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THE FARMER'S ADVOCATE & HOME MAGAZINE.

WILLIAM WELD, EDITOR AND PROPRIETOR.

THE LEADING AGRICULTURAL JOURNAL PUBLISHED IN THE DOMINION.

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Our Monthly Prize Essays.

CONDITIONS OF COMPETITION.

1.—No award will be made unless one essay at least comes up to the standard for publication.

2.—The essays will be judged by the ideas, arguments, conciseness and conformity with the subject, and not by the grammar, punctuation or spelling, our object being to encourage farmers who have enjoyed few educational advantages.

3.—Should one or more essays, in addition to the one receiving the first prize, present a different view of the question, a second prize will be awarded, but the payment will be in agricultural books. First prize essayists may choose books or money, or part of both. Selections of books from our advertised list must be sent in not later than the 15th of the month in which the essays appear. Second prize essayists may order books for any amount not exceeding $3.00, but no balance will be remitted in cash. When first prize essayists mention nothing about books, we will remit the money.

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

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

Editorial.

On the Wing.

FALL WHEAT.

Not having been entirely satisfied with the information gained in the eastern, northern and southern trips in Canada, of which you have had some report in the last ADVOCATE, we turn our attention to the west. The county of Kent stands pre-eminent as the wheat producing county of Ontario. No such extensive and apparently inexhaustible soil is to be found in any other part of Ontario. We met some of the best farmers and find that the Scott and Democrat wheat are still the favorites. The Mediterranean, Clawson, Michigan Amber, Fultz, etc., etc., have their admirers, and the recent introductions have more condemners than laudators. In the central part of Michigan the Fultz, Amber and Clawson wheat are more extensively

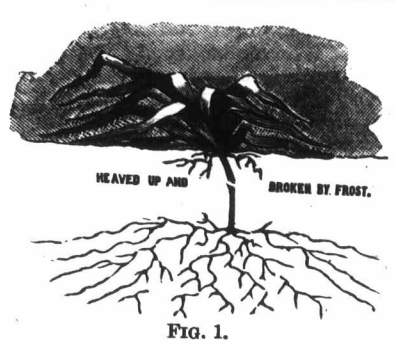


FIG. 1.

grown. The Scott and Democrat, we hear, are as yet more generally grown in districts bordering on Canada, but are there well spoken of, and are gradually being extended in their growth.

The drouth spoken of in our last issue still continues. The cereal crop has been very materially shortened; the root crops must now be unusually short; the apple crop will also be reduced; the corn crop is very materially injured, and potatoes will be small. Some farmers are now feeding their stock from the winter supply. Cattle in some instances have to be driven six miles for a drink. Pastures are dried up. What a contrast—this is now the 1st of August—from the account of our trip on the 1st of July.

SOWING WHEAT.

It is very evident that the early matured wheat is the most profitable to procure, and it depends on the cultivation. It is on the well drained lands—whether naturally or artificially—the best crops are found, in fact, the only profitable wheat crops. There are so many obstacles to contend against that our best farmers cannot ensure success. Possibly there has been more winter wheat killed the past year than ever has been or will be again from one cause; that is, from the introduction of these beautiful labor-saving harvesters. For instance, we formerly ridged our lands high, left a very deep furrow and deepened our main outlets. These have been found extremely inconvenient and dangerous, both to men and the implement when crossing these deep furrows. To enable these harvesters to work, we may have kept our lands too level; this prevented the usual rapid discharge of the surplus water. This we must try to guard against in the future; should we be under the necessity of taking a little more time to harvest—even to use the old cradle in rough spots that cannot be properly prepared to use the harvester on. If we even cut over the main or dead furrows with the cradle, we must have the ground right to raise the crop; the saving it after it is raised will be more easily guaranteed. Winter killing has destroyed so much of the wheat the past season as to be attributable to three causes: 1st. Improper surface and underdrainage; both must be properly attended to. 2nd. The smothering of the wheat by water and freezing, thereby excluding the air. This we have materially lessened by breaking holes through the crusted snow; but this is impracticable when the snow is turned to water, as it was the past year. 3rd, The depth of seeding. This we believe has not received as much attention as it deserves. When our land was new we would sow among the roots and stumps of the newly cleared ground. The wheat could not be much more than half covered, and what was covered would only be out of sight; it would be hard to find an inch of soil on the wheat in any part of a field. We were not half as subject to have the wheat winter killed as now. The frost would heave some of it up; it would even turn brown, but after a rain the plants would show life, and generally an excellent crop was the result from a field that had apparently been destroyed by the spring thawing, freezing and heaving out. We never saw any of our new land crops killed in the manner we now have our carefully cultivated fields. The reason appears to be greatly attributable to the depth we sow our wheat, and any adjustable implement that can be made to do this work satisfactorily would meet with favor. The wheat will send out its main roots direct from the kernel. If the kernel is deeply covered, a long, spiral stem will be formed between it and the blade, as shown in Figure 1; the frost will heave the ground and break these spiral roots and the wheat is gone. By shallow sowing the root spreads near the surface; they will be heaved with the blade, many of them will be broken, and the wheat will often turn brown,

but some of the fibers still have a hold on the soil, as the surface soil is heaved up with the root. As the damage is always done in the spring by the light frosts that only freeze the ground an inch or two, the solidifying of the wheat and ground by hard continued frost does the wheat no harm; it is the separation of the soil from the root that is the cause of the trouble. And it is surprising, after a rain in the spring, how soon vitality is shown on these plants, and many a field that has appeared

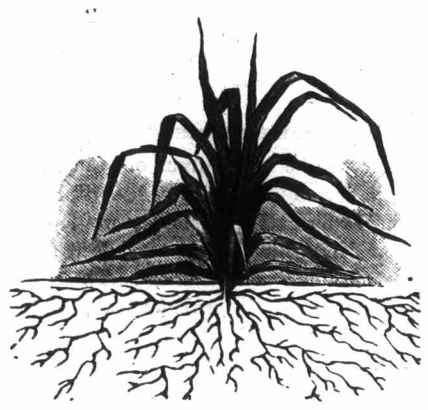


FIG. 2.

worthless in the spring has yielded a bountiful crop at harvest. Figure 2 shows the plant from surface or shallow planting. There is less liability to winter killing on clover or grass lands returned than if plowed three times. The second plowing leaves the decayed roots on the surface; these the wheat secure and it protects them. Where you find most of the roots at the surface the best wheat will be found, and the least damage done by winter killing.

The Herd Book Trouble.

From one of our exchange papers we learn that a syndicate is now being formed among a very few to purchase a certain breed of Shorthorns. The one selected being of fine appearance, but one extremely defective in vitality on account of in-bred and hereditary diseases, which it may be liable to impart. The latest herd book is found to contain too many animals, and the names of some parties, among them practical men, that are not wanted. Every conceivable plan must be devised to reduce the number of animals and obliterate the names of some owners. Chagrined as many good farmers have been by the effects of the recent curtailment, you may now contemplate a still greater cut on your herds. The sole object of such is to make money for a few monopolists at the cost of all practical farmers. If the plan is carried out, but very few of the animals in the latest herd book will be known as anything but scrubs. Government influence is sought and has so far been attained through herd book manipulators. The syndicate will embrace the wealthiest stockmen. The manipulators of exhibitions will be under their control, and large prizes will be awarded to Shorthorns, for the encouragement of this syndicate; all other exhibitors must bow to the golden calf. The Government exchequer must be drawn in to have the most able compilers to write or rehash everything that has been or can be said to advance this plan. Such literature, whether in the form of caricature or upon sound facts, must be disseminated under the guise of educating the farmer, but the golden calf operator pulls the wires. Could we believe this plan would tend to the advancement of the prosperity of the farmers or the benefit of our country, we would most assuredly endorse it and aid it, but as we have seen so much of the devices and plans of operators during the past 21 years; the publication lists of fabulous prices having been obtained that were never paid, or ever intended to be; the false statements made in regard to health of animals, and the devices knowingly practised by manipulators to suppress truth regardless of all consequences, cause us to look on the movement with grave doubts, as to countenance it with our present views must tend to the greater demoralization of the people, which is totally unnecessary for our safety and well being. The records of the measurement of an animal for the shambles and the extent thereof may be but slightly tampered with, but the prices paid for animals can be quoted at anything without the slightest possibility of ascertaining the facts. Even the milking capacity of some cows has been given in professional stock papers at such enormous figures that any practical farmer or dairyman is astonished.

We have milked a cow in England that gave 16lbs. of butter in a week; this was considered uncommon there. We heard of one cow that gave 19lbs., this was considered a miracle. We have no such pastures here and no better animals, nor any better management, nor more honorable people, and yet our stock papers publish yields of 26lbs., 30lbs., 36lbs. and 46lbs. of butter per week from one cow. Unless we advocate and endorse these statements we are termed advocates of scrub stock.

No one appreciates a meritorious animal more than we do, but we do not believe that any cow ever gave 46lbs. of butter in one week, unless the butter or cream was taken from other animals, and by means of tubes forced through the cow.

The editors of stock papers that publish these enormous yields and enormous prices, should enlighten the public as to how these yields are produced, and what has become of the money. The recipients of these fabulous prices, from our observations, instead of accruing large farms, many have now no farms, but menacing creditors; and the scrub farmers, as they are termed, have to draw from the products of their scrub stock to pay the travelling expenses and the printing and dissemination of this exaggerating, misleading, demoralizing literature under the guise of agricultural education.

Our Illustration—Westwell Farm.

