mice from Trees.—I would like to know if coal or gas-tar would be of any use against the ravages of mice, if put on the trunks of young maples. I had a good many destroyed last winter. I would like to do something to prevent the same occurring again.—J. H. F., Beachville.

[We have never tried coal or gas-tar, as there is an easier and cheaper remedy against the ravages of mice. Hill up a cone-shaped mound of earth against the trees, about 10 inches high, in the fall before the frost comes, taking care that the mound contains no grass, and that the surface be made smooth. These mounds should be leveled in the spring. One man can go over a large number of trees in a day. The best preventative is to keep the surrounding fence corners clean.]

Our Fruit Exhibit in London, Eng.—There is much said about the coming Colonial and Indian Exhibition to be held in London next summer. This is one of those golden opportunities that invariably come sooner or later in lesser or greater frequency to every individual, and to every people. Happy if they are only appreciated and improved, but woe to that man or to that people who lets them carelessly slip by unimproved. In my humble opinion this is one of the best opportunities that has ever been offered to us to advertise our position as a wide-awake and progressive colony of the British Empire, and one in a home they need not be ashamed of, to successfully and for ever dispel those crude ideas so largely held by some that our landscape is a perpetual scene of ice and snow. This ludicrous idea of our frigidity and barreness has been largely catered to by men who should have done better for us, as when Lord Lorne, in his beautiful new book on Canadian scenes, assisted by his royal spouse, has intentionally or otherwise pictured us in our fathomless ice and snow. But in this opportunity, and simply by means of our Canadian fruit alone, how could we so successfully and forever banish this idea of perpetual frigidity in Canada? Had this item of our national industries been properly managed as it should have been, and timely notice given, the exhibit of Canadian fruit that could have been collected might have been something perfectly astonishing, not only to the average Englishman and the sunny Indian, but also even to ourselves. Never has there been such a brilliant and extensive crop of perfectly developed fruit almost without a blemish, as was to be seen over our country this season. But what are the most likely to be the facts in connection with our fruit? The President of the F G. Ass'n., who has kindly consented to act as collector, was appointed and commissioned for that purpose at the very last moment, after the bulk of the fruit crop was disposed of. Up to the first part of November he reported 52 persons only who had sent in fruit for exhibition, consisting mostly of apples, a few pears, a few grapes and a very few plums. Now had this collection commenced early enough, say a month earlier, with proper advertising notices out over the country long before that time, the exhibit of grapes alone would have been sufficient to astonish all beholders and satisfy them of our resources, not to say one word about our strawberries and our raspberries. These would have told a tale of sunshine, of brightness and congenial warmth that would upset all their ideas of ice and snow, and just what we would want them to know. But such seems to be the way of late that our public business is managed. If a valuable chance comes and is graciously offered to us, it is recklessly dribbled away. The Canadian exhibit may be all right for aught we know in machin-

ery, in cattle and in grain, and we are thankful for the enlarged and prominent space allotted to us, but our fruit, ah! we feel that the worst. That would have told a story for us to those wondering and astonished visitors of all climes that can never be so delightfully and successfully done by means of machinery, cattle, or grain, however high the excellence and value of these may be. The fruit sent, in consequence, will be but a few fragments, a paltry pittance and the merest remains after the bulk of the fruitful harvest was disposed of, to represent abroad a country so plentifully and so fruitfully supplied.—B. G., Arkona, Ont.

Fish Culture.—I have seen several letters in your valuable journal in regard to fish culture, especially the German carp, and as anything in that line interests me very much, I will give you my experience in pisciculture. Some three or four years ago I went down to Newcastle, got some 5,000 young trout fry from Mr. Wilmot, who very kindly gave me the use of his large tin cans to convey them to Guelph, his son coming as far as Toronto with me, where he was depositing some 75,000 white fish and salmon trout fry in the lake. The water requires changing every 3 or 4 hours in the cans. I had a large round pond prepared, about 30 feet in diameter and 4 to 5 feet deep, through which flowed a never failing spring. I here kept the young trout for one year, feeding them boiled and raw liver grated up fine, chopped worms, etc. When about three inches long I opened the sluice and let them all down the creek into the River Speed, about 150 yards distant. I preserved them there, allowing no one to fish for two years. Last summer I had magnificent fishing for myself and friends. We got these same trout about 6 to 8 inches long in large numbers. I may mention that there is, about two miles below my place, an old beaver dam, which makes the river from 6 to 8 feet deep in summer, where the young trout found shelter, and dense woods on either side, also any amount of springs flowing into the river on both sides. Now, sir, I was thinking if I could stock this part of the river with these same German carp we have been hearing so much about, what capital fishing and valuable food we would have. The river is at present swarming with young chubb and shiners, which make excellent food for trout (I would suppose for carp also.) In looking over my poultry paper for November, I saw a letter from Mr. Baird, Pittsburgh, Pa., in which he says: "Carp fish do not even require running water; they do better in still water, even in swamps. They delight in mud; they are excellent fish and command a good price everywhere. Each female carp lays from 40,000 to 50,000 fish every year; they increase amazingly fast." I think I will inclose you the whole letter and you can publish it for the benefit of your readers. Now, sir, I do not see, when this is such a paying business on the other side, why our Government does not at once seize the golden opportunity and get the eggs, hatch them out and supply us farmers with the young fish at a moderate figure, or for nothing at all, as the American Government seems to do. These hard times hundreds would take advantage of it and be as successful as I was with my trout (speckled) enterprise. Hoping this may meet the eye of some of our fish-loving M. P. P's. who have some influence at court, and who will set a good example to the rest of us fish-loving farmers, I will not have written in vain, as there are hundreds and thousands of places in the Dominion where, if one-half of Mr. Baird's letter is true, German carp breeding could be made a very profitable occupation for our leisure moments. I think it would be well for you to publish Mr. Baird's letter in full, and use your influence with some of your M. P. friends to get some eggs from the other side at once, and have them hatched out at Newcastle. It would cost the country nothing, and I am sure we would all be willing to pay expenses of express charges, etc., in forwarding them to their destination.—J. A., Guelph, Ont.

[We sincerely thank Mr. A. for his valuable letter, and we are sure our readers will also feel grateful to him. We shall take his recommendations into consideration. Mr. Baird sent us a letter on carp culture which we published in our November issue. We hope to hear from other fish-loving friends, especially those who have any experience in fish culture.]

Land Plaster.—1. Please let me know where good land plaster could be obtained. 2. What effect would it have upon peas, oats or wheat, and also upon roots? 3. Would it exhaust the land? 4. What effect would it have upon the growth of clover and timothy? 5. Would it be most effective upon sand or clay? 6. What quantity per acre would be required? 7. How and when applied?—J. T., Orleans, Ont.

[1. Look through the advertisements of the leading papers, or consult the dealer in fertilizers in your nearest town. Many seedsmen also deal in fertilizers. 2. Land plaster is a sulphate of lime, that is, a chemical union of lime and sulphuric acid, and would benefit all soils deficient in these constituents. Some plants also feed largely on these compounds. Turnips are fondest of the sulphur, and leguminous crops, such as clover, beans and peas, are exceedingly fond of the lime. Experiments have proved that plaster upon wheat, oats and grasses has had a tendency to increase the stem and woody fibre, without producing much benefit to the grain, but good results are usually obtained from its application to clover fields. 3. If used in excess it will exhaust the land very rapidly, but it enriches soils which are deficient in the constituents above mentioned. 5. Sandy soils are most apt to be deficient in sulphate of lime, but clay soils are benefited by its application more as a means of improving their texture. Plaster is also useful for preventing the ammonia in soils from escaping, but the same thing can be effected by keeping the soil rich in vegetable matter. 6. You should test what quantities would be best suited to your soil. 7. It should be spread on the plowed field, and thoroughly mixed with the soil by the cultivator and harrow. We would recommend the use of superphosphate instead of plaster, for it contains a large percentage of sulphate of lime in addition to phosphoric acid, the latter being a very valuable fertilizer for most all soils.]

Soils for Turnips.—As a subscriber to your valuable paper, I wish to ask for some information in regard to turnips. I have just been reading a work entitled "First Lessons on Agriculture," by Egerton Ryerson, in which he states in a chapter on soils that "sandy soils are well adapted for the cultivation of the turnip." I have always understood that turnips do better upon a clay or heavy soil, and have shown the above statement to farmers here, and they express some surprise at the statement. Your opinion through the ADVOCATE upon the matter will be appreciated.—YOUNG FARMER, Richmond, P. Q.

[Little was known about the science of agriculture when Dr. Ryerson wrote his book, and many of his statements must be regarded as theoretic. Good turnips have been grown in all kinds of soils, so that farmers cannot agree as to what soils are best. The turnip is shallow rooted, and must therefore have its nutriment in the surface of the soil. A clayey soil, if the drainage and texture are good, usually produces the best turnips, because it retains its plant food at the surface better than light soils, and it is usually rich in phosphates, which turnips like to feed on; but when light soils are properly fertilized, they will produce as good turnips as other soils.]

Feeding Mangels, Turnips and Potatoes.—1. In feeding mangels to milk cows, is it best to feed them early in the winter or not until near spring? 2. Is it best to feed out all turnips first? 3. I am feeding three quarts mashed barley and peas together with three quarts wheat bran and one peck of potatoes a day. Will it pay to feed higher? 4. Are mangels better than turnips in feeding for milk? 5. Is a peck of potatoes equal to half a bushel of turnips?—E. A. C., Truro.

[1 and 2. As mangels do not keep as well as turnips, it is usually better in practice to feed them first, although otherwise it would be better to feed them mixed together. 3. Your ration is high enough. We wish every farmer could be induced to feed as well. 4. All depends upon the other portion of the ration. Mangels should be fed with a higher ration than turnips, as they contain less nitrogen or caseinforming material. In your ration we don't think you would find much difference in the feeding values of turnips and mangels. 5. A peck of potatoes has not so high a feeding value as a half bushel of turnips.

Milking Once a Day.—Will you please answer the following in the columns of the ADVOCATE: Can as much milk be obtained from cows in winter by milking once a day as by milking twice a day? Is the milk injured in the least by being retained in the cow's udder 24 hours instead of 12 hours, as before?—ENQUIRER, Dorchester, N. B.

[All depends upon the cow and how she has been accustomed to be milked. Some cows may be milked once a day, and others may require three milkings. Never let the udder get unduly distended with milk. If your cow gives a large flow of milk, more than she can easily retain for 24 hours, you should milk twice a day, especially if you have made a practice of doing so. You may, however, milk once a day for a short time before drying off. You will never make a mistake by milking too often; but the danger in not milking often enough is that more milk may accumulate than can be absorbed into the system.]

Appointing Judges.—As the ADVOCATE will be in the hands of your numerous readers before the annual meetings of agricultural societies, I would suggest that more care should be taken in selecting judges, for instance, in horses. It is very unfair to exhibitors to have valuable animals pronounced unsound by men who never had any experience in that class of stock that they are looking over. The directors should have a qualified veterinary surgeon to examine all animals as to soundness before prizes are awarded; also on cattle or other stock. One of the judges should have a knowledge of the export trade. It is impossible for a man to judge butter and cheese who has a pipe in his mouth or a chunk of tobacco. These are only a part of the reforms needed.—C. C. H., Brussels, Ont.