"Westwell" was the name of our home in Kent, England, and we gave the same name to our farm in Delaware, Canada. Only part of the place is shown in the illustration, which was got up hurriedly by a Chicago artist. It is fourteen miles from London. Your editor cleared the forest from most of it, and erected the main buildings you now see. This farm was one of the first settled in the township, when the only means of approach was by the canoe. Mr. Weld purchased it when a small clearing was made, and a small log house erected on it. On this farm he learned to chop, log, split rails, build, sow, plant, etc. This farm is now worked by two of his sons.

It was here that the idea of establishing an Agricultural Emporium first originated. The first Fife, Scott, Clawson, Democrat, and many other varieties of wheat that were introduced into this county were raised here. Some of the varieties had never been heard of in Canada previous to this. It is from this farm that most of the best wheats now raised in Canada can be traced by the farmers. They were disseminated in four-ounce packages to all parts of the Dominion. Every horseman of note has heard of Anglo-Saxon—no horse ever carried off such honors. On this farm pure Ayrshires, Shorthorns, sheep, pigs and poultry were raised; prize fruit and roots grown, and prize cheese, butter and bread have been made here; also the best implements are used. The crop of apples from this farm the present year is estimated at 2,000 barrels, and the trees were principally planted by the hand that holds this pen.

Knowing how much good we did, and how much the farmers appreciated our undertaking, we have this year recommenced our experiments, after a lapse of eight years, on a new plan. We have engaged the best talent we could procure for this purpose to take charge of this department. We have expended ten times as much this year as we ever did for scientific research, and trust that between the practical work of my sons on those farms and the special labors of scientific experts on a few acres near this office, that I shall be able to furnish you with such reliable information as must be of use and importance to you, and such as cannot be correctly attained in any other way.

From this farm has emanated what all Canadians say is the best agricultural publication ever issued in Canada; and some Americans say, superior to any produced in the States; and the best European editors admit that the ADVOCATE has more than double the number of subscribers of any published in Great Britain.

Stock-Raising and Grain-Growing in Relation to Soil Fertility and Exhaustion.

No. I.

This question has recently been brought into great prominence through the agricultural press, and although we have commented on it, yet we find it too broad to be embraced within the limits of an ordinary article, and it is therefore our purpose to present the subject in a series of chapters extending over the winter months, hoping that our readers will honestly weigh our arguments.

The practical importance of the problem cannot be denied, it being the interest of every progressive farmer to know the special bearing of each department of husbandry upon the fertility or exhaustion of his soil. We entertain no prejudice, and have no personal interest to serve; our only aim will be to present the truth, and instruct our readers in the first principles of their calling.

In this Province the problem first elicited attention a few years ago, when the doctrine was promulgated by Prof. Brown, of the Model Farm, that farmers *must* raise stock to maintain the fertility of their farms, the question of *direct* profits being a secondary consideration. We first heard this gospel at a farmers' institute held in the town of Woodstock, and we remember the sensation which it created, many farmers, however, accepting it as truth, having emanated from the brain of such a popular and distinguished professor. It was a glad day for our live-stock speculators, who, through their organs and in every other available manner, rode the hobby to death, and a modified phase of the question, since the collapse of live-stock booms, has been that stock must be raised not only for the purpose of *maintaining* but also *increasing* the fertility of the land, which, it is contended, can be accomplished without the use of any food or fertilizer beyond that raised on the farm. The whole question, put into a nutshell, resolves itself into this: Can the fertility of the soil be maintained or increased by returning a part of its own resources? The defenders of this theor

contend that selling off beef or dairy products restores soil fertility, while selling off grain reduces it—that, in the former case, the restoration is caused by application of the manure, while in the latter, there being no manure, the soil becomes rapidly exhausted and entails expenditures for commercial fertilizers.

For the sake of courtesy to the defenders of this theory, we have called it a question or problem, although in reality it is not problematic, but it is necessary to use weighty arguments to remove popular prejudices, or allay popular fallacies, especially when self-interest is the mainspring. Our readers should bear in mind that the theory did not originate in a practical or a scientific source; there is all the difference in the world between a professor by political appointment and a professor by education and instinct. The question is one of debits and credits, as well as of science and practice. We admit that many eminently scientific professors have erred herein owing to their ignorance of accounts—also that many book-keepers and practical men have erred owing to their ignorance of agricultural science. What must now be said concerning a theory which emanated from the brain of an agricultural professor who is neither practical nor scientific, and possesses no knowledge of accounts?

Hinged to this question is another audacious theory, viz., that although farmers cannot make money at stock-raising by charging the food consumed at market prices, yet they can do so by charging the cost of production. This is a question pertaining purely to the principles of debit and credit, and only displays ignorance of book-keeping.

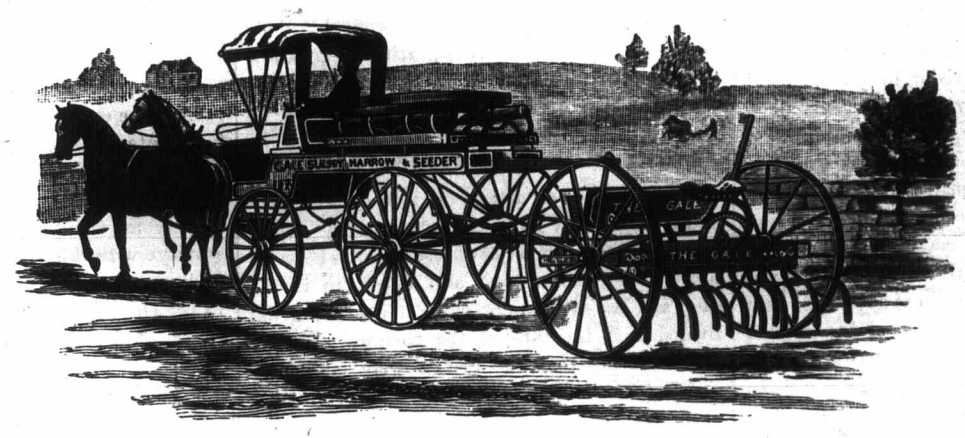
The question could be settled by a few easily-perceived, common-sense observations, but it is not necessary for us to restrict ourselves within these limits for the following reasons: 1. Prof. Brown is lecturer on agriculture in the Agricultural College, where the true science of agriculture is taught by other professors, and, so far as we know, he has not condemned agricultural science as a farce or a fraud. 2. The live-stock speculators, with Mr. Shaw as their leader, approve of the Ontario Agricultural College where the principles of book-keeping and agriculture are taught, and in this respect we are in cordial sympathy with them. The defenders of the theory are almost exclusively practical men, and there can therefore be no objection if we draw conclusions from that popular source. Thus we find that the whole field of science, practice and accounts is open to us, and we are at liberty to use our own judgment as to the source of our observations and conclusions.

(To be continued.)

For a farmer's use, a horse is worth more at seven than at any other age. He has nearly as many years of service before him as at a less age, and at seven is past the danger of being strained or injured by overwork. How old he must be before becoming superannuated depends upon circumstances. A horse overworked becomes played out at an age when one well treated is still able to do good service.

A New Way of Doing Things.

When in Essex Centre we saw a person drive through the town having a good looking, comfortable turn-out, on which was placed some combined harrows, cultivators and seeders. Behind the democrat was attached another seeder and cultivator, the same as shown in the illustration. On making enquiries we found this was one wagon out of a company of twenty-five teams that entered Canada last autumn. They spread themselves over the width of this peninsula, and go to every farm house to sell these seeders. They are in the employ of the Gale Sulky Harrow Manufacturing Company, of Windsor. The company comprises the following directors:—D. M. Ferry (the noted seedsman), President; R. W. Gillett, E. Y. Swift, David Whitney, George B. Hill, G. H. Gale, W. W. Collier, and O. F. Hall. Three members of the company we are acquainted with, and know them to be men of integrity, and feel satisfied the company's dealings with the public will be conducted in a straightforward manner. Mr. O. F. Hall represents the Canadian branch, with head quarters at Windsor, Ontario. They have many companies like this travelling through the States. Their employes are good business men, and have been able to convince the best Canadian farmers where



they have gone that they have the seeder that will do the various kinds of work required, and in a most efficient manner they show the capabilities of the seeder and take their orders. This company has a factory in Windsor. They purchase their steel at Halifax, and every part of this implement is made from materials purchased in Canada. We have excellent reports of this machine from some of the best wheat growers in Kent. These travellers are on their way east, and no doubt will call on you. We have no doubt but they will very materially effect our old established drill establishments.

The autumn meeting of the Ontario Fruit Growers' Association will be held at Grimsby, on Wednesday and Thursday, Sept. 28th and 29th inst., commencing at 10 a.m.

A good bull hates a coward, and the moment a man who has the care of one shows fear, he loses confidence and consequently loses control of him. Let the bull stand with the cows so that he sees you often, and when you pass by him in caring for and milking them, give him an occasional kind word. He will thus be freed from fear and more inclined to be kind and gentle. It is a mistaken idea that he must be shut up in a back stall where he is entirely alone. Why, if you would shut up a man from his kind, one of the best natured and most gentlemanly of men, he would soon become as sullen, morose and vicious as the worst bull that ever lived.

Carrot Caterpillar—Apple-tree Caterpillar.