Notes from Owen Sound.—In reference to the past season we have, like most other places in Canada, suffered very much from rust, the Spring wheat being almost an entire failure. Fall wheat was badly winter killed, although what survived the winter turned out well. I may say here that I got one pound of the Martin Amber wheat from you two years ago. Unfortunately the package burst on the way, when only about ¼ lb. arrived. I sowed it and it stood the winter well, and also yielded well. I sowed the product of the ¼ lb. a year past last fall in the middle of a 19-acre field of Democrat. The Democrat was badly killed, but the Martin Amber stood the winter well and yielded a bushel to the stook cut with the self-binder. I have sown the Martin Amber alone this fall. Barley was a fair crop here, but discolored very much. Oats and peas are both good crops and are turning out well. Turnips, where they escaped the fly, are good. Mangels, although very few sown, are an excellent crop. Potatoes are the largest crop known for many years. Apples are not so good as a general thing, although in some orchards a very large crop is harvested.—W. G., Owen Sound.

Curing a Kicking Colt.—I have a two-year-old colt which I have harnessed to the double wagon a few times. She kicks so badly now that I cannot drive her. I know no cause why she kicks. Can you let me know through the ADVOCATE how to prevent and cure her from this bad habit? I have often been benefited by the answers you have given in the ADVOCATE.—B. A., Newcastle.

[There are so many circumstances to be investigated that we fear we can give you no substantial advice. No two horses can be cured by the same remedy. There must be some cause, and that cause must be removed, and the treatment will depend to a very large extent upon the temper of the animal. You had better take her to some man who makes a specialty of breaking in horses.]

Galloway Cattle- Watering Horses—Curing Inflammation.—1. I am asked by a farmer's wife in the State of Ohio to give her the history or origin of the black Galloway cattle of Scotland; whether they are as profitable a stock as others—milking, buttering, etc. I was only twenty years old when I left the old country, and therefore had little experience in them or any other, although there was hardly any other breed, except here and there a small herd of Ayrshires, which were supposed to be better milkers. Now, sir, I ask you to give their history and such information as would be good for the farmers, in your next number. 2. I wish you would also give your opinion on watering horses before or after feeding; which is the better practice? My neighbors say it makes no difference. 3. There are a good many horses dying in my neighborhood with inflammation, some in the bowels and some in the lungs. Probably you could give a remedy.—T. G., Kimberley.

[1. The Galloway is one of the old original breeds of Scotland, and there is nothing definite known about their origin. They are neither deep nor long milkers, but their milk is of excellent quality. They are a beefing breed, and have no competitors in the quality of their beef; but they are late maturers, and do not reach a large size. They are very compact and neatly rounded off, which gives them a handsome appearance. They are very popular in some parts of this country on account of their great hardiness. 2. Veterinarians differ on this point. Large quantities of water should never be given immediately before or after meals, as it interferes with digestion, and distends the stomach too much. If more than a bucketful at a time is to be given, it should be done between meals. For farmers who give little rest to their horses, we would recommend giving a bucketful or less five or ten minutes before and after meals; this quantity becomes absorbed in a very short time, and will do no injury. 3. In Enteritis or inflammation of the bowels, the treatment depends a great deal on the cause of the disease. If there is a veterinary surgeon in the neighborhood, it would be well to get his services. The disease may be brought on by colic, by constipation, by diarrhea, by chills, over driving, by hurts, and a number of other things. To give a treatment that would suit in all cases would be impossible. We will give a list of medicines that may be used. If the bowels are constipated, give laxatives; if the pulse is quick, give aconite; give laudanum to alleviate the pain; apply fomentations to the abdomen; give anodyne clysters. Allow him a comfortable and well ventilated box stall to lie down in. Keep him as quiet as possible. For pneumonia or inflammation of the lungs, if the horse is in high condition, bleed to relieve the action of the heart; if he is thin in condition, give aconite instead of bleeding; give stimulants; apply counter-irritants, as mustard, to the sides over the region of the lungs; give diuretic medicine freely; give soft and nutritive food. Keep him in a comfortable place. Any druggist will be able to make up the proper doses.]

The Household.

Separate Beds.

The London Lancet says that there is nothing that will so derange the nervous system of a person who is eliminative in nervous force, as to lie all night in bed with another who is absorbent of nervous force. The latter will sleep soundly all night, and arise refreshed in the morning, while the former will toss restlessly, and awake in the morning fretful, peevish, faint-hearted and discouraged. No two persons, no matter who they are, should habitually sleep together. The one will thrive, the other will lose. This is the law. The grandmother with her little grandchild is a case in point. The aged one keeps strong; the little one pines away and becomes enfeebled. A lady in middle life informed us that she habitually arose in the morning nervous, worried and weak, while her husband would sleep soundly all night. The touch of his foot, even, would awaken nervousness and discomfort, while he seemed to be wholly unaffected.

To some of extreme susceptibility the fact that one sleeps with the bed pointing east and west is ominous. It is said by some scientific men to be little less than suicidal for certain parties thus to locate their couches. The proper position of the bed, they say, is north and south, in harmony with the magnetic currents.

Aside from this admitted law, there are other reasons why this plea for separate beds should be heeded. It is a matter of cleanliness and health. Each person should have his own couch as truly as his own seat at the table.

The Return.

BY SYDNEY GREY.

'Twas close upon Christmas, the joy bells were ringing
To tell of the story we fondly revere;
The snow to the earth like a mantle was clinging,
The breath of the Frost King had frozen the mere;
'Twas the time that bids loving hearts love the more strongly,
And the kindly folks think of the poor and ill clad,
When the step that we longed for was heard on the threshold,
And back from the war came our brave soldier lad.

The mistletoe swung from the broad oaken rafter,
And holly was ready to brighten the walls,
Yet we missed in our carols and even our laughter,
The voice of the one who was far from us all.
Good news had arrived of the enemy routed,
But would *he* return to us eager and glad?
Ah! long had we trembled, and wondered, and doubted,
When back from the war came our brave soldier lad.

Dear mother was seated, as well I remember,
Quite snugly and warm in her old elbow-chair,
Just plucking the goose, for you know in December
The housewives make ready their daintiest fare.
We girls mixed the pudding mid fun-seeking chatter,
Though truly our hearts were a litile bit sad,
When Bruno jumped up with a terrible clatter,
And there at the door stood our brave soldier lad.

Swift welcome we gave him, half smiling, half tearful,
The young ones were all nearly wild with delight;
And my father's face looked so happy and cheerful
To see his forebodings put fairly to flight.
That evening how sweet was our song of thanks giving,
And oh! what a glorious Christmas we had,
When we knew that our loved one was still with the living—
When back from the war came our brave soldier lad.

Family Circle.

CAUGHT AT LAST!

What? I! I love! I sue! I seek a wife!—SHAKSPERE.

It was November of '62. I had been spending a year in Egypt and the Holy Land, literally exiled from my native shores by the shamefacedness of the husband-hunting mothers and daughters of old England. Chased from the summit of the Pyramids by a speculative widow, I fled like a stricken deer to hide my head in the almost untrodden solitudes of the Upper Nile. For some there is no escape. Here, on the very confines of Nubia, fully five thousand miles from home, my felucca was boarded one morning by an Anglo-Saxon sister, bespectacled and bewigged, who very nearly assaulted me into matrimony. In fact, it was only after the most fearful struggles that I escaped at all. It was one of my fiercest encounters,—a tussle for life and freedom. I never think of all I went through on that enterprising female's account without a shudder.

In very desperation, I returned to London. I had visited nearly all the capitals of Europe, in hopes of finding some change, some variety, to relieve the sickly monotony of my life. In vain. Whether I had to do with witty, vivacious Frenchwomen, with aristocratic Austrians, with coquettish Spaniards, or with the high-bred, blue-eyed beauties of my own country,—one and all had daughters to marry, one and all knew that I had a title, and a rent-roll amounting to forty thousand a year. My first step in London was to hasten to my club, and after leisurely digesting my breakfast and the *Morning Post*, I took courage to turn over and examine the pile of letters awaiting my return to England. It was with a shudder that I took up one from my aunt, Lady Castle-Connell. I knew her ladyship of old. Over and over again she had endeavoured to entrap me for her eldest daughter, Lady Eudocia Connell, a fright with a dreadful squint, and red hair to boot.

I took up the pink and scented missive rather nervously, much in the manner I had seen practised in the East, when letters arrived by a ship which had been in quarantine. I looked at the direction, and then laid it down again, and lighting a cigar, puffed and cogitated. Should I open it? Depend upon it, it is merely to ask for a loan, or to say that "Darling Eudocia is looking pale and thin. What do I advise?" &c.

Perhaps the post-marks, which informed me that my dear aunt and cousin were at Vienna, at last reassured me. At any rate, no immediate danger could result from the opening of the precious document; so, resolving to sacrifice my own private feelings and wishes on the altar of family affection, I deliberately broke the seal. Imagine my joy! picture my astonishment! In the very first sentence my aunt informed me that darling Eudocia was married.

"You will, I am sure, be surprised, dearest Courton, to hear that your cousin Eudocia is married," wrote her ladyship. "Soon after you sailed for the Mediterranean, my poor darling's health began to decline, and Dr. Halton recommended an Italian Winter for her. Of course, every other consideration was sacrificed to the possible benefit which might accrue to my child, and we accordingly went to Rome. There we found Lord Laneton, an old friend of my poor husband's. He visited us a great deal, and attended us everywhere, which I thought, considering the former intimacy between the families, extremely natural. At last, to my great surprise, he one day informed me that he had made Eudocia an offer, and that she had accepted him, conditionally on my consent.

"It was, as you can imagine, joyfully given, for though Lord Laneton is seventy, and therefore it is not probable that my daughter will long enjoy the entailed property, there is a fine, unentailed estate which he has settled upon her, besides a very large fortune in the funds. I am sure you will be amused, my dear nephew, at finding your unbusiness-like aunt so thoroughly 'up' in such details.

"I was desirous of returning home immediately, in order that the marriage might take place in London; but Lord Laneton was anxious to avoid even that delay, and begged for as quiet a wedding as possible. Eudocia is so gentle, she actually acceded to these, I must confess, to me, apparently unreasonable demands, and my son-in law (it seems so funny to write it!) rewarded her deference to his wishes by presenting her with a splendid set of opals and diamonds. Indeed, he has been most liberal to us all, and Eudocia will have a princely establishment.

"I have been here in Vienna a month; I could not bear Rome without my child. Even here I am sadly lonely. Mine is indeed a cruel position, forced as I am by want of means to spend Christmas in a foreign land. Cannot you come to me? It would feel more homelike, less miserably alienated from all natural ties than it does now. Do not refuse me. You would really like Vienna now. The society this winter is excellent, and the English are greatly in favour at Court." &c., &c.

I heaved a huge, selfish sigh of relief. Here was one steel-encased automaton the less, to worry, force, or cajole me into the dreaded matrimonial yoke. How I loved Lord Laneton! I believe that had he appeared before me at that moment, I should have fallen weeping on his neck and blessed him as my deliverer.

In the fulness of my heart I hurried to Hancock's, and after incurring the fatigue of choosing a gift worthy of the new-made bride, actually wrote to my aunt accepting her invitation. I felt perfectly safe in doing so, for I remembered that my aunt's second daughter, little Effie, must still be in short petticoats. The remarkable circumstance was indelibly impressed on my mind from the fact of my having, in a moment of unwonted generosity, when Lady Castle-Connell came to see me at Eton, expended all my pocket-money in the purchase of a huge doll for my baby cousin, and being minus many pounds of sausages in consequence. I wonder how it was I used to like sausages!—I suppose my constitution was different then.

Having thus made up my mind that Vienna was safety, so far as I could be safe, I resolved to hasten my movements as much as possible; for Crawley (he is a college chum of mine) came down to White's, and told me that my enemies the Belgravian mothers had scented my approach, and were already seeking to devour me. In two hours from that time I was starting for the Continent.

It was only nine a.m. when I stopped at the hotel in which Lady Castle-Connell resided. My inquiries for her ladyship were answered by her confidential servant Larry, *alias* Mr. Moore. I believe he thought the former appellation would "betray his country," which he felt sure his English never would. He was an old friend of mine, for he had formerly been game-keeper on my uncle's estate, and had first taught me to handle a gun. He told me his mistress was still in her room, not expecting me so early, and that she begged I would wait in the drawing-room until she joined me; and then, having delivered his message; and made me as comfortable as circumstances permitted, he proceeded in his own irresistible manner to recount to me the events which had taken place since I had last seen her ladyship. Though he took the Castle-Connell honor much to heart, I found him on the whole not displeased with my cousin's marriage.

"For in throth," said he, "though he is but a poor old spalpeen of a lord, (saving your ladyship's presence,) yet Lady Eudocia might have found it a hard matter to find another with such a mint o' money. If it were Lady Euphemia now!"

Even on this hint I neglected to inquire about my cousin Effie. Lulled in fatal security, no good angel interposed to save me from danger. Without putting a single question, I dismissed the man, and stretching myself full length on the sofa, went to sleep, but I was awakened by a burst of laughter close to my ear, and spring up half asleep, nearly knocked my head against that of a young lady, who leant over me, apparently overcome with amusement.

I was virtuously indignant. It is not at all agreeable to be caught asleep by any one, much less by a syren in crinoline; one is sure to have one's mouth open, or to be snoring, or doing something equally disgusting. It was, then, in extreme confusion that I put myself in a more graceful position, and commenced my apologies—"I was waiting for Lady Castle-Connell, but as she did not appear ready to receive me, I would beg to withdraw," &c.; and, with a bow worthy of Sir Charles Grandison, I prepared to leave the room.

I had already reached the door, when the lady, mastering her uncontrollable merriment, sprang towards me, and said, seizing my hand, "Don't you know me, Cousin Courton? Why, I am little Effie!"

My eyes opened to their fullest extent. Was it possible that my lady could call herself the mother of anything so free from affection as my cousin appeared to be?

"Effie!" I said aloud; "impossible! Why, I left you a child, and I come back to find —— 'Pon my life, you've grown up very pretty."

"Have I?" she said, as comfortably as though compliments from me were things of everyday occurrence. "I am glad you think so. Count Stableski told mamma the same, and so did a gentleman we knew in Rome, last winter,—though I had not come out then. But you see I wear long dresses now," she continued, moving a few paces from me to show the length better. "When Eudocia was married I teased mamma till she consented, and she has even promised that I shall go to the next ball at the Embsssy. But you have had no breakfast," she said, interrupting her elf; "what a shame! I will ring for it directly."

I took advantage of her crossing the room to have a good look at her. My first opinion was confirmed, she was very lovely. Her blue eyes, fringed with long black lashes, betrayed her Celtic blood, while the nose more delicately chiselled, the lips less full than in the Irish race, resembled her Saxon mother. Her cheeks had the freshness of extreme youth; and her figure the roundness which generally disappears with nights of dissipation and days of excitement. Her dress was brown and soft, and did not rustle and sway to and fro when she moved, like most women's do. I wondered how old she could be; looking at her made me feel very antiquated.

"Come and sit down on the sofa by me," I said, resuming my usual drawling impertinent manner. Hitherto I had been unnaturally polite.

"I shall do nothing of the kind," she said, drawing up her slight figure. "I hate your English ways! If you want to talk to me, go and sit on that chair and give me the sofa."

Was language like this ever addressed to an "eligible" with forty thousand a year? I was so surprised, that I forgot to be angry.

"But we are cousins, Effie," said I. "Does not that make any difference?"

"Yes, generally," she replied: but then ——" She blushed intensely, and stopped in great confusion.

"But then—what?" I repeated,—"O nothing!" said Effie.

"But I want to understand this mysterious, 'nothing,'" said I.

"Well then," said she, speaking with an effort, "perhaps it is better that I should tell you at once Before you came, I heard that you were one of those men who fancy that every woman they meet has designs upon them, and I detest men of that sort, You may be quite sure that you are safe with me."

For the first time for years I crimsoned with shame. What a fool I must appear in the eyes of the world, when a mere child could talk to me in this way!

"I am sorry you think so badly of me," I said. "What can I do to induce you to change your opinion?"

"Well, if you like, we will be friends," she replied, and with a charming mixture of childish hesitation and womanly dignity she held out her hand. "To tell the truth," she continued, laughing, "it is no use your doing 'the grand' with me; for ever since I saw you asleep with your mouth wide open I nearly die of laughter every time I look at you."

Breakfast appeared, and Effie busied herself with the coffee; she evidently wished to be a friend by deed as well as word.

I had not felt so free from *ennui* for a long time, and I mentally compared my solitary bachelor breakfasts in London with the pleasantness of my present quarters. I do think that, confiding in Effie's youth and consequent freedom from designs on my person and property, I should have proposed on the spot, had not the entrance of my aunt changed the current of my thoughts, Her ladyship entered with the contents of the rouge-pot fresh upon her cheeks. I cannot imagine why she persisted in that vile fancy. She was pretty enough for her age, had a finer figure than either of her daughters, and was altogether an elegant-looking woman. She greeted me most affectionately, and praised Euphemia for being such a good little housekeeper.

About a week after my arrival I escorted the ladies to the Opera. Effie loved music, and on her account I had been at some trouble to procure the best available box in the house. Czillag sang, and the whole of the music was admirably rendered. I noticed a crowd of glasses turned towards our *loge*, and looked at Effie, expecting to see the usual young ladyish conscious unconsciousness on her face. To my surprise I saw that the piece had engrossed her whole attention. She leant forward on the scarlet cushions, her lips apart with eagerness; one little hand supported her glowing cheek; the other, ungloved, lay on her lap; and ever and anon, as the heroine passionately reproached her false lover, or bemoaned his desertion, she clinched her slight fingers or let her arm fall listlessly to her side. At the end of the second act, she drew a long breath.

"What do you think of it, Courton?" she asked; "is it not beautiful?"

"Beautiful indeed!" I repeated abstractedly, for I had been watching her and not the heroine on the stage.

Effie turned from me impatiently. Had she expected some more sensible remark? A knock at the door of the box, and a tall slight man entered. He was remarkably handsome, and I felt furious when my aunt and cousin greeted him with every appearance of pleasure, He was introduced to me as Count Stabletski.

I hated the man before I saw him: for ever since I had been in Vienna I had heard of nothing but these confounded Stabletskis, first the count and then the countess. I instantly set him down as some rascally Pole, who imagined my little cousin a millionnaire. Fearing he might be successful made me perfectly savage, and turning my head towards the stage, I left him undisputed possession of the two ladies.

"But where is Pauline?" asked Effie in French.

"She was obliged to remain in with my uncle tonight," was the reply. "He is called ——"

The rest of the sentence was lost, for the count leant forward till his long moustaches almost touched the flowers in my cousin's hair, and I longed to knock the fellow down.

The opera was over, and I was obliged to offer Lady Castle-Connell my arm to the carriage, while the horrid Pole escorted Effie. That night I was nearly in love! Morning cooled my brain. I perceived that my aunt and cousin had combined, and laid a deep plot (in which the Pole had a part) to entrap me, and I was determined not to be entrapped.

I would not, however, expose myself to Effie's sly attempts at fascination. That childish manner was all put on. Women are actresses from beginning to end, and Effie was an unusually practised one. I would not avoid society as I had intended I would rather seek it, and, if possible, I would fall in love with, and marry some foreigner: that would be the best punishment for Effie's duplicity. I would begin that very day. I had arranged to ride with Effie in the Prater, and would there fix on some object worthy of my affection. I remained on the defensive all the morning. Lady Castle-Connell tried in vain to draw me into conversation. Effie laughed, and said that I had fallen in love with some unknown fair one at the Opera, and was unbearably cross in consequence.

Now I never liked being laughed at; I was not at all accustomed to it; and I thought it extremely strange and uncomfortable to be made a butt for Effie's amusement. It was no good trying to stop her, and my only resource was to inform her that the horses would be kept waiting. She did not detain me, but came down in good time—looking lovely in her dark blue riding-habit and little plumed hat. I was not to be caught though by this attention to my wishes: so I assisted her into the saddle without a word. I remember that my heart beat when I held her tiny foot in my hand. At the time I wondered why—I know now.

Our ride was delightful. Effie, like all Irish girls, rode well and fearlessly. Nearly every one we met turned round and looked at her admiringly. I thought her very designing that afternoon. The Pole (I hate the man's name) had been calling on the ladies that morning, and I felt sure that his visit accounted for Effie's extreme amiability towards me The brute wants to induce me to marry Effie, that he himself may make an easy victim of my aunt. He doubtless thinks "maladi" a rich joiciture.

A few nights after our ride in the Prater the long-talked of ball at the British Embassy came off. Euphemia was wild with delight, and for two or three days beforehand expressed such childish pleasure at the thought of coming formally out, that I was almost thrown off my guard: not quite, though, Lady Castle-Connell was too knowing,—she over-reacted herself. She talked so much of her daughter's innocent delight that my old suspicions of the Polish plot was revived.

On the night of the ball I managed to get Mr. C——, the secretary of the legation, to give his arm to my aunt and thus secured Effie for myself.

I am not fond of being encumbered with middle-aged females; they bore one even more than girls; and besides, notwithstanding her duplicity, I had some regard for my cousin, though I had not given up my idea of falling in love with some one else to spite her.

I was looking about me for a chair whereon to deposit my cousin, when a lady entered so extremely beautiful, that a sort of hushed murmur of admiration arose. Imagine the most exquisite Grecian statute, its face illumined by a pair of wonderous eyes, its long waves of hair bound by golden fillets and bright jewels; clothe it in crinoline, and in other respects, modern attire, and you have before you the figure I was looking at.

"Good Heavens!" I exclaimed, touching Effie's shoulder, "how surpassingly lovely! Who is she?"

"Why that is Count Stabletski's sister," she replied. "She is thought the greatest beauty in Vienna. Perhaps you would like to be introduced," she added; rather sarcastically I thought.