We received for identification specimens of a caterpillar from a correspondent in Lakefield. It is the Black Swallow-tailed Butterfly *(Papilio asterias.)* It is about an inch long, of a greenish color, and covered all over the body with light spots. This caterpillar may, however, be of various colors, and, when mature, may be 1¼ to 1½ inches long. It feeds upon the carrot, parsnip and parsley. It is not known to have done much damage, and the remedy consists in hand-picking.

He also speaks of the leaves of his apple-trees being destroyed by some caterpillar which he has failed to observe, and desires us to name the insect, if possible. It is likely to be the Red-humped Apple-tree Caterpillar *(Ædemasea concimia)* and is getting to be pretty destructive. This caterpillar is about the same length as the preceding one, has a very conspicuous coral-colored hump on the anterior third of its body, where it has the largest circumference. From here it tapers rapidly towards the head, which is of the same red color as the hump. Its last two segments are not supported by legs, and when in repose are always elevated. Its body is marked with longitudinal, white, yellow and black lines, with an occasional row of black prickles.

The moth appears about the latter part of June, and lays her eggs on the under surface of the leaves, from which, soon after, the young larvæ are hatched. These, at first, only eat the pulpy portion of the leaf, but soon consume the entire leaf. They completely strip the branch on which they feed before wandering to the next. They are very voracious, and may devour the entire foliage of a young tree before being noticed. We found a few on our experimental field this summer, but soon checked their ravages by hand picking.

A correspondent of the N. E. Homestead says: Cabbage worms never trouble an English gardener of my acquaintance. When they first appear, he dissolves a tablespoonful of saltpeter in a pailful of tepid water and gives the plants a good sprinkling. The worms will disappear speedily. if they begin after a few days to appear again, renew the sprinkling and you will seldom have occasion to apply it a third time. It promotes the growth of the plants, too. Seeing him planting his melons, squashes and cucumbers, I asked him if the bugs would not destroy the vines. He said he was never troubled by striped bugs. When he prepared the hills he planted a circle of beans six inches apart around the outer edge of each hill. The beans would come up just before melons, etc., would appear, and no bug would molest the vines. I have tried these two remedies myself for ten years with perfect success.

Arch'd. Sinclair, Komoka, says: He set aside about an acre of timothy this year for seed, and got therefrom about 7 bushels. He thinks every farmer should do this, and keep the money here instead of purchasing it from the United States, as it is also an undoubted saving. He considers in a good year he will take from 12 to 15 bushels off an acre to set aside. No insect has yet been found in timothy.

The Dairy.

Drought and the Dairy.

BY L. B. ARNOLD.

One who has sense enough to learn from the experience of others is, by common consent, accounted a wise man. He who can only learn by his own experience is rated as a fool. What appellation then will befit those who gather no wisdom even from the dear school of experience? There are lots of dairymen who must be counted in this third and unnamed class as they jog along year after year, and even through a whole life without profiting anything from the repeated events of the recurring years. There never was a more suggestive lesson put before a farmer than that which the loss by repeated droughts offers to dairymen; but, alas! how few heed it. More than three quarters of the dairymen in the United States and Canada fail to appreciate that droughts are frequent and never ceasing, and that heavy losses are involved unless provision is made against them. Will the lesson taught by the extensive drought of the present season be heeded by the owners of starved herds?

When I commenced dairying on my own account I was young and inexperienced, and made the mistake common to the calling, and paid the full price of a fool's tuition. I provided grazing enough for my herd if the season should prove favorable, but made no provision in case it should not. The first season everything went along smoothly. The weather was favorable, and showers enough fell to keep the grass growing, except a short time in August, and the supply on the ground tided the flock over this spell and kept up the flow of milk. My cows made 400 lbs. of cheese apiece within a small fraction, which was considered a goodly yield in those days. The next year fortune frowned. Six weeks of dry weather left my stock on barren and bare pastures with not half enough to eat, and their milk ran down to about one-third of what it was at same date the year before, and the return for the season fell a little below 300 lbs. of cheese to the cow—a loss of over 100 lbs. of cheese to the cow. Cheese was then worth $7 per 100, and this on a dairy of 30 cows depleted my pocket to the tune of $210, which $25 expended in raising fodder corn would have saved and left my herd in better condition for the next year. But the lesson was not lost. It counted as so much paid for tuition. I never was caught so again. I never failed to provide some soiling crop to bridge over the space from fresh grass in early summer to fresh grass in the fall. By this means the flow of milk was kept continuous, and the yearly product went up from 300 lbs. of cheese per cow, for the season, to 480 lbs., which at the time was considered a large product, but it would not be satisfactory now. My experience was not a singular one. A few others took a similar course, and all who did made similar advances in the yield of their herds, but the great mass of dairymen paid no heed to our example, though we talked and published widely for the benefit of our brothers of the pail.

The immediate loss of milk by not supplying full rations of milk-producing food the whole of the milking season is not the end of the misfortune. It affects the flow of milk in after years, and counteracts all efforts at improving the milking capacity of the cows and their descendants. When the udders of the cows are limpse or empty one half of the year, this condition becomes a fixed and hereditary quality which may be looked for in the future heifers with as much certainty as like may be expected to produce like in any other particular.

On the other hand, if cows are kept up to their best efforts they will gradually make their condition a permanent and fixed tendency in their nature, and will transmit it to their descendants the same as every other quality they possess.

The difference between so treating them as to depress the milking tendency in the cows of the country and elevating it is simply immense. The native stock of the country is naturally strongly favorable to a good milking habit, but bad treatment has sunk it sadly in that respect, and a continuance of the starvation policy will keep it there.

After studying the effects of the customary treatment of dairy stock for over thirty years, I am confident that scanty feed in summer droughts and pinching with needless exposure to cold in winter, keep the annual product of the cows of the country forty percent below what it would be with fair and constant rations the year round and comfortable housing.

How long must such a ruinous loss continue, which a little brain power could easily avert? When will dairymen all learn to profit by their own hard experience? It is gratifying to know that *some* of them are doing so, and that the number is steadily increasing.

Testing Milk at Cheese Factories.

In response to an article on this subject published in our July issue, our special dairy expert visited a large number of cheese factories between Elgin county in the west and Peterboro in the east, and tested the milk while it was being delivered from the cans of the patrons. We are pleased to say that the results were eminently satisfactory, but we regret that a large number of invitations had to be refused for want of time. The cheese-makers especially, as well as many of the presidents and directors of the factories, took great interest in the tests, and were all anxious to learn how they were conducted. Our expert readily explained, and it was a source of great satisfaction for them to know that milk could be tested as fast as delivered and accurate results obtained, two tests being made of each patron's milk, so that determinations were made as to whether the milk was watered or skimmed, or both. The tests were quite conclusive when the evening's and morning's messes were kept in separate cans, but when the milk was mixed, some latitude had to be allowed.

The methods of adulteration are numerous, but those usually practiced are skimming the evening's milk and watering the morning's—sometimes the one, sometimes the other, and sometimes both. Sometimes the strippings are withheld, which form of adulteration is exactly equivalent to skimming. Many farmers may regard themselves innocent when, in taking a lunch before going to bed, they dip the milk from the top of the can; but this is skimming, pure and simple, and a bowl full of milk, or rather the cream, removed in this way, will be detected by the testing instruments. Another criminal practice is found in rinsing out the milk pails with water and pouring the rinsings into the cans. Slight adulterations of this kind can usually be detected. It is a striking coincidence that the older the factory the greater the adulterations practiced. In the east the cows give poorer milk than in the west, but adulterations are not practiced on so large a scale. In some of the factories, nearly all the patrons do a little tampering with their milk, while in others the tampering is practiced only by a few, but usually on a large scale. It is impossible for all the patrons to do much tampering, for it would require such an unusually large quantity of milk to make a pound of cheese that an investigation would be the result. In some cases 25 to 30 percent of water was found in the milk, and the percentage of fat was reduced to 1½, whereas not less than 3 percent has ever been obtained from the milk of a herd of cows. On the other hand, the milk from some herds in the west analyzed nearly 4 percent of fat, proving that there are some excellent feeders and breeders amongst our farmers, who are honest men as well. We believe the time will soon come when each patron will be paid according to the quality of his milk, in which case the losses sustained by adulterations will fall upon the perpetrators, and progressive farmers would be encouraged in their efforts to produce good, honest milk.

Nearly all the cheese-factories have some instruments for testing milk, but the objections against them are so serious as to render testing almost impracticable and worthless. Our expert found many of the thermometers and lactometers several degrees astray. The cheese-makers have rarely time enough to spare to make even these inaccurate tests. An example will illustrate: At one factory our expert made over 30 tests while the cheese-maker was cooling one sample of milk for the purpose of taking the specific gravity with his lactometer. The sample of milk was pure, but his lactometer indicated that 15 percent of water had been added. At some factories tubes or cremometers are used for the purpose of testing the volume of cream raised from the milk. We warn cheese-makers against these tests for they are not reliable, although by operating upon the skim-milk comparative results of a satisfactory character are often obtained. The small tubes used in some factories for raising the cream and allowing the casein to coagulate are utterly worthless, the results being extremely unreliable.

It must not be supposed that the science of milk-testing can be learned in a day, although very little skill is required in operating the instruments. We believe it would pay every cheese-maker to become an expert milk-tester; his services would be in much greater demand, and the study of the subject is a pleasant occupation. It is surprising to find the difference in the various operations of cheese-making as practiced by cheese-makers. We should be highly pleased to see an organization of cheese-makers through which they could compare notes both in the manufacture of cheese and in the testing of milk. Their voices are rarely heard at our great dairy conventions. Such an organization will receive the enthusiastic support of the ADVOCATE. Who will be the organizer? It will also receive the sympathy of our farmers. We are pleased to find that the invitations for making milk-tests have come from the farmers and cheese-makers, whose organ the FARMER'S ADVOCATE has always been and always will be.

What the protection of a cool porch is to the haymaker during the brief rest after a hearty dinner, such, says the Prairie Farmer, is the clump of shade trees on the breezy knoll to the cows while digesting the large bulk of grass they must eat to make a liberal portion of rich milk.

Packing Butter.

A few hints on this subject will now be useful not only for farmers who manufacture their own dairy products, but also for those who send their milk to the cheese factory or their cream to the creamery, and creamery men and other butter packers may also have something to learn. A great deal of butter is made on the farm after the cheese factory and creamery close their season's operations, and much good butter fails to reach profitable prices owing to imperfect methods of packing. It will not be amiss first to consider the various methods adopted in countries which pay more attention to the subject than we do, and whose reputation in the leading butter markets is superior to ours.

The first question is, who and where are our consumers? What are their demands, and what is the number and character of the middlemen? Does the butter go directly from the producer to the consumer? Is it for immediate consumption, or is it to be preserved for the near or far future? When it is sold in small lots directly to the consumer, it is necessary, in order to attract the best customers and get the highest prices, that the packages should have an attractive and a uniform appearance. If it has to be colored in order to attain these objects, so much the worse for the butter, and sensible consumers will shy at it. In this method of preparation, the butter is usually made into pound or half pound rolls, covered with clean muslin cloth, and the rolls should not be touched with the hands in handling. When roll butter for immediate consumption is to be shipped short distances and gets into the hands of middlemen, a good practice is to make a neat wooden box holding say 12 rolls, each roll being wrapped in a piece of muslin cloth. This method has attained great popularity in England and France. Another method of preparing butter for immediate consumption is to pack it in porcelain vessels, in which case it is usually peddled around the town or city, sometimes by the producer and sometimes by a middleman, and sold in any quantities desired. For such purposes tin vessels are objectionable, as they rust easily and injure the flavor of the butter.

However, in this country, where mostly all the butter is made in summer, we are more directly concerned in *preserved* butter, packed in such a manner that it will stand long journeys or voyages and keep sweet for several months. Under this system, firkins are used; and as this country is destined to become one of the greatest dairy countries in the world, it would be well to mention the varieties of timber which farmers should now commence to grow in order to supply the demand for firkins. It is not likely that any material will surpass wood for cheapness, convenience and durability. In Holland, France, and Ireland, oak firkins are used, while in Schleswig-Holstein, beech, when felled in winter, is regarded as the best timber for making them. Basswood and poplar enter largely into some methods of packing, especially for making boxes for roll butter. On this continent, white ash, spruce and white oak are favorite timbers out of which firkins are made.

However, the kind of wood has less to do with the firkin than the method of preparing it. The chief objection to certain kinds of wood is the "woody flavor," which can be removed, although by different methods, according to the natu re of the flavor. For example, less effort is required to prepare beech than oak. In Holland the oak firkins are prepared by steeping them two hours in lye, and, after pouring off the lye, letting them stand in the air for a day to dry, after which they are filled with a solution of alum for 24 hours, and left to dry for another day. Just before packing the butter into them, they are thoroughly cleaned with cold water. In preparing the beech firkins, they are simply washed out with a solution of soda, then washed with water and dried. Sometimes they are also filled with a brine, which is allowed to remain in them several days. In the United States, the woody flavor is removed by soaking the firkins in hot brine, one quart of salt being placed in each tub, and boiling water added. When the brine gets cold, the same operation is repeated, except that cold water is added instead of hot, and the second brine is allowed to remain in the tub until it is ready for packing.

It is preferable, if possible, that the firkins used by each packer should have a uniform weight; otherwise the honest weight of the wood should be marked on each tub, which facilitates the ascertaining of the just weight of butter. There are many conveniences in having a uniform tare for the butter tubs, but this does not mean that every tub should contain the same quantity of butter. These tubs may vary from 30 to 100 lbs. in butter capacity; what is meant is that each tub which contains the same quantity of butter should have the same weight.

After the butter is packed in the tub, it is customary to place a "salt plaster" under the lid; but Prof. Robertson, who made observations at the Colonial Exhibition, informs our dairymen that this layer of salt breaks before the butter reaches the English markets. On the continent of Europe, where the best systems of packing are adopted, paraffine or parchment paper is highly recommended. Tin-lined tubs, although favored in some quarters, are objectionable from the fact already stated. When cloth is used to prevent the butter from adhering to the walls of the tub, care should be taken that it is free from impurities, or any substance unpalatable to the taste or injurious to the health.

When it is considered that Britain imported last year 77,170 tons of butter (value £8,140,188), it will be seen that our butter trade is capable of enormous development, and as our reputation depends largely upon our style of packing, the importance of the question is quite apparent.

Causes of Inferior Cheese.

In a previous issue we pointed out the causes of bad milk, which influence the quality of the products; we shall now trace the origin of bad cheese, the inferior quality of the milk only causing a part of this failure. The milk may be perfectly good, but mischief may originate in the vat, the press, or the curing room.

Puffy cheese may originate directly after the manufacture or in the curing room. Such cheese are known by the openings they contain or by their distorted form. This condition is caused by an abnormal development of carbonic acid gas, which produces a rustling noise, and is traced to a rapid decomposition of the milk sugar. Such cheese lose in value, not only on account of their irregular shape, but also on account of their flat and insipid, or bitter taste. The trouble lies in the milk itself, the presence of colostrum in the milk, the use of spoiled rennet or extract, the improper manufacture of the cheese, especially leaving in the curd too much whey and consequently too much milk sugar, and in pressing or curing at too high a temperature. The remedy consists in removing these causes.

Leaky cheese are chiefly those which are made too soft. In this condition they also lose their natural form, and assume a strong and often a disagreeable smell and taste. This condition, which also arises in normal soft cheese if they do not go into early consumption, is caused by overly-rapid curing and decomposition, also under conditions which hasten the latter—such as warmth, dampness and access of air to the interior of the cheese. Cracks in the cheese favor the admission of air, and an excess of whey favors decomposition. The whey should be thoroughly removed, and as one means to this end a larger amount of salt is sometimes added.

Cracked or chinky cheese—that is, cracks found on the surface, have their origin in too small a percentage of water, either on the surface or throughout the entire mass. In soft cheese, the cause is attributed to pressing the curd when the particles are too dry, when the milk is coagulated at too high a temperature, when sour milk is employed—in short, when any condition arises by which the water in the particles of curd is unnecessarily reduced. Especially when sour milk is used, the interior of the cheese has a dry, crumbly composition; but, also, in soft as well as hard cheese, dry air drafts, even when the cheese are exposed to them only for a short time, may become a source of cracks. Such cheese do not ripen perfectly, and their value is reduced.

Blue cheese have two causes, one being from blue milk—described in a previous issue of the ADVOCATE—the other being from the presence of oxide of iron. The latter has only been found in milk from separators where parts of the machinery have become rusted. In blue cheese, blue spots are observed on the surface or throughout the entire mass.

Mouldy cheese are caused by a fungus, which commences on the surface and eats into the interior, whereby the goods lose in weight, appearance and flavor. Where mould occurs, conditions are present which favor the growth of the fungus, namely, dampness and insufficient ventilation. The best preventative is to remove these causes.

The night's and morning's milk should be kept separate. It has been found by long experience that straining or pouring the warm morning's milk into the cold night's milk, causes rapid change and souring. It is well known that reducing the temperature of any animal product and then raising it again, hastens decomposition. Eggs, butter and cheese, kept in cold storage, have to be soon disposed of and consumed when brought out into a higher temperature. Meat and butter put into a refrigerator the good housewife finds soon rapidly taint and go off flavor. On the same principle, raising the temperature of the cold night's milk by mixing hot morning's milk with it, hastens change and decomposition. Hence they should be delivered at the factory in separate cans.

Ten acres of soiling crop (says the N. E. Farmer), will give the same results as sixty acres of pasture; and during the hot, dry months of August and beginning of September, when the pastures are burned up, will prove vastly more satisfactory. One man for an hour during the early morning will cut enough for two meals; and the feeding to the animals is only a very short chore.

The Farm.

Levelling Drains—Cost of Draining our Experiment Grounds.

Autumn is one of the most convenient seasons that can be devoted to drainage. There is, however, one difficulty that presents itself to the unexperienced drainer at this season, which he is not liable to meet with in the spring, viz., the levelling of the drain. In spring, when there is an abundance of water in the soil, it is frequently not necessary to level at all. If there is a fixed outlet, a farmer cannot be far astray if he digs the drain the required depth at its outlet and then observes that "the water is following him up." This means that there is an equal depth of water on all parts of the finished bottom of the drain flowing evenly and gradually towards the outlet.

In the fall of the year, especially if it is a dry one, this natural level is, however, generally wanting, and the drainer has to use other methods. The unaided eye, however experienced, ought not to be depended upon for determining the level, for a slight mistake in this matter might cause the tile to fill up and destroy the usefulness of the drain.