I hung back; I was annoyed at finding my Grecian divinity was sister to the odious Pole; however, a pretty woman is worth knowing anywhere, so I went through the ceremony of presentation. The nymph with the wondrous eyes slightly lifted them, and bowed indifferently; then, seizing on Effie, poured forth a long speech in the purest French, expressive of her rapture at seeing her again, &c.

"I only returned yesterday," she said, "or I should have paid you a visit before now. I caught a glimpse of you on horseback from my window. You were with your cousin, I think?"

I had partly withdrawn from the immediate circle round the countess, but she so directed her question that I could not but advance and reply.

"You are very fortunate in having such a lovely cousin," she remarked, as Effie went off under her partner's charge.

The countess did not dance; it was not her style, and she knew it.

I muttered some vapid compliment "that my cousin's beauty was as completely eclipsed by the speaker's own charms as the sun outshines the moon;" and I did but express my thoughts. Countess Stabletski was the very perfection of loveliness—form, contour, and coloring. She must have been beautiful anywhere; and, attired as she was with almost regal magnificence, her head and bust blazing with jewels, she completely dimmed Effie's ideal face; for my cousin's charm consisted far more in refined delicacy of expression than in her really pretty features.

I am not fond of dancing, so I took up my station near the *fauteuil* in which the Grecian goddess was worshipped and rejoiced like a demon when I observed the despairing glances which my lady aunt cast at me from time to time. I can't flatter myself that I enjoyed much conversation with the beautiful Pauline: there were far too many candidates for words and smiles for me to obtain more than a scanty portion, and the principal part of my evening was spent in watching her perfect face.

The guests were departing; and I, forgetting my suspicions, advanced to hand my cousin to the carriage. I had almost reached her, when I saw the Pole, who had made himself so actively obnoxious ever since my arrival in Vienna, offer his arm. I angrily stood aside to let them pass.

"What a consummate flirt!" I thought, as Effie passed me without recognition. I could not bring myself to believe then that any woman from fifteen to forty-five could be oblivious to my presence.

I returned towards the Countess Stabletski, who had risen to depart. A whole crowd of adorers and admirers stood waiting, in hopes of being permitted to hold her bouquet, to cloak her, or to hand her down the staircase. I stood sulkily aloof; I had had enough for one evening, and was determined to make no more advances. To my joy, or rather to the gratification of my wounded vanity, the lovely Pole leant forward and said, "Lord Courton, if you have no duties to perform," and she glanced towards my aunt, who stood talking to the Princess ——, "I would beg you to hand me to my carriage. My chaperon deserted me, leaving me in my brother's charge, and he, too, has played truant and left me alone."

I could not but be sensible of the honor intended me, and with a triumphant glance at the disappointed swains around me, led the countess from the room. I fancied that she leant on me rather more than was absolutely necessary, and in return for the discrimination she had shown in choosing me from among the common herd, I begged permission to call the next morning, which request was graciously granted.

"I want so much to have a long talk with you," she said, with her bewitching smile; "I love your nation: Englishmen alone truly sympathise with my unhappy country."

Her beautiful eyes filled with tears as she spoke; then, mastering the momentary emotion, and fixing them, bright and glowing, on me, as though she would read my very soul, she exclaimed passionately, "Tell me that you too love Poland."

I don't know what the deuce was the matter with me that night: I am almost ashamed to own it; but it is a fact that I, who had withstood the most desperate efforts of the most rabid husband-hunters living—the mothers of Belgravia and Mayfair—became spooney under the ardent gaze of the Polish Circe, and like any love-sick boy fresh from college, told her "I could love anything for her sake."

The next morning I breakfasted in my room. I had resolved to fall in love with the Countess Stabletski, and thus destroy Effie's schemes for an establishment. Fully did I realize the awful change which would take place if I transformed the penniless daughter of an Irish earl into an English peeress. Farewell, then, to that soft brown dress and plain white collar, bought and put on for the express purpose of winning not me, but my broad acres. Farewell to the *tete-a-tete* breakfasts, which I had found so dangerously pleasant: The simple dress, the domestic habits, the winning smiles, would be discarded like a masquerade dress on the very day in which I led my newly-made bride from the altar.

That day and every succeeding one found me with the beautiful Pauline. She was quite free, for she lived with an aunt who was never off the sofa, and her obnoxious brother had taken himself off somewhere. I had had to give satisfaction more than once on her account—to an Hungarian officer, to whom she had been rather gracious before my arrival, and to a fiery Roman Prince. I enjoyed the supreme pleasure of winging both these adversaries.

My aunt was in despair at my infatuation, and actually took upon herself to call me to account for my devotion to "that foreign adventuress," as she presumed to call Pauline. To her horror, I informed her that I should consider myself the happiest man on earth the day that I presented Pauline to her as a niece. Lady Castle-Connell positively shrieked when I made that avowal, and Effie turned very pale. I suppose she did not like to think of the Courton diamonds on Pauline's brow. She had probably accustomed herself to think of them as in her own possession.

Several months thus passed away. I had made the countess a formal offer, and had met with such an undecided refusal, as induced me to remain hanging on in Vienna.

One evening, hastening as usual to Pauline, I found her fearfully agitated. Her breath came by hard, labored gasps, her bosom heaved with emotion, while her glittering eyes and clenched hands showed the volcano about to break forth. I inquired the cause of her sorrow.

"*Lisez*," she replied, in a choked voice, and tossed a newspaper towards me.

I took it up, in hopes of an explanation, but it was in Polish.

Pauline's aunt explained the cause of her niece's agitation. The paper contained the first news of the Warsaw massacres. and my Pauline, with her noble heart, felt every blow struck against her unhappy country like a dagger piercing her own breast.

My admiration and love went on *crescendo*; and, as Spring advanced, and the tiny spark of just indignation wrung from a few agonized hearts, was fanned into a mighty insurrection, I grew almost as enthusiastic as Pauline, and would at one time have freely given my whole fortune for Poland.

Countess Stabletski seemed at last to understand and appreciate my entire devotion to her: and when I again implored her to be my wife, she accepted me, making only one condition—I must win her with the sword's point; in other words, I must join a band of insurgents then waiting in Galicia to cross the frontier. In a moment of infatuation I actually consented. Pauline arranged everything for me, She wrote to some relations in Austrian Poland, with whom I was to remain until the detachment was ready to set out, and even consented to forward about five thousand pounds, which I devoted to the cause of my immorata's country, to the proper authorities.

The night before I started on my wild-goose chase, I returned to the hotel earlier than usual. I considered it my duty to inform my relations of my departure, and gloated in advance over Lady Castle-Connell's anguish when she should find her fine schemes so entirely frustrated; for, in spite of my devotion to Pauline, I think the fair lady still had hopes of my estates, entailed and unentailed.

I entered the drawing-room unnanounced. Effie was sitting on a low chair, and with a book in her lap; but see was not reading; her eyes were shaded by their long black lashes, and she leant her head wearily on her hand. She did not observe my entrance, and I stood a few minutes watching h-r. I remember her attitude exactly, it gave me such a melancholy feeling; I thought at the time her mother had been scolding her. It struck me that the last three months had made a great change in her. The joyous, free-from-care look which had first attracted my attention had totally disappeared, and an assumed gaiety had taken its place.

At any other time I should have attributed this change to the mortification which she must experience, knowing that the Courton coronet would never grace her brow; but that evening I felt spooney. Visions of myself lying cold and stiff under Polish snow, a noble victim in a righteous cause, flashed across my brain, and I mentally composed an affecting notice of my own death for the English papers. I had just finished lamenting the death of the promising young nobleman, had drawn a parallel between m self and Byron, and was stating to whom the various properties devolved, when a sigh from Effie dissipated my dreams.

"Pauline would certainly go into a convent," I unconsciously exclaimed.

Effie looked up, and, seeing who it was, laughed merrily.

"Would she really?" she asked; "may I ask when and wherefore?"

"What are you talking about, little cousin?" I said, endeavoring to pass my soliloquy over without remark.

Effie was merciful. It is a quality very few women possess. She was always ready to forego making a witty remark if she thought it could possibly give pain; so in the present instance she allowed me to turn the conversation.

"What are you doing?" I enquired, seeing her busy herself with some articles of adornment lying on the table near her.

"Do't you see," she replied. "I don't believe you will ever understand the mysteries of a lady's toilet. Look! I am taking the scarlet feather out of my hat, (you said you were tired of that red thing,) and am putting in a white one. You know you promised to take me for a ride to-morrow."

"Why do you not let your maid do it?" I impatiently asked. "I cannot endure ladies to work when I am talking to them: it takes off their attention. I have sometimes found myself obliged to repeat my remarks."

"Oh, mamma cannot spare Cecile just now; she is very busy indeed. "But tell me the news," she said, as she b-i-y adjusted the white plume.

I did not answer; toying abstractedly with the "red thing," I thought over the change which had taken place i- her, and longed to know the reason. She looked up suddenly and exclaimed, "Oh, my poor feather!"

P-or feather indeed! In the course of my reflections I had twisted and crushed the feather until it was unfit to wear, and we both laughed at the sad appearance it presented.

"'Tis all very well to laugh," said Effie, "but what shall I do?"

"Never mind, we will get another to-morrow," I replied.

"A very nice apology for your carelessness," she rejoined. "Don't you know, most u-bie cousin, that new friends can't so easily replace old ones?"

"Can't they?" I said eagerly; "then we ought to be great allies. When you were a tiny child in blue shoes, and I a great rough schoolboy, our friendship had already commenced. Why are you different now?"

"I am not," she replied, averting her eyes; "the change is in yourself."

"Only because you have been so reserved with me of late," I said, totally forgetful of Pauline and the Polish plot. "Be to me as you were when I first came, and you - -"

At this moment Lady Castle-Connell entered. If it had not been for that confounded woman I might now be the happy possessor of two arms instead of one.

Her ladyship was horror struck when I informed her of my plans. I must, on this occasion, give her credit for showing a little unselfish affection, for she must by this time have been hopeless of ever calling me son-in-law. Effie said nothing. When she at last spoke, I turned suddenly; her voice sounded so strange that I thought she must be ill but she looked the same as ever. I do not think Vienna agreed with her; she was fast losing the English roses in her cheeks. The conversation did not flourish that evening, and I took leave of the ladies with a heavy heart.

I have not the patience to relate the series of ludicrous and tragical adventures which attended my Polish expedition. Suffice it to say, that after enduring weeks of frightful hardships, I at last found an opportunity of meeting the Russians in the field and was rewarded by a musket shot in my left arm which rendered amputation necessary. I was carried back to Cracow, and there in the hospital, crowded with the dead and dying, was seized with typhoid fever. I remember nothing more until I found myself in a pleasant, airy, almost English-looking room. I lay in that delightful dreamy state which always attends the first few days of convalescence after a long illness, and for a moment fancied I must be back in Vienna; the worsted box on the table near me looked so strangely like Effie's.

"Alas! there is no such good fortune for me," I exclaimed. "I deserve to be abandoned by all."

A white hand drew back the curtain, and a well-known voice exclaimed, "Oh, mamma, he is saved! He has woke free from fever."