The instrument we employed to find the level of the drains dug in our experimental field this spring is represented at figure I, at S and T, and consists of a common spirit-level, *a*; a piece of board, *b*; 2 pieces of scantling 5 feet long, *cc*, and a measuring pole, marked in feet and inches, 12 feet long. The board (*b*) may be of any convenient length, say between 6–10 feet. Its upper edge should be carefully and exactly plained with a jointer. The two pieces of scantling (*cc*) should be pointed, so that they can be driven into the ground at the lower end, and bolted with their upper ends to the side of the board near its ends, as represented in the cut. The exactness of the instrument depends upon the straightness of the upper edge of the board and the accuracy of the spirit-level. Before going out to level a given line, secure the services of an assistant and equip yourself with your instrument, a measuring pole, a measuring chain or tape line, pieces of shingles to be used as marks, and a pocket-book and pencil. Then go to work and plant your instrument on the line to be leveled, and at such a distance from one end of it that you can plainly see at what place on the measuring pole (held by the assistant at the end of the line,) it strikes. This distance varies much and depends on the accuracy of the instrument, the surface of the field to be leveled, and the sight of the operator. The planting of the instrument means to erect and level it. When you think the instrument stands level, it is well to change the spirit-level, end for end, to see if it indicates the same in both positions. When making an observation, remove the spirit-level, and then look along the edge of the board, noting

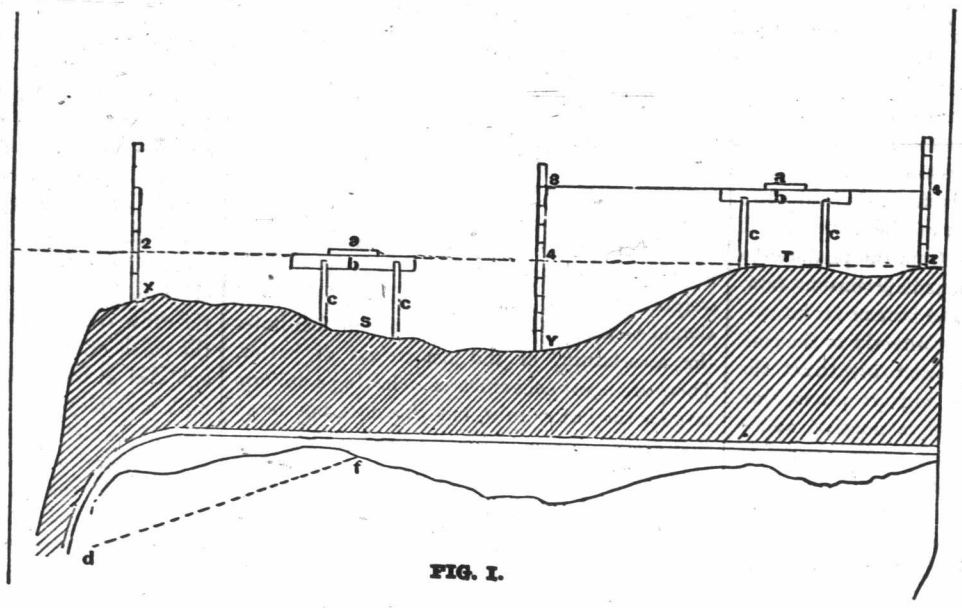


FIG. I.

at what place the continued line of its edge strikes the measuring pole. The place where the instrument is first erected is called station No. 1, and the observation first made is called the foresight of that station. If *x* represents the end of the drain shown in Fig. I, then S would be called station No. 1, *x* would represent the foresight of that station and *y* the backsight of the same. The backsight is obtained by leaving the instrument in the same place, the assistant carrying the measuring pole past the instrument and placing it on the line to be leveled at some distance from the operator, say at *y*, after which the operator takes a second observation in the opposite direction to the first one. After both these observations have been made, the operator carries his instrument past his assistant and plants it at a place similar to position T in Fig. I. From this point he takes a foresight towards *y* (8 feet), backsight towards *x* (4 feet), after which he moves on to station No. 3, and repeats here, as well as in all subsequent stations, the same operation as that gone through at No. 1. The assistant must mark with the pieces of shingles he has taken along, all the points at which he erected his measuring pole for the purpose of making an observation, so that when all the observations have been made, both of the operators may return and measure the distance between each foresight and backsight.

By looking at figure I, it can be easily seen that if the foresight *x* reads 2 feet, and the backsight *y* 4 feet, that there must be a rise of 2 feet towards *x*, and if foresight *y* reads 8 feet and backsight *x* 4 feet, that in this case there must be a fall of 4 feet towards foresight *y*. In the one case there is a fall of 4 feet towards the foresight, and in the other a rise of 2 feet, therefore the point *z* must be two feet higher than *x*.

A good method to note the readings of the different sights or observations taken in the field is to divide a page of the note-book into three columns. In those on the outside note the readings of the foresights and backsights, and in the central one the distance between them. Then add up all three columns. The central column will indicate the distance between the starting and the end point, and the difference between the two side columns will indicate the rise or fall between the two points. If the backsight gives the smaller sum, then the fall will be towards the starting point of observation, but if their sum is the larger, the fall will be towards the end of the line of observation. For example, taking the distance between *x* and *y* to be 200 feet, and between *y* and *z* 250 feet, then the following table will represent the field notes for figure I:

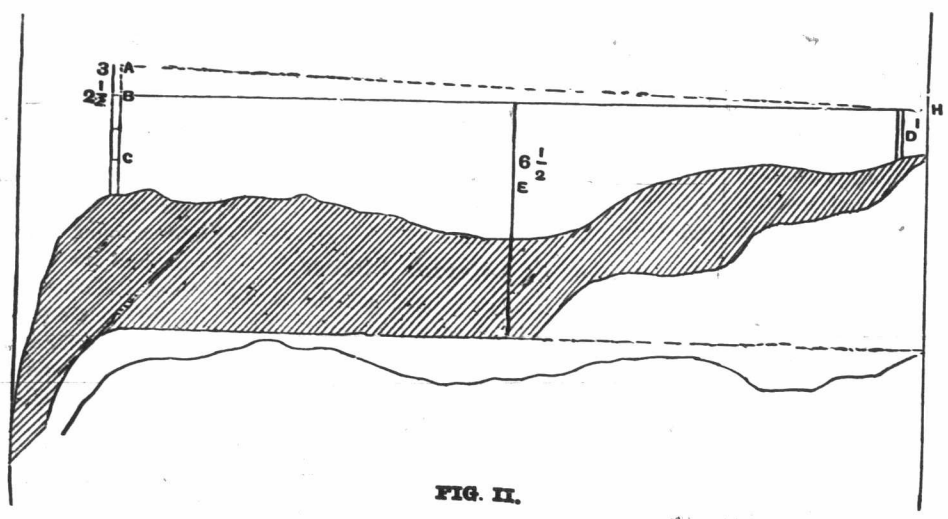


FIG. II.

Foresight.		Distance.		Backsight.	
ft.	in.	ft.	in.	ft.	in.
2		200		4	
8		250		4	
10		450		8	

Ten feet—8 ft. = 2 foot fall towards the outlet of the drain or towards the foresight *x*.

The fall of drains that form an angle or a curve may be checked by placing the instrument on a line drawn between the two terminations of the drain, as shown in figure I, by the line *d f*.

Having determined the natural fall between the two ends of a straight drain, the next point to be considered is to provide for a method of obtaining a straight and uniform bottom. For this purpose drive two stakes at the ends of the drain in a direct line with the centre of the drain. The ends of both of these poles should be on a level, viz., if there be two feet fall between the points

C and D in figure II., then the pole C must project 2 feet further above the surface than D to be with its upper end on a level with the upper end of D. If D is one foot above the ground, then C must be three feet above the surface, to give the level dotted line A H. To obtain the desired fall in the drain, drive down the stake at the outlet of the drain the same number of inches (or feet) as the drain is to fall towards that point. Say the fall is to be 6 inches from D to C, then drive down C 6 inches, and this will give the line B H to correspond with the bottom of the drain. If the drain is to be 4 feet deep at the outlet, get a pole, E, 4 feet + 2½ feet = 6½ feet long, so that if it is placed at the bottom of the drain it will reach to the top of the poles on which the imaginary line B H rests. If at any time you desire to find out if the drain is deep enough at any point, place the pole E in that place, and let an assistant look over the top of the poles C and D, and if the tops of the poles C, D and E form a straight line, the drain is just the right depth in that place.

The cost of draining varies in different localities, depending upon the cost of tile, the wages paid to the laborers, and to some extent upon the character of the soil. The depth of drain has very little to do with the cost per acre, for the deeper the drains the farther apart they can be placed. The cost of the main drain in our experimental field, being on an average 4 feet 6 in. deep, and passing through a strata largely composed of sandy loam, was as follows:

COST OF MAIN DRAIN PER ROD.

	c.
Digging drain	27.7
15 3-inch tile at $10 per M	15.0
Hauling tile 2 miles at $1.40 per M	2.1
Laying tile	1.6
Filling in the drain	12.6
Allowance for incidentals	1.0
Total cost per rod	60c.

The average depth of a drain is obtained by taking the average of a large number of measurements made at equal distances from each other. The cost of the above drain would be 52 cents per rod if $1 per day, the average wages which farmers pay their hands, had been paid, instead of $1,25, the amount which we had to pay for experienced drainers in this city. The superintendant of our experiments, who is also a practical man, made accurate calculations as to the cost of the drain, specially for publication, and his figures can be thoroughly relied on.

By incidentals we mean such unforseen hindrances as are often met with in cutting a drain, as caving in of the sides, meeting with large stones, etc.

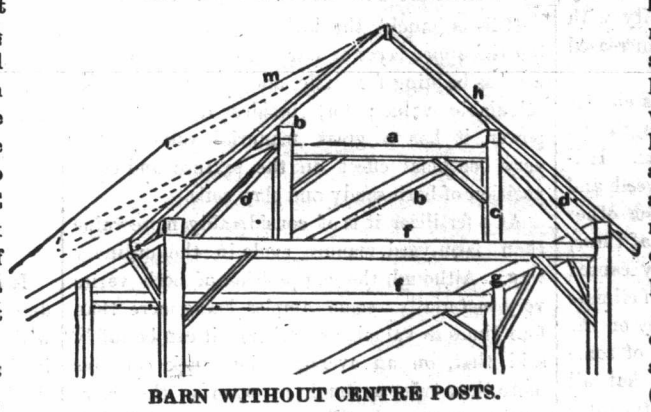
Farmers are all too apt to follow along in beaten tracks, for no other reason than that others travel the same way. The most successful farmers are often those who think to do something that all their neighbors overlook or neglect to do.

The problem of farming consists in making the soil increasingly fertile. Manure is the farmers' savings bank, and if more of them would have large heaps of it every spring to spread upon their lands, instead of money at interest, they would prosper better in the end.

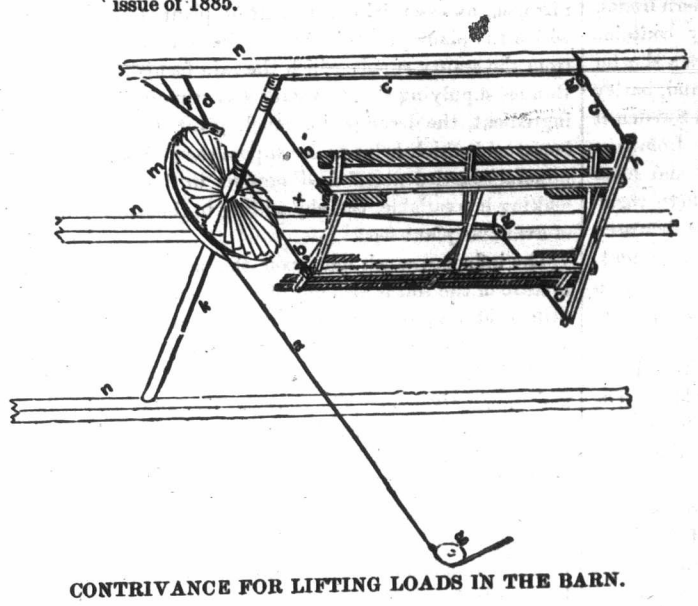
A Barn Without Interior Posts.

In the accompanying illustration we present to our reader the gable end of a barn framed in such a manner as to dispense with all interior posts, and not divided into mows, thereby enabling a team or wagon to turn in all directions with ease and safety. We took the sketch from the barn of Mr. John Fothergill, Burlington, Ontario.

This sketch requires little or no explanation. The purline-plate, post *c*, is, at its lower extremity, bolted to the beam with a bolt passing through the beam *f*, and the centre of the post nearly reaching up half the length of the latter, here fastened with a nut. The entire weight resting on the purline plates is supported by the timbers *d*, *d*, and the purline-plate post-girt *a*. The former *d*, *d*, are not merely common braces, but regular sticks of timber intended to bear weight. No weight at all rests upon the beams, and the purline plate posts might be dispensed with altogether, a bar of iron taking their place, as is the case in the dairy barn of Mr. H. S. Losee, Norwich, Ont., illustrated in our March issue of 1885.



BARN WITHOUT CENTRE POSTS.



CONTRIVANCE FOR LIFTING LOADS IN THE BARN.

A Home-made Rack Lifter.

Amongst the labor-saving harvest contrivances the rack-lifter is becoming one of the most popular. It can be cheaply constructed, and when well made is very durable. Any farmer with ordinary mechanical skill can easily construct it. One of the simplest and most efficient is represented in the subjoined illustration, taken by our artist from one constructed by Messrs. Fothergill & Son, Burlington, Ont.

It simply consists of a cross-piece of timber, *k*, extending over the beams of three bents, forming the axle of the wheel, *m*, about five feet in diameter. This wheel is about six inches thick in the groove. It is constructed out of two sets of three inch planks fastened together, with flanges on each side, the one flange having projected edges forming teeth something like those of a circular saw, a dog, *f*, being attached to the purline plate, which prevents the wheel from turning back when the load is elevated. The rope, *d*, attached to the dog, extends to the floor. The rope, *a*, running under the pulley, *g*, is wound around the wheel, and the horses are attached to the other end. The cut sufficiently illustrates how the rack is evenly lifted by means of ropes, and the pulleys *g*, *g*—*h* being a strong piece of timber placed under the hind end of the rack. The four ropes winding around the axle, *k*, elevate the load. The rack may be elevated to such a height that the bottom of the load is as high as the beams on which the axle rests, by which the bottom of the load can be pitched with ease to the highest point in the mow.

A long barn requires two fixtures, but one rope will do for both. The whole arrangements, including timbers, labor, rope (1¼ inch), can be completed for about $50.

A New Fertilizer.

A new phosphorous fertilizer has lately come into the market. It is manufactured as a by-product in the preparation of iron from phosphate iron ores, and contains, beside phosphorous, other elements of plant food of lesser importance.

Although this fertilizer (phosphate meal) has its phosphorus in an insoluble form, it produced, according to German experimenters, better results than soluble phosphates (superphosphates.)

This should be a hint to our farmers to observe closely all experiments made with soluble versus insoluble phosphate fertilizers; for if the latter, being much cheaper, give better results than the former, it should be decidedly preferred; but this seems almost incredible.

Keep your tools free from rust and dust; clean them every night after work, before putting them away. During the time they are not in use, a good oiling will prevent rust from forming on them. Implements well taken care of last much longer than those that are left wherever last used, and it is much easier and more satisfactory to work with clean, bright, well kept tools and implements.

Ontario's export of ashes amounts to about $30,000 annually. Politicians may boast of our large export trade, but would it not be to the interest of our farmers if these ashes remained in the Province, to be used as fertilizers and turned into products worth $100,000 annually?

The heavy hoe requires strength to lift the extra weight. The dull hoe requires strength in bringing it down again, to make it cut. These are very poor ways to use up strength. Make the hoe light and sharp, that the strength may be used for killing weeds and cultivating vegetables. This is only an illustration; the principle applies as well to the scythe, the cultivator and the reaper.

Influence of Climate upon Plants.

The constantly increasing demand for new varieties of seeds especially grains, has led experimenters to import and test a large number of varieties. A number of private individuals, as well as our governments, have made large importations from different countries of the world. This demand for new varieties has likely arisen from the fact that numbers of standard varieties, after they had been grown for a length of time, deteriorated, and had therefore to be replaced by other varieties. The beneficial results obtained by exchanging the seeds grown in one locality with those that grew in another has likely increased this demand.

It is astonishing how, in some cases, a change of locality increases the vigor and strength of a plant, sometimes also changing its habits. It is a well known fact that amongst our weed and insect pests, some of those imported from other countries are our worst enemies, and that these, while in their native country, frequently caused but little trouble. Although a change of climate or soil acts in some cases very beneficially on the quality of the fruit and productiveness of some plants, it does not necessarily follow that all changes made at random would produce the same results. An observing and cautious importer may in some cases draw a pretty correct conclusion as to the likely success his seeds will meet with in their new home.

It may be set down as a general rule that all plants have certain climates in which they thrive best. It has been observed that plants have a more dwarfed and branching statue, a more abundant foliage, and that their leaves and fruit possess brighter colors, the nearer they reach their northern boundary of successful cultivation. It has also been noticed that, in the northern limits, a plant is more productive, generally contains more sugar and gluten, and requires a shorter time to complete its growth. In Finland, barley ripens in 90 days, whereas in southern Sweden it requires 100 days to mature. Seeds from the north are said to possess an evener and more active germinating power than southern varieties. Some authorities think that this increased activity of the seed is, to a considerable extent, due to the cold winters of the north. To confirm their belief, they imported in the fall seeds from a northerly country; one half of these they kept in as cold a place as possible, and the remainder was stored up in a somewhat warmer place. The result was that that portion of the seeds kept cold germinated better and produced the more vigorous plants.

Seeds imported from the north are likely to retain some or all of the advantages of the north for a time, and are likely to be hardy, early varieties. As the warmer climate of the south produces a more vigorous growth, such imported seeds sometimes give a larger return than they did in the colder climate. Such varieties are, however, likely to deteriorate in a short time, for they soon become acclimatized, growing rank and less productive, and fresh importations must be constantly made to keep up the standard. An importation of southerly seeds, if they thrive at all, are likely to reverse this course, viz., they are more likely with good management to improve upon their first yield, than to diminish their productiveness.

A dry climate produces a comparatively smaller but drier and flintier grain, which possesses good milling properties. It does not follow that a large, plump grain, grown in a moist climate, is superior to a smaller and flintier grain grown in a dry district, for the increase in size may be entirely due to an increase of water, and this water only acts injuriously on the keeping as well as the milling properties of the grain.

The pea, a leguminous plant, is influenced very little by climate, but the character of the soil has a more marked effect on its growth than on that of the cereals.

Muck: Its Action and Uses.

Humus (muck), the dark, vegetable soil forming the upper layer of our swamps, is sometimes used as bedding for cattle, and, as such, is of incalculable value; for, besides its absorptive power, it has a great manurial value and a very beneficial effect on the texture and composition of both sandy and clay soils.