More and more wonderful! How on earth came my aunt and cousin in Poland? Or was I really once more in Vienna? Effie explained the mystery. She told me that, while I lay dying in the hospital, an Austrian officer had by chance discovered my name, and had kindly telegraphed to the British ambassador at Vienna. He had of course instantly informed my aunt of my whereabouts, and she and Effie started off for my relief.

"But where are we now?" I enquired.

"We are still in Cracow," she replied. "Mamma obtained your release from the hospital very easily, and brought you here to the hotel. But you must not talk so much," she said, menacing me with her finger as one does a naughty child.

I was as obedient: it was so delightful to be watched and waited upon by Effie. She wore the soft brown dress which had first won my heart, and moved about the room as quiet as a little mouse. I had forgotten Pauline altogether, or if I did think of her it was with a shudder of righteous indignation, regarding her as the cause of all my misfortune. My love and my arm had disappeared together. At last, I one day inquired for her.

"She is, I believe, very well," said Effie.

"Where is she?" I continued

Neither lady answered, and I repeated my question.

"We will talk of her another day," said Lady Castle-Connell: "you must go to sleep now."

"Not till you have told me about my whilom inamorata," I answered, laughing. "Has she run away with Captain von Tzedlitz, or with Prince Crivelli?"

There is many a true word said in jest in this strange world of ours.

"Do you feel strong enough to hear bad news?" said my lady aunt, approaching my bed-side with an awfully severe countenance.

"Perhaps I may not think it so bad," I replied smiling.

"Well, then, my dearest nephew, I must tell you that that horrid adventuress--"

"Hush!" I said, 'we will not speak ill of her. Come you and tell me about it, little cousin"

I well deserved the sequel to my self imposed romance. At the time of the outbreak in Warsaw, Pauline's lover was in the ill-fated city, and was among the many unfortunates carried off to the citadel. By the influence of his relatives, he at last obtained his release, but only to be sent to the Caucasus to remain there until the rebellion was quelled. Pauline, who was really a patriot, had followed him thither; and, while I lay almost dying in the hospital, became his happy wife.

* * * *

Effie and I have had a little mutual explanation. She wickedly told me that with her it was quite a case of love at first sight; for that, stretched full length on the sofa, with my mouth wide open, I was perfectly irresistible. We are to be married next month.

HUGO VON R.

As Others See Us.

SIR.—I have taken your paper for several years, and I am highly pleased with it, and I think every farmer should take it.—ROBERT MARTIN, Willow Grove.

SIR,—I consider your paper the best for a family's reading I have ever taken, and am much pleased with it in every respect, and wish you success in the future.—ISAAC WHITING, Cainsville.

SIR.—It is with pleasure that I renew my subscription for '86, admiring more and more the usefulness and independent spirit of the ADVOCATE. It well deserves the support of every farmer in the Dominion.—JOHN GIBSON, Millstream, N B.

SIR,—Though times are hard and money scarce, I feel as though we must have the ADVOCATE. I admire the independent stand you take on all questions, and the thorough, practical information for the farmer in every department.—W. J. DAWSON, Cannington, Ont.

SIR,—You will find enclosed two dollars for my subscription for 1885 and 1886. I am very sorry I neglected to send my money for 1885, but will do better in the future. You did me a great kindness by sending on the paper, so my family think they can't do without it. We think it the best agricultural paper printed.—LEMUEL KELLY, Kelvin, Ont.

SIR.—I wish I could get some of my brother farmers to take the FARMER'S ADVOCATE. I think it would make a good many farmers here cultivate their land a good deal better than they do. I think it is the best agricultural paper in the Dominion for useful information for the farmers' interest. I would not be without it for two dollars a year.—A. DIXON, Sunny Lake, Man.

SIR.—Am very well satisfied with the ADVOCATE; have got advice and warning worth a great deal more than the subscription.—WM. CLARK, Meaford.

SIR.—I am very much pleased with your paper. Its coming is hailed with delight. Trusting your success may be unlimited.—FRANK RILANCE Head Lake.

SIR.—I like you paper better every year; think it the best agricultural paper in the Dominion; would not do without it.—C. L. KINGSTON, Brussels.

SIR.—We have taken the ADVOCATE for years and like it well. I think it is taken by all here near us; we take it of the Cramahe Agricultural Society and expect to continue. Wishing you continued success.—W. A. WINN, Castleton, Ont.

SIR.—I am receiving the ADVOCATE regularly and would not be without it. I am taking a large number of papers and must give some of them up, but cannot be without the "ADVOCATE."—THOS. SADLER, Greenwood, Ont.

SIR.—Please send me your illustrated poster to put up in the office. I am well pleased with the ADVOCATE, and think it should have the support of all farmers.—R. A. HAVILL, Haldimand.

SIR.—I have again sent one dollar for my old Familiar Friend. I don't seem as if I could do without its company. I am now left an orphan, and have no one to read it to, but I have some good pleasant evenings reading it to myself. I hope the married men will take the hint and subscribe.—JOSEPH JOHNSON, Newry.

SIR - Enclosed find subscription for two years, 1885 and 1886. And now, sir, I wish to give you my moral support in your struggle for the purity of our agricultural shows. I entirely agree with you, sir. that all horse racing, games of chance, and gambling in all its forms, should be strictly prohibited, at all our agricultural shows. Wishing you success.—JOS. WATSON, Greenbank.

SIR —Please find $1, renewal of my subscription for '86, being my 21st year of subscription. I hope it may continue for the next 21 years as it has in the past. I was only 7 years old when my father settled in Canada bush. I have now been permitted to live 71 years; this may be the last subscription I may send you. Should it be so, I hope my son will be a continual supporter to your ADVOCATE. Wishing you a Happy New Year.—R. GIBSON, Glendale.

SIR.—Please find enclosed $2.25, which will pay for ADVOCATE up to Januray, 1887. I am very much pleased with your FARMER'S ADVOCATE for its many vauluable suggestions about farming and the many timely warnings it gives against the frauds and impositions that unprincipled men are trying to practice on farmers. If the ADVOCATE was taken instead of many of the other magazines with which the country is flooded these days, the rising generation would be far better posted and their minds much better balanced.—WILLIAM MCINTOSH, River John, Pictou County, N. S.

SIR, —In renewing my subscription for 1886, I may say that I have taken the ADVOCATE for the last fourteen or fifteen years, and am highly pleased with the improvements made in it from year to year. In my opinion it stands unequaled. with any agricultural paper, either in Canada or the United States. Its editorials are clear and to the point, and the matter selected is common sense and highly instructive. I would not like to be deprived of it now.—WM. GIBSON, Owen Sound.

SIR.—I intend to take the FARMER'S ADVOCATE as long as it continues so honest, fearless and independent in its articles. I think a paper like it is needed to open the farmers' eyes and keep certain persons in their place. I look for it monthly as a friend. I think it is a great pity there are not more subscribers to it in the country: some are too poor and some that can afford it say they cannot read well enough. We have a volume of the paper printed in 1878 that my father saved when he was a subscriber, which reads as interesting now as if it was new. Success to you and your paper.—JOHN BUSKIN, Euphrasia.

Minnie May's Department.

MY DEAR NIECES,—We feel the dawning of the new year the most appropriate time at which to thank you all for the deep interest shown and expressed in our past efforts. Nothing so stimulates our energies as to have our work approved by the many friends and subscribers; and we will endeavor in the future to deserve and retain your good opinion. Correspondence and contributions from any and all of the friends who have anything to ask or communicate which can interest our readers, are truly welcome.

At this season it is deemed a privilege as well as a duty to form one or more good resolutions, so let us, as a family, see what we can do in that way. Not only *resolve* but *act* as well. In my young days, and I find it the same at the present time, many opportunities presented themselves for doing works of mercy and charity, but were warded off by the common excuse, "no time," providing the demand was distasteful, but not so where amusements were concerned we could generally *make* time for fun. But you must not forget, dear girls, that "Ye are not your own, ye are bought with a price," and you will find upon looking around the world that those very people who are ever ready to lend a helping hand to their fellow creatures are really the busiest and happiest of mortals.

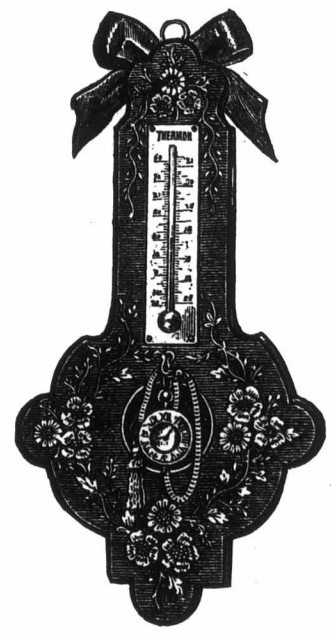
Do my girls ever think how much help they might give, if only by showering a little of their girlish brightness into the hearts and homes that are destitute of love and light. Youth has a particular work designed for it which cannot be performed at any other time. So, my friends, do not allow the opportunities to pass unheeded, especially without a better excuse than "no time."

Now don't you think you could write an occasional letter to your numerous cousins that might please and cheer the members of our large family. There are some, perhaps, less fortunate than the rest, who would like to read a nice, concise letter, and participate even in that small way in your happiness. Try it, one and all; you don't know how it helps a poor, weary, over-burdened one, to feel that off in some other part of the country there is a cousin who has human sympathy and love for the other members of our family. We shall be glad to hear from any nieces, old or new, the more the better. MINNIE MAY.

Work Basket.

BABY'S TOILET BASKET.—The basket is of fancy straw and black polished cane. The inside of the basket is lined with cream color embroidered in chain and feather stitch, with pink and olive silks, and in knotted stitch with gold thread. The cushions and pockets are worked to correspond, and fastened to the basket with satin bows of light pink and olive colors. The handle is twisted with a cord of the same colors, and finished off at the ends with tassels. Round the outside of the basket is a scant ruffle of pink silk, over which is a fringe of the mixed colors used in the embroidery in the basket.

THERMOMETER AND WATCH RACK.—The thermometer is attached to a piece of stiff card cut in the shape of illustration, and covered with peacock blue velvet embroidered with split filoselle. The flowers are worked with white and heliotrope silk, the leaves with olive; the stitches used are satin, knotted overcast stitch and point russe. A hook is added to suspend the watch, and a bow of ribbon is sewn to the top of the thermometer.



THERMOMETER AND WATCH RACK.

At the back s a sheet of stamped paper, gummed on.

The thermometer face can be detached from any of the ordinary ones and fastened to the velvet at each end by having tiny holes drilled or bands of velvet or ribbons drawn across to keep it in place. The flowers would also look lovely if painted on the velvet instead of the embroidery.

BABY'S TOILET BASKET.

PLUSH STITCH—Which is so much used now in art embroidery for making golden rod, sumach, cockscomb and Prince's feather. The flower to be made is first filled in with knot stitch of the prevailing color: a needle is then threaded with button-hole twist, brought up through the design between the knots and a number of strands of filling silk placed over the design, close to the needle. The needle is then passed back through the design at about the same place it came up, catching the filling about a quarter of an inch from one end, so tightly as to cause the ends to spring straight up. The ends of the filling are then clipped with a sharp pair of scissors and the operation repeated until all the knots are covered. With judgment and taste in the clipping, in the arrangement of the stitches, and in the choice of colors, striking imitations of the flowers mentioned can be produced. The object of the knot stitch is to imitate the seeds in the flowers.

A PRETTY BOOK CASE—Can be made of an old cupboard by taking off the doors, paint the inside a deep red, or cover the sides and shelves with deep crimson cloth fastened with brass upholstering nails. Ebonize the outside or stain in imitation of walnut. Curtains can be arranged on a rod to draw across the opening. This will be quite inexpensive and add an air of comfort and luxury to your room.

PRETTY LACE EDGING.—Cast on 11 stitches, knit across plain. *1st row.*—Knit 3, throw thread over, slip and bind (meaning to slip one stitch, knit the next and pass the slipped stitch over), knit 1, throw thread over, slip and bind, knit one, throw thread over twice, knit 1, throw thread over twice, knit 1. *2nd row.*—Knit 2, seam 1, knit 2, seam 1, knit 2, seam 1, knit 2, seam 1, knit 3. *3rd row.*—Knit 3, throw thread over, slip and bind, knit 7. *4th row.*—Cast off 4, knit 3, seam 1, knit 2, seam 1, knit 3, repeat.

CHILD'S SACQUE IN STAR STITCH.—Make a chain of sixty-nine stitches, take up every one, make two rows of short stitch.

1. Eight plain stars, widen for sleeve (one-half star), one plain (one-half star), seven plain, widen back (one-half star), one plain (one-half star), then eight plain.

2. Widen on sleeve and centre of back, three plain between.

3. Widen after first star, fronts and each sleeve, five between.

4. Widen on sleeve only. 5th, 6th, 7th, 8th, and 9th rows same.

10. Widen after first star front and sleeve, making nineteen stitches.

11. Join under arms, letting widening go into the skirt.

12. Widen under arms, one stitch between.

13th, 14th and 15th plain.

16. Widen front and under arms, three between.

17th, 18th, 19th and 20th plain.

21. Widen under arms, five between, and centre of back, one between.

22. Plain.

Border.—Take up somehow one hundred and forty-five short stitches.

2. Into the fifth stitch put three, then three in every eighth, making eighteen shells across, with four plain stitches at end.

3. Into fifth stitch three times, four plain, skip one, four plain, three into fifth stitch, etc.

4. The same, only skip two.

5th, 6th, 7th, 8th and 9th rows the same as the 4th row.

10. Take up every one.

11. Into the sixth three times, five plain, etc., skip two.

12th, 13th, 14th, 15th, 16th and 17th same, which finishes the border.

Cape.—Chain of sixty four.

1. Plain.

2. Fourth stitch put in three, then every fourth, three all across.

3. Widen in fourth stitch, two plain, skip one, two plain, widen, etc.

4. Two plain, skip two.

5. Take up every one.

6. Three plain, skip two. Like that until 11th.

11. Take up every one.

12. Four plain, skip two, to the 16th.

17. Five plain, skip two.

18th, 19th, 20th and 21st, same as 17th.

Answers to Inquirers.

S. W.—To preserve citron—Take two fresh lemons to a pound of citron; let the sugar be equal in weight to the lemon and citron; take out the pulp of the citron and cut it in thin slices and boil in clean water till tender, take it out and boil the lemon in the water about twenty minutes; take out the lemon, add the sugar, and, if necessary, a little more water, let it boil; when clear add the citron and let it boil a few minutes. The citron may be steamed until tender instead of boiled, if preferred.

MRS. H. M.—You can make a very pretty cover for your small table, of olive felt with a border of outline embroidery in gold silk, and then pink the edge.

KATIE F.—It would be advisable for you to learn to cut out, make and mend children's clothes, as it is to your advantage to make yourself indispensible.

T. O.—1. The expression, "yours truly," has become too business-like and common for use by well-bred people in intimate correspondence.

PERPLEXED ONE.—1. Tricot-stitch in crochet is worked as follows: Use a long crochet-hook, make a foundation chain of the number of stitches required; put the hook through one stitch on the chain, and make a stitch which you must retain on the hook, and continue to work until all the stitches be on the hook. 1st Row—Place wool over hook, and draw it through two loops; wool over, and draw through two loops, and so on to the end of the row. 2nd Row—A number of long, upright loops are now visible; put the hook through the first of these and make a stitch; leave on the hook and repeat; work the two rows alternately. 2. The duties of the *best man* at a wedding consist in waiting upon the bridegroom, and so to leave him free to concentrate his whole thoughts upon his bride. He pays fees, sees that the carriages are all in readiness going and returning from church, takes the first bridesmaid down to breakfast, and afterwards, if healths be drunk, he returns thanks for the bridesmaids. Thanks for your kind letter.

Recipes.

AUNT BETSY'S APPLE TART.—Peel and core some apples, cut them into slices, cut one small quince into slices, and stew it until tender in a very little water, with a small lump of butter added. Line some round tins with puff paste rolled very thin, then put into it a layer of apples and then of the quince, with a layer of apples on top; sprinkle sugar enough over each layer to sweeten it, put a band of puff paste around the edge and a thin cover over the top; wet this over with the white of an egg, and bake it in a moderate oven. Just before it is eaten it should have powdered sugar sprinkled over it.

BEEF FRITTERS.—Beef fritters are nice for breakfast Chop pieces of steak or cold roast beef very fine. Make a batter of flour, milk and an egg, and mix the meat with it. Put a lump of butter into a saucepan, let it melt, then drop the batter into it from a large spoon. Fry until brown; season with pepper and salt and a little parsley.

BREAD-CRUMB OMELET.—One pint of bread crumbs, a large spoonful of parsley, rubbed very fine, half a tiny onion chopped fine. Beat two eggs light, add a teacupful of milk, a trace of nutmeg, and pepper and salt liberally; also a lump of butter the size of a small egg. Mix all together and bake in a slow oven, on a buttered pie-plate; when light brown, turn it out of the plate and serve at once.

BROILED HAM.—Slice the meat from the ham raw, as thin as you can, then put it into a pan of cold water; set it on the stove in a stew-pan, and let come to a boil; then have your griddle hot, and broil the meat with a little butter dropped into the pan and a sprinkle of black pepper.

JELLIED OYSTERS.

Take one shin of beef chop in three and place in a large stock pot; cover with cold water; boil for six or seven hours; keep the water replenished for three hours, then let it reduce until boiled down to about four quarts; strain through a collander and set away until next morning; carefully strip all the fat off; place in a clean pot and set over the fire; add two ounces of salt, half an ounce of mace, and six whole cloves or a pinch of ground ones; let boil for half an hour; then stir in the well whipped whites of four eggs; boil up and strain through a jelly-bag into a clean basin. Prepare four quarts of oysters as follows: Beard them and pick them free from all pieces of shell; drain for half an hour; put the liquor from them in a clean kettle; add the oysters and let them become hot, but not shrivelled; turn into a collander, drain quite dry and then add them to your clarified stock; stir gently and fill large moulds; turn from the moulds when required, without dipping in hot water. Decorate with celery shredded in fine strips, or parsley.

ORANGE CUSTARD.

Peel and scrape free from pith half a dozen oranges; slice thin and take out the seeds; place them in a high glass triple dish; pour over a rich custard and pile whip cream high on the top; flavor with anything you prefer.

BEATRICE.

The New Year.

BY H. M. BURNSIDE.

Speak softly, the old friend is passing away,
Who led us up the steep winding slope,
And cheered us through many a cloudy, dim day,
By pointing us on to the beacon of hope.
Tread gently, speak softly, the old friend departs.
He speeded away to the home of the years,
And what through the record he leave on our hearts.
Be bright with our laughter, or dark with our tears?
We can make of each sorrow or joy of the past,
A step that will help us to Heaven at last.

Outwitted.

The following anecdote, told by the Scottish American, illustrates the fact that the man who is asked to do an unusual thing will expect much more pay than for doing a usual thing that costs him several times the trouble. Some years ago, before the sale of game was legalized, and a present of it was thought worth the expense of carriage, an Englishman rented a moor within twenty miles o Inverness. Wishing to send a ten-brace box of grouse to his friends in the South, he directed a servant to call upon Donald Fraser) who owned a horse and cart, and made a livelihood by driving peat into the town), and ask him what he would charge for taking the box to Inverness.

Donald would not take it under eight shillings. The demand was thought so unreasonable that the gentleman complained to a Scotchman, who was shooting with him.

The Scotchman replied that he (the Englishman) did not understand how to bargain with the natives, and that one of them approached in the right way would do the job for much less. Calling Donald, he held the following conversation:

"Guid-mornin' Donald! What's the price o' peats the noo?"

"Just auchteenpence the load, sir."

"Very weel, ye can tak a load into my hoose in Inverness the first thing the morn's mornin'.'

"I'll dae that, an' thank ye, sir."

The Scotchman then walked on about twenty yards, when he suddenly turned round and said:—

By-the-by, I hae a box tae send; ye can juist pit it on the tap o' the peats."

"I'll dae that, sir. It'll no mak' muckle difference."

In this way the Scotchman got a good load of peats, and the Englishman got his box of game sent for nothing.

One always sees more or less of human nature exhibited in traveling. It amuses me to watch my fellow sufferers on a railroad journey, and judge of their characters by the external evidence they give. Recently I witnessed a parting and a meeting of married pairs, so diverse in nature as to be quite noticeable. At one station a man and wife—you can always pick out the married folk, as sailors say, "by the cut of their jib"—got on board. The man entered the car first, carrying a large and well-filled market basket, which he was about to deposit in a vacant seat, when his wife pointed to another and sharply said: "Put it thar!" He "put it thar," she seated herself, and he marched out of the car. Not a word of good-bye was uttered, not a gesture of farewell, not a look, even, as they parted. I watched the man unhitch a spavined Rosinante, climb into a dilapidated "one-horse shay," and drive off, but his wife never vouchsafed him a glance. I had noticed a young woman with her baby, who sat near me, because of her patience in tending the little fellow and supplying the wants of a solemn-eyed, black-browed three-year-old boy. At the first stop within the city limits a laboring man entered the car, looking its length in expectancy. The little woman half rose, he made two steps of half the length of the car, and she was caught in a pair of strong arms and given a kiss that fairly shook the ventilators open, while the bald-headed baby placidly endeavored to swallow its foot. Everybody smiled, not in scorn or derision, but in genuine sympathy and pleasure at the evident delight of these two meeting again "'Tis love that makes the world go round." I pictured for the first pair a dull, dreary home, never brightened by tender words or loving thought of each other, where sordid cares absorbed life's beauty, living, God only knows for what end. For the other an humble home, where toil was lightened, burdens borne, work done, for love's sweet sake.—["B." in the Household.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES.—It is really wonderful to me how many of you seem to have your interest aroused at the beginning and close of the year. It reminds me of the big Sunday Schools all over the land just before the Xmas tree entertainment. But only those who persevere constantly the year round can certainly be the most expectant of prizes. I have summed you all up and this is exactly how you stand :—For best original puzzles in 1885, 1st, $3, Ada Armand ; 2nd, $2, Will Thirlwall ; 3rd, $1, Henry Reeve, and 4th, 50c., Annie M. Scott ; and for the most correct answers, 1st, $3, Robt. Kerr ; 2nd, $2.50, Alice Mackie ; 3rd, $2, Emma Dennee ; 4th, $1.50, Lottie A. Boss ; 5th, $1, Willie B. Bell, and 6th, 50c., Frank Milner.