As a fertilizer it is of considerably more value than farm-yard manure made in the ordinary way. Although the composition of both varies very materially—some samples being more than four times as valuable as others—it can be safely said that, on an average, the muck contains more than twice as much nitrogen as the farmyard manure. As this element of plant food is—as well as being the most expensive—the one principally contained in both the above manures, it is evident that the muck is of decidedly greater value as a fertilizer. Therefore, when muck is used as bedding, it not only increases the quantity but also the quality of the manure. It has been found that plants may have a short, lingering growth in a soil destitute of organic (vegetable) matter or nitrogenous fertilizers, yet to obtain a vigorous and profitable growth it is of the utmost importance. By it is supplied the nitrogen, an essential constituent of plant food, which the plant otherwise would have to draw from the scanty supply which the rain furnishes. Besides supplying this necessary and stimulating ingredient, the decomposing muck gives off carbonic acid which helps to decompose the dormant mineral constituents of food present in the soil, making it available, thereby adding to the store of available plant food.

The influence muck has upon the mechanical texture of the soil is also one of vast importance. Stiff, cold, clay soils are made more friable by it, allowing a freer passage of roots, air and water through it, thereby increasing its temperature and productiveness. The humus also adds to the retentive power, that is, the power to absorb and retain plant food, thereby preventing its waste. It also helps the soil to withstand the drought better, and, on account of its dark color, it tends to equalize the temperature of day and night. On a sandy soil the application of humus has the same effects in a somewhat more marked degree, with the exception that instead of loosening the already too loose soil, it tends to firm it. In short, humus tends, in all soils excepting swamps and peats, to bring about that "happy medium" so desirous for all profitable farming.

The loss of the liquid manure is one of the most serious ones that can occur in the management of the farmyard manure. Liquid manure tanks, in some cases, rather increase than retard this loss. The use of dry muck—a powerful absorbent—as litter would not only do away with this loss, but it would also, by absorbing ammonia and other gasses, purify the stables and make them more healthy.

As muck possesses very active capillary action it will not dry when left in a heap on the ground, especially if the latter is of a moist character. It is therefore advisable to erect a platform about one foot or more from the ground, with its floor constructed out of narrow boards not laid too closely together, so that the air may pass through the cracks into the muck and the water through them out of it. Put the muck on these boards, if possible, in thin layers, one at a time. To protect the heap from rain, put over it a roof, suspended on posts. Let it project several feet on all sides past the patform on which the muck heap lies, and have it as close to the ground as convenient. In this way the heap is protected from rains, and is not out of the reach of the drying winds.

PRIZE ESSAY.

Country Life.

BY T. A. PATRICK, ILDERTON, ONT.

It has been found that one of the best ways to describe anything is to compare and contrast it with something else. Let us then consider life in the country as compared and contrasted with life in town.

Life in the country is free from the narrow restraints and conventionalities of town life; its tendencies are freer and less restricted. As we are all more or less influenced by our surroundings, we should expect to find, and we do find, the resident of the country freer and less conventional than the resident of the town. He has less regard for appearances and more regard for comfort. His walks are not confined by fence or boulevard. If he wishes to rest he does so with the conscious freedom of being alone and unobserved. His eyes are not tired by a wearing sameness of bricks and mortar. He does not need to take a journey to get a breath of pure air. His prospects are limited by hill and horizon, not by warehouse and shop. His work is not in shop or offices with an "eight-foot ceiling," dark, damp and dingy, but in the broad field, under the blue canopy of heaven, with properly diffused light, and a ventilation that insures his never breathing the same air twice; therefore he has the ruddy glow of health, not the sickly pallor of the citizen. He works hard, but he sleeps sound. He spends the day in useful toil, and he has no temptation to spend the night in debauching revelry. If he be prematurely old it is from work and not from worry; it is because he has used his mind too little and his body too much; but even yet he lives to read the obituary of his younger contemporary of the town. Life in the country means health in youth and a green old age.

The country resident knows his neighbors for miles around him, and as is his acquaintance so are his sympathies—enlarged and enlarging. Is his neighbor sick, his services are freely offered, and he relieves his sick brother's anxiety by attending to that brother's work. This rustic way of extending sympathy is more practical than calling and leaving a card. Those living in the country are more dependent on each other, have more in common, than those living in town, and this mutual interdependence and community of aim and purpose, brings country life the nearest to that Utopia where all men are brothers, bound by the common ties of a common lot.

The advantages of an early life in the country and on the farm are inestimable. From the

country must come the "brain and brawn" of society. Life in town is so degenerating that scarcely can the second generation produce a man with the ideal "*Mens sana in corpore sano*," (a sound mind in a sound body.)

"Stick to the farm, boys," is an excellent motto, but the inexorable laws of supply and demand are somewhat against it. The demand for men with brain comes from the town, and from the country must come nine-tenths of the supply. The leading clergymen, lawyers, doctors and editors of the present generation have been country boys, and it promises to be thus in the future. Many of our most successful merchants and tradesmen are indebted to their early life in the country for the valuable lessons of economy, diligence and perseverance learned there, which have been the guiding principles of their successful careers. Idleness, the greatest enemy of youth, finds the youth of towns his peculiar prey, those of the country being protected by an impenetrable coat of mail called work.

The wives and daughters, too, of the country enjoy a life of greater usefulness than do those of the town, and to a well regulated mind, a life of usefulness is a life of content. It is not theirs to haul around by a fancy chain a blanketed pet poodle. They miss that exquisite employment. To them the care of a child is of more importance than the care of a lap-dog, and by them a mother's paramount duties are not relegated to an indifferent nurse. They have no coachman to flirt and elope with, and they find no time to devote to "yellow-backed literature." Knitting and sewing are less enervating than the ball and the opera. A gingham gown is generally more in accord with hygienic principles than is an evening dress. Healthful surroundings are alike remote from luxury and from poverty. Life in the country—a life of plenty—is free alike from the evils of the one and the vices of the other.

Country life, with its freedom from useless restraints and conventionalities; with its neighborly sympathy; its community of aim and purpose; its healthfulness and its naturalness; its freedom from the vices and the temptations alike of luxury and of poverty; its early lessons of perseverance, diligence and economy; its healthful work and its refreshing sleep; with all these and its many other advantages, it should be, and but for perverse, change-seeking human nature it would be, *the* life of content.

A Chicago correspondent referring to the severe drought prevailing in the Western States, mainly Michigan, Minnesota, Kansas, Iowa, Nebraska and Dakota, says that there is an area of 75,000 square miles located as above stated, within which vegetation has lost its normal color and the earth its moisture. The intense heat has been a terrific strain upon man, but its effect upon cattle has been simply appalling. Without pasturage to browse upon, or pools in which to stand during the hot hours of the day, the poor beasts have become so emaciated as to be wholly unmarketable. The farmers in the dairy districts have in some instances been compelled to feed and water their cows from their own larder. In other places, forest trees have been felled and dragged to the pastures and the cattle turned loose to browse upon the leaves. Hundreds of cows are being killed and shipped to market for a mere pittance. In some places fences have been run through corn fields, and the starving cattle permitted to feed upon the leaves and stalks. When these have been eaten the fences are extended until the entire fields have been eaten clean. In some parts of the district the drought is so terrible that butternuts and walnuts have fallen from the trees. Potatoes, when taken from their beds of ashes, look like crab apples. They are wrinkled and spongy, and unfit for food. There is also a great scarcity of milk, owing to the inability of cows to find nutritious food.

Garden and Orchard.

Experimental Potato Culture.

During the past few years the subject of more intensive farming has been exhaustively discussed. That there is ample scope for it can be readily observed from the fact that over 1,000 bushels of potatoes per acre have been grown, while the general average is little over 100 bushels. Several methods may be employed to increase the producing capacity of a farm. One of these is to increase the productiveness of the soil by the application of manures or fertilizers, plowing under green crops, by the operations of tillage, drainage, or any other method that may be devised to increase the store of available plant food. The second plan is to increase the amount of seed sown to the acre. A third plan is to combine the above two methods to any varied extent. The most convenient crop to illustra e the above methods is the potato, for with it the most experiments have been conducted. That the direct application of fertilizers, if judiciously used, is a method of increasing the yield per acre, no body will doubt; but a large majority of farmers seem to think that ten or twelve bushels of seed potatoes will give them as good returns as thirty or forty bushels of good sized seed. Several of the American stations have made numerous experiments; one of them made over forty experiments in a year, on the size of seed alone. In the following table we give the averages of some of the most extensive experiments that have come to our notice:

TABLE SHOWING THE RESULT OF VARIOUS EXPERIMENTS WITH POTATOES.

Kind of Seed Planted.	Ohio, 1886, Bush. per Acre.	Ohio, 1885, Bush. per Acre.	Ohio, 1884, Bush. per Acre.	New York, 1886, Bush. per Acre.	New York, 1885, Bush. per Acre.	New York, 1884, Bush. per Acre.
Large Potatoes	135	408	168	546		
Medium "				561		320
Small "	80	266	137	461		
½ Potato, large	114	338	127			
" medium				494		280
" small	51	201		463		220
" medium						
1 eye from large Potato	58	147	86	445		172
" med.	36	130				
" small	79					
2 eyes from large	88	318	128		266	196
" small		340	140		262	202
Stem end					268	
Seed end						
Centre piece						

The great majority of reports that we have seen relating to relative quantities of seed potatoes planted are defective, for in them the number of bushels sown to the acre is not mentioned. The whole work being merely relatively stated loses considerably in value.