It has been no little work to keep a strict and concientious account of every puzzle and answer, and I hope that all will be perfectly satisfied. To the others who have worked faithfully all through the year and secured no prize I would say, "Never despair, but try, try again. For 1886 I propose giving prizes at midsummer as well as at the end of the year, thus giving a better chance for more to secure prizes. The following will be the amounts for best original puzzles awarded by the 1st July :—1st, $1.50 ; 2nd, $1 ; 3rd, 75c. ; 4th, 50c., and for the most correct answers to puzzles, 1st, $1 ; 2nd, 75c. ; 3rd, 50c., and 4th, 25c. Now, I hope you will all go to work in right good earnest, and either send some capital puzzles or the answers. If each one would try and do something, what an enormous family Uncle Tom would have.

We will keep to the old rules, but for the benefit of new members I shall reprint them : The puzzles must be wholly original, answer to accompany each puzzle. All competitors must be under seventeen years of age. Your name and address in full with each communication. All letters must be in by the 25th of each month to insure publication, but credit will be given to those who live at too great a distance for their letters to reach us by that date. Letters and puzzles are to be written neatly and legibly. Now go to work and send some really good puzzles for February. Wishing you, one and all, a Happy New Year, I remain your

UNCLE TOM.

Winter Sport.

The accompanying illustration represents a peculiarly characteristic Canadian winter sport. Canada has been the parent of many a winter sport, but of none, I think, which is conducive to more enjoyment and benefit than that shown in the illustration, viz., tobogganing. A decade ago a toboggan was only known as an arrangement on which the prairie dogs brought to the trading posts the summer's collection of the hunter's furs. Now there is scarcely a city or town of importance in Canada which does not boast of its toboggan slide as one of the means of amusements, and not only do we find these public slides, but even from private grounds in our cities can we hear the wild screams of joyous and exhiliarating pleasure that can only be heard on the toboggan slide or coasting hill. A southerner so full of sympathy for those poor ice-bound creatures of the north, can scarcely have any conception of the charm and cheer to be got out of the dry snow, the bracing air and the clear skies of the Canadian winter. Go to any of our city toboggan slides in cold weather and what a picture opens upon our view. Here we see hundreds of men, women and children in their warm and gayly colored blankets, with their cheeks rivalling in color the redness of their blankets, flying down the inclines at a blinding pace that thrills the onlooker as wells as the tobogganist. The natural hills were formerly the only ones used, but the idea of erecting high wooden structures, on one side of which skifs are arranged, came rapidly into favor. These are much easier of ascent, and have also the advantage of being perfectly smooth.

Some of the slides, as used in Montreal, are steep and dangerous-looking, and the sensation of rushing down the hill on the thin strips of basswood is one never to be forgotten, at any rate by the following American girl : "How do you like it?" asked a Canadian girl of her American visitor, whom she had steered down the steepest slide. "Oh, I wouldn't have missed it for a hundred dollars." "Then you will try it again, won't you?" "Not for a thousand dollars."

To many others, I am sure, whose breath seems to be almost taken from their bodies, this has been the first reflection, but the fondness grows by practice, and of all the sports at the usual Montreal carnivals this is the most generally enjoyed by the visitors. In our country places these convenient artificial slides are not usually practicable, nor are they even desirable, for in every village and on every farm the boys and girls have found hills that afford them fun without limit. I do not see why the custom in vogue in some parts of the country of having regular tobogganing and sleighing parties should not be more generally practiced. It would serve, to some extent, to make what is too often a dreary season one of enjoyment and improvement, and also to restore the redness to the blanched cheek, for the atmosphere and nature of the enjoyment would compel exertion, and exertion brings health.

TOBOGGANING.

Puzzles.

1—TRANSPOSITION AND DECAPITATION.

Whole I am a small animal ; behead, and I am used by a painter ; curtail and transpose, and I am a fur-bearing animal ; again transpose and I am a vendition ; behead and I am a liquor.

ADA ARMAND.

2.—DROP-VOWEL PUZZLE.

Th- h - - nd w - ll f - wn - n - ny - n -
Th - t gr - - ts h - m w - th - k - nd c - r - ss
Th- fl - w - r w - ll t - rn t - w - rds th- s - n
Th - t n - rt - r - s - t - n l - v - l n - ss.

EDMUND PEPPER.

3.—HIDDEN RIVERS.

1—The man will start weeding to-morrow.
2—The barn out at the other farm was burnt.
3—He played our organ at the fair.
4—He made a raid on the town.
5—Parse, "In entering the door we saw the man."
6—She ran a rusty needle into her foot.

H. REEVE.

4—WORD SQUARE.

1—Comes but once a year. 2—A market. 3—Extent. 4—a kind of deer.

HENRY REEVE.

5—HIDDEN SQUARE WORD.

It is not at all impossible to do it.
Did Olga go out to skate yet?
That is rather a grim ode, Clarice
I got an apple at Temple Hall.

6—DROP-VOWEL PUZZLE.

C - - ut th - t d - y l - st wh - s - l - w d - sc - nd - ng s - - s - n thy p - rt n - w - rthy - ct - - nd - n - ADA ARMAND.

7—ILLUSTRATED REBUS.

8—NUMERICAL ENIGMA.

My 24, 8, 2, 31 is to rectify.
My 12, 5, 3, 21 is a box of birds.
My 23, 17, 27, 10 is a loud outcry.
My 7 25, 22, 6 is to mend.
My 38, 16, 28, 14 is that which is present.
My 20, 1, 26, 36 is to sell.
My 1[illegible], 34, 4, 19 is a substance for draining.
My 13, 5, 29, 11 is a story.
My 9, 39, 30, 32 is a prefix implying some relation to wood.
My 15 33, 37, 35 is to this degree.
My whole contains 39 letters and is a watchword in Great Britain.

FAIR BROTHER.

Answers to December Puzzles.

1—Never buy what you do not want because it is cheap.

2—Speak the truth and speak it ever,
Cost you what it will,
He who hides the wrong he did,
Does the wrong thing still.

3—
C
SHY
PARRY
COMICAL
CHRISTMAS
EARTHEN
CAMEL
PAT
S

4—
P
AT
PAPOOSE
TOTTER
OTTER
SEETHE
ERRHINE
EN
E

5—Stock—sock=t.
Brand—Band=r.
Neat—net=a.
Loft—lot=v.
Paint—pint=a.
Blind—bind=l.
Sign—sin=g.
Haunt—hunt=a.
Frail—fail=r.

Names of Those Who Have Sent Correct Answers to Dec. Puzzles.

Henry Willson, W. Webster, Wm. Jackson, Robert Kerr, Henry Reeve, Edmund Pepper, J. J. Steele, Minnie Stafford, Fair Brother, Lotta A. Ross, Emma Dennee, E. W. Hutcheson, Juliet M Jordan, Alice M. Hume, Willie B. Bell, Will Thirlwall, Becca Lowry, Frank L. Milner, Wm. A Laidman, Ellen D Tupper, Georgia Smith, Jane L. Martin, Alice Mackie, Joseph Allen, R. Wilson, Ada Armand, Mary Morrison, Chas. Herbert Foster, Robt. J. Risk, Annie S. Broderick, Tillie Hodgins, Thos. L. Lindsay.

Commercial.

THE FARMER'S ADVOCATE OFFICE,
London, Ont., Jan. 1, 1886.

Very mild weather has prevailed the past month. We have had one or two pretty severe snow-storms, but they have been of short duration and were succeeded by very mild weather. While business on the whole has been very good, it is not what it would have been with cold weather and good sleighing, or even good wheeling.

WHEAT.

A large portion, if not all of the winter wheat belt, is without snow, and the freezing and thawing so far has not had perceptibly any effect on the plants. American wheat centres have been waiting for something to turn up The visible supply statement shows a small decrease, but this is explained in such a way as to give this turn of affairs little or no force. All things being considered, the markets maintain much strength. There is increasing evidence that the British markets may be expected soon to show a strengthening tendency. This may have little bearing upon our markets, as values there are still widely below a parity with American markets. Prices in this country, or rather the United States, have been maintained at a strained pitch most of the time since harvest, and have operated against the export movement.

In speaking of wheat in the United Kingdom, Beerbohm's List of Dec. 18, says: "It is evident that the next three months will witness a heavy drain upon stocks in warehouse, which at the present moment may be estimated to amount to about 3¼ million quarters (26,000,000 bushels) in first hands, against 2¼ million quarters (18,000,000 bushels) at the close of 1884." These figures probably include flour.

The stocks of wheat and corn at twenty-one leading interior and seaboard markets, east of the Rocky Mountains, in transit from the west to the seaboard, and afloat on the ocean, destined for Great Britain and Continental Europe, on dates named, were as follows:

	Wheat, bu.	Corn, bu.
Total, December 21, 1885....	74,108,000	8,256,000
Previous week	73,181,000	7,585,00
Total, December 22, 1884	66,444,000	6,347,000
Total, December 24, 1883.....	55,742,000	11,561,000
Total, December 25, 1882	43,615,000	9,373,000
Total, December 25, 1881.....	48,405,000	20,165,000

This includes Minneapolis and St. Paul for 1884-5, but not for previous years.

The following shows the exports of wheat and corn, including wheat in flour, from all American ports and Montreal from September 1 to December 19, for the years named:

	Wheat.	Corn.
1885.....	21,740,000	13,638,000
1884.....	42,852,000	6,359,000
1883.....	28,697,000	14,006,000
1882.....	55,353,000	2,619,000
1881.....	44,050,000	13,644,000

The American Consul-General at London, England, reports that the depression effecting the cultivation of wheat has reached an acutest stage. The acreage of wheat in Great Britain has fallen 7½ percent. under that of last year The average price of wheat in more than 150 English towns last week was as low as the lowest price reached last year. The Consul-General advises American farmers to grow more oats and barley for export for the reason that in selling these crops they will not meet the severe competition of India. It is more than probable that the supply of Indian wheat will increase from year to year. At the same price the English will buy American wheat, because it is better, but the English buyer not only sees the Indian wheat far underselling the American, but has also learned that the price of American wheat is fixed by speculation rather than by legitimate trade. He can rely upon the steadiness of the price of the Indian supply, but he knows that the operations of a syndicate or a burst of speculation among the grain gamblers in this country, may send up the price of our wheat 10 cents a bushel in two or three days. Gambling in our grain market in the past led the foreign consumer to develop the agricultural resources of regions that are now our formidable rivals, and gambling in the same market now tends to confirm the trade arrangements which it then caused to be established.

CLOVER SEED.

As yet little has been done in this article and what has changed hands has been chiefly Alsike. This variety is apparently more plentiful than Red Clover, and will be in good demand for home trade the coming season. One thing farmers must bear in mind, and that is that there will be a wide range of prices as to sample. Finest samples will command good prices, and those of secondary or below will not be wanted unless at low figures.

In red clover the American markets are very tame and tending lower. This is caused, no doubt, from the fact that a number of sales of seed in England have been made to arrive in New York or Chicago in January, and more likely to follow. This is a turn of affairs not just expected by the trade.

LIVE STOCK.

The Montreal Gazette reports the live-stock market as follows:

The following were the receipts of live stock at Point St. Charles by the G. T. R.:—

	Cattle.	Sheep.	Calves.	Hogs.
Week ended Dec. 26....	510	1,505	80	451
Prev. week..	1,460	3 769	45	520
Since May 1..	72,415	57,076	4,589	13,139

The cattle market has ruled quiet, as might be expected after the activity incident to the Christmas trade has passed, and as butchers have considerable supplies left over from recent purchases. Receipts have fallen away, but the offerings were more than sufficient to fill all wants. There was no demand from exporters. The market to-day was dull and inactive, with prices somewhat nominal. The best butchers' cattle were quoted at 4c per lb. live weight, with inferior down to 2c. There were fair offerings of sheep, but demand was slow. Prices, however, were steady at 3 @3½c per lb. live weight. Lambs were quoted at 4c@4½c. Live hogs were quiet and steady at 4½c per lb.

CHEESE.

The cheese market has taken on a little more life the past two weeks, and considerable cheese has changed hands and gone forward or put into store. All stocks are firmly held and cannot be bought in any quantity at present. The stock in Liverpool and New York cannot be heavy, neither is it probable the stock in London and Bristol will be equal to that of last year. The supply held back in York State is said to be smaller than last year, and the Canadian supply seems to be vanishing in a way that must alarm the "bears," who are now very quiet.

The following table shows the official value of the exports of cheese from the port of Montreal from May 1 to November 30, inclusive in the years given:—

	Canadian.	Not Canadian.	Total.
1885.....	$4,866 863	$500,923	$5,367,786
1884.....	5,9 2,002	634 736	6,556 738
1883.....	4,832,034	443,642	5,275 676
1882.....	4,288,108	565 752	4,853,860
1881.....	3,275 623	442,995	3,718,618
1880	3,370,064	351,864	3,721,928
1879.....	2,059,889	181,380	2,241,269

BUTTER.

Trade in butter has been slow, without any new feature in the market. On all fine grades a steady and hopeful feeling is noticeable, and it is found that the local trade is taking a fair quantity.

The following table shows the official value of the exports of butter from the port of Montreal from May 1 to November 30, inclusive in the years given:—

	Canadian.	Not Canadian.	Total.
1885	$ 563,081	$132,953	$ 696,034
1884.....	986,532	112,854	1,099,386
1883.. ...	1,160 865	34,753	1,195,618
1882	949,893	.....	949,893
1881.....	1,633,903	40 047	1,673,950
1880.....	2,516,660	63,062	2 579,772
1879.....	1,873,788	38,203	1,911,991

PRICES AT FARMERS' WAGONS, TORONTO.

Jan. 1, 1886.

Wheat, fall, per bushel	$0 82	0 84
Wheat, spring, do.	0 70	0 84
Wheat, goose, do.	0 70	0 70
Barley, do.	0 60	0 92
Oats, do.	0 34	0 35
Peas, do.	0 60	0 61
Rye, do.	0 60	0 60
Beans, do.	1 00	1 25
Dressed hogs, per 100 lbs	5 50	0 00
Beef, forequarters	3 00	4 00
Beef, hindquarters	5 00	7 00
Mutton, carcass	4 50	5 50
Lamb	5 50	5 60
Hay, timothy	13 00	14 00
Hay, clover	10 00	11 00

PRICES AT ST. LAWRENCE MARKET, TORONTO.

Jan. 1, 1886.

Chickens, per pair	$0 35	0 45
Ducks do.	0 55	0 70
Butter, pound rolls	22	24
Butter, large rolls	15	16
Butter, inferior	10	12
Lard	10	00
Bacon	9	11
Turkeys	75	1 50
Geese	60	80
Cheese	8	11
Eggs, fresh, per dozen	22	23
Potatoes, per bag (new)	60	65
Apples per bbl	75	2 00
Cabbage, per doz	75	90
Turnips per bag	35	40
Carrots, per bag	30	40
Beets, per doz. bunches	35	40
Parsnips, per peck	15	20
Onions, per bag	1 00	1 20
Cauliflowers, per doz	1 00	1 25

Buffalo, Dec. 29, 1885.

CATTLE.

Receipts 4,654, against 7,042 the previous week. The market opened up with only 125 car loads on sale, the lightest offerings for several weeks. Trading was slow, the attendance of buyers being light. Some fine Christmas stock sold at $6@6.25; choice steers, $4.80@5.65. For fair to medium steers the demand was light at $3.90@4.50, and mixed butchers' stock at $2.40@3. On Tuesday and Wednesday the receipts were very light, but there was no change in prices. Of Michigan cattle 21 steers av. 1,270 lbs. sold at $4.75; 11 do., av. 1,078 lbs., at $3.75; 17 do., av. 933 lbs., at $3.25; 4 do., av. 1,580 lbs., at $5.25; 15 do., av. 1,351 lbs., at $4.25; 22 feeders, av. 1,012 lbs., at $3.70; 16 stockers, av. 741 lbs., at $2.70.

NEW ADVERTISEMENTS.

IMPROVED PRIZE LIST FOR JANUARY, 1886.

Most Pleasing and Profitable Premiums to be Obtained without Money. Given only to Old Subscribers for Sending in New Subscribers' Names, Accompanied with Subscription Price, $1 for each New Name sent in.

The following articles will be all sent by mail, postage pre-paid. The trees will be good plants, cut back, leaving good roots, thus ensuring good growth the first season, and will be carefully packed.

Subscribers who have not the time to secure the requisite number of names to entitle them to any (or as many as they may require) of the following articles, can obtain the same by remitting the cash value set opposite each. These are supplied to ADVOCATE subscribers only.

No. of New Subscribers.		*Value.*
1	Two strong plants of Black Walnut trees, cut back. The most valuable timber tree we can grow; see cut and description in future issue.....	50c
1	Four small plants Black Walnut..	50c
	Two plants largest variety of Sweet Chestnut, on trial; see p. 355, Dec'r.	50c
	Four cultivated Sweet Chestnuts	50c
1	Two Catalpa speciosa; see page 332, November issue.....	50c
2	One Niagara Grape vine; one-year old plant.....	$1 00
3	One do.; two-year old plant..... ...	1 50
2	One Empire State Grape vine; one-year old	1 00
3	One two-year old do..... ..... These are the two most valuable new Grapes that are offered this season, having a great reputation. See page 81, vol. 20, and page 2, vol. 21.	1 50
1	Two small plants Ampelopsis Veitchii, or Japan Ivy; see p. 353, Dec. No...	50c
1	One strong plant do..... .... A very few of these plants have as yet been introduced into Canada, and the price charged by some dealers has been from 75c. to $1.50.	50c
	Most of the above list is best adapted to Western Ontario.	

Among the following will be found the very hardiest and best plants and seeds, that will be very valuable to our subscribers in our northern latitudes.

No. of New Subscribers.		*Value*
1	Package consisting of one Virginia Creeper; this is the hardiest creeper, very handsome; will thrive in Manitoba; also three of the Alder, or Ash-leaved Maple trees; they are well adapted to all parts of Canada; they are too seldom met with, but should be planted; they appeared the most thriving and most beautiful of deciduous trees that we saw thriving in Manitoba.....	50c
1	One of each of the following varieties of Grapes, the hardiest and best approved of for general cultivation: Clinton, Hartford Prolific, Delaware	50c
	One plant each of the best Apple and the best Crab Apple adapted to our northern latitudes; see particulars in future issues	50c
1	one package of the earliest maturing Field Corn offered this season; see future issue.....	50c
1	One package of a new and highly approved Cabbage; see future issue..	50c
1	Two plants of the latest improved and highly commended Raspberry... ...	50c
4	One dozen plants do.; see future issue	$2 00
1	Two plants of the most promising new Strawberry; see future issue,..	50c
4	One dozen do.....	$2 00
1	One package choice assorted Vegetables, containing many of the latest and most approved varieties.....	50c
2	Large packages and greater variety do	$1 00
1	One package varieties choice flowers.	50c
2	One larger package and larger number of varieties do..... .. .	$1 00

N. B.—We have no direct interest with any particular seed establishment. We disposed of all our stock of seeds years ago, and only offer these in our premium list to our subscribers only. For their benefit and the benefit of the ADVOCATE, we select the most valuable and the most promising new varieties from the most enterprising and honorable propagators, dealers and importers. There is an advantage in having the first of any valuable variety in any section. The cheapest way to procure them is by sending in a few names of new subscribers.

Address the FARMER'S ADVOCATE, LONDON, ONT.

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Notices.

Catalogue just received from Nash & Bro., of Millington, N. J., containing over 2,000 testimonials from forty-eight different States and Territories, speaking in flattering terms of their Acme Pulverizing Harrow.

We have just received from the Industrial Publishing Co., of New York, a very instructive and well gotten up book, entitled "Common Sense in the Poultry Yard."

The catalogue of Messrs. R. G. Chase & Co., of Geneva, Ontario Co., N. Y., has also arrived, and contains many new and choice varieties of Fruits, Trees, Plants, etc.

"The Kevnote," published in New York, is received. It is a lively illustrated weekly, devoted to music, the stage art and literature, &c. It is a paper always up to the times, and containg interesting comments on people and things in its line both in America and Europe.

FIRE EXTINGUISHERS.—When in New York last summer we saw a large fire on the square, opposite the City Hall, instantly extinguished by Fire Grenades. A company is now making the Globe Grenade in this city; they have made several very successful exhibits of their extinguishing power here. There is no doubt that many a house and barn may be saved by a prompt use of these Grenades. See advertisement in this issue.

Stock Notes.

The catalogue of Mr. Arthur Johnston, of Greenwood, Ont., is before us, and contains a full record of his choice herd of Shorthorns.

Messrs. H. Sorby, of Gourock, Ont., and Wm. McCrae, of Guelph, have entered into partnership for the purpose of importing and breeding live stock. Their address is, Alton Hall Stock Farm, Gourock, Ont.

The advertisment of Mr. Jno. Gibson appears in this issue We much regret that we are about to lose Mr. Gibson from among our Canadian breeders, who is about to leave Canada to take charge of Mr. J. J. Hall's herd of Shorthorn and Polled Angus cattle in Minnesota. Mr. Gibson has what we have long considered to be the best foundation of a Shorthorn herd in Western Ontario. His entire herd will be disposed of without reserve, you cannot procure stock from a better herd or a more honorable breeder on the continent. Send for catalogue.

Sheep must have exercise when closely shedded in winter, or constipation and loss of appetite will ensue. It is the proper thing to do in caring for sheep in the cold weather to give them a little hay very early in the morning and turn them out for water and exercise before giving them grain and more hay.