Last year, in our experiments with potatoes, we weighed out the same definite quantity of large, medium and small potatoes, planted them in rows three feet apart, the distance in the rows being 14, 12 and 10 inches respectively. Taking the average of ten sets of experiments, with ten different varieties; the small seed potatoes came out slightly ahead of the medium, and the medium sized gave slightly better results than the large seed, that is, on the (equal) weights planted. It must be remembered, however, that the small seed occupied more than twice as much ground as the large. As it is generally not the seed planted, but the cultivation and interest, or rent of the land occupied by the crop, that incurs the greater expense, we must calculate the yield per acre, from which the quantity of seed sown is deducted, as a basis for calculation. Taking this view of it, the large seed gave a decidedly greater return, and was more profitable. We do not know of an experiment of this kind in which the average did not show an advantage in thick seeding.

Thicker seeding does not necessarily imply putting a larger amount of seed in hills far apart, but simply means planting more seed to the acre. Close planting with small pieces from large potatoes has given very good results as compared with the whole potato at larger intervals, but the experiments regarding this are limited, and are therefore not reliable. So far as we know, no reliable tests have been published to show whether it is better in planting a definite quantity of seed per acre, to use larger cut potatoes, or smaller whole seed.

At New York, an experiment was conducted to determine whether shade acted injuriously on a crop of potatoes. In this experiment potatoes were planted between rows of corn, far apart, and the result, compared with an equal number of rows grown without this shading, was in favor of those grown without the shade.

An observation made at the same station on the growth of potatoes after the tops commenced to die showed that the large potatoes increased very slightly, if any, while some potatoes, with a diameter of one quarter of an inch, measured three eighths of an inch through when the tops were completely dead.

We publish these results at this time of the year because experiments prove that in order to obtain the best results, to increase the standard of the variety, or to prevent it from deteriorating, it is necessary to select the seed when digging the potatoes from the hills that give the largest return, and if possible from those that contain the largest number of medium sized potatoes.

In looking over the large number of experiments conducted with potatoes, we find that several important points have been omitted, and it is our aim, in conducting our experiment station, to make the investigation more exhaustive, thereby making the results more practical.

A bill was recently introduced (says the R. N. Yorker), into the English Parliament which proposed to compel all owners of land to keep the same under cultivation. By the provisions of the bill, all land not occupied for building purposes must be made to produce some useful crop or be confiscated to the Government. This is a "George theory" on a large scale. The bill was hardly considered seriously, yet it shows that the advocates of "land reform" are determined to push their ideas into the highest places. It is the duty of American citizens to understand these "ideas" as far as possible, and thus be prepared to meet them.

When to Transplant Trees.

The question, when to plant, is an important one. Some will not plant anything in the fall, others prefer the fall to all other seasons; the majority of planters will, perhaps, claim that spring is the best season, for the largest amount of planting is done at that time, and failure is not attributed so much to the season. Fall planting, however, has strong advocates among experienced tree planters, and where a planter has given that season a fair trial, his favorable testimony is, as a rule, secured. However, there is a prejudice against fall planting, and a single failure at that season counts more against it than a dozen in the spring. Trees and shrubs planted early in autumn will push roots before winter, for it is not necessary that the top grow to force root growth; all can prove this by observation. Take up a tree or shrub in November that was planted in August or September, and you will be surprised to see the amount of new and growing roots. A fall planted tree becomes established by this means, and naturally is in a better condition to grow the coming spring.

I believe if careful and systematic experiments were carried on in tree planting, the fall would be found a better season to plant than in spring; the ground is warm and moist, in the best condition for the formation of roots, the air is moist and there is not the fierce, drying winds of early spring, or the liability of a June or July drouth soon after the tree is planted.—[Vick's Magazine.

Gathering and Planting Nuts.

This is the nut gathering season, and the boys should be taught how to plant nuts as well as how to eat them. Those seeds which mature early, such as elms, poplars and soft maples, may be planted as soon as convenient after they ripen; if, however, they are not planted immediately or shortly after ripening, they should be kept moist, and planted the same season as they mature. They should receive only a slight covering of ground, and should be kept moist and partially shaded till germination is well advanced.

All seeds intended for planting should be gathered as soon as ripe, or have fallen to the ground, if not picked from the tree. They lose their germinating power in about a year after maturity, but if they are not planted the same autumn in which they ripen, they may generally be preserved till the following spring. Different kinds of nuts require different treatment; but in general they may be stored over winter by keeping them in a cool place, and not letting them get too dry. Nuts and hard-shelled seeds are preserved by packing in moist sand and keeping in a cool place. Acorns and stone fruits, however, although most successfully planted in autumn, may be wintered by packing in moist sand and allowed to freeze, being planted out as early as possible in the spring. Many nuts may be treated in the same manner. Small seeds are preserved in sacks or pieces of paper. Seeds which are covered by a pulpy substance should be dried in a shady place before being stored away for the winter.

Even the most ardent champions of the English sparrow concede that he is an enemy to the small American song-birds, and unless something is done to check him he will ultimately exterminate them. The farmers also complain that the sparrow destroys the buds of fruit-trees and bushes.

Stock.

A Chatty Letter from the States.

[From our Chicago Correspondent.]

During the first week of August Chicago received 53,438 cattle, the most ever known before, but the very next week 56,621 head arrived, making two banner weeks come in succession.

The cattle market ruled steady for good stock, and prices ranged as high as $4.75@$4.90.

Between the heavy marketing of breeding cattle, yearlings and calves, and the comparative failure of the corn crop, it looks as if next year's beef crop would not be very heavy.

Cattlemen who are not broken by all of the adverse circumstances with which they have had to battle, are now decidedly more hopeful as to the future.

Never before in the history of the live stock trade have cattle been marketed in such vast numbers as during the present season. Overproduction and lack of confidence in the future caused the early runs, but since the first of July cattle have been driven to market by the awful drouth which literally burned up the pastures and licked up the water. Men hauled water long distances; some drove their cattle five and seven miles to water; green corn was cut for feed; some men went so far as to cut down certain kinds of trees that the cattle might eat the leaves, and all kinds of turns were made; but as the pitiless rays of the sun continued to beat upon the parched earth, day after day, week after week, there was no alternative for many stockmen but to market their unripe cattle, regardless of price. Thousands of fairly well-bred but thin steers sold for store stock as low as $1.25 @$1.75 per cwt., and old cows were at times unsalable at $1@$1.50 per cwt. Prices for such stock were never before so low, but such prices were better than to let the cattle starve, as they were sure to do at home. In the famous Elgin dairy district, cows for several weeks were unsalable at $5@$10 per head; ordinarily the same cows could not have been bought for $30@$35 per head.

Rains came about the middle of the month, but too late to do this year's crops very much good.

Naturally, sheep and goats are best adapted for living on weeds and rough feed, but nature has a wonderful way of adapting her creatures to their environment. A writer from central Illinois says that owing to the great drouth pigs are eating "button weeds," cows browse on burdock, and horses and colts eat almost anything green, even reaching up for leaves and tender twigs on the trees.

Noah Franklin, of Lexington, Ill., was here with stock. He reported drouth bad; no green grass. His experimental patch of alfalfa, cut July 8, and without rain since, stood 8 inches high, and was green and thrifty the first week in August. He is convinced that this alfalfa (lucerne) is one of the most reliable dry weather crops that can be grown, as the roots go down very deep and get all of the moisture that is to be had. The stockmen and small farmers in the far west are coming to use this large variety of clover very generally. It is the only sure green crop in the arid regions.

Illinois, Iowa, Missouri, Kansas and Nebraska farmers never had as fine a corn prospect as they did up to the first of July, but the great drouth has dried up the pastures until there is no more nutriment in them than in the middle of a highway. The hay crop yields from nothing to one ton per acre, and the corn crop in the States mentioned will be one of the poorest in many years. The crop fails in some sections where it has not been known to fail in a quarter of a century. Owing to the absolute failure of the grass crop, stockmen who were unwilling to sacrifice their herds have been compelled to cut and feed their green corn.

All of this goes to confirm the growing belief that the irrigating farmer in the arid regions, who can "make it rain" to order, is more independent than the prairie farmer, who at one season has too much and at another not enough rain.

Some of the western railways built extremely long stock cars, 33 and 34 feet long, so as to have the advantage over competing roads that held to the old 28 and 30-foot cars. Of course, shippers preferred to use the long cars at car rates, but the railroads have now decided to pool their issues by charging by weight instead of by car load.

Some very good far western sheep are coming from the west. Some 110@115-lb. Oregon sheep sold at $3.40@$3.60. One man from Montana sent in 1,053 head of 121@122-lb. sheep, which sold at $3.85 per cwt., and 454 head of the same brand, averaging 126 lbs., at $3.95. These were the best sheep ever sent in from Montana. They had never had a pound of grain or hay, and some of the four-year-old wethers weighed as heavy as 175 lbs.

Feeding Horses.

Nothing is more preserving or promotive to the health and usefulness of animals than the observance of the laws and rules of their digestive system; for upon its functions are all the other organs of the body dependent.

In the horse, the digestive organs—the stomach, intestines, &c.,—are so constructed that they require food at regular and frequent intervals. Dr. G. Fleming says on this subject:

Perhaps no animal suffers more from long fasts than the horse; and disease or disorder of the digestive organs is a common occurrence in stables where long fasts are succeeded by heavy feeding, as digestion is impaired by the food being devoured greedily, and in larger quantity than the stomach can properly accommodate. Horses should be fed at least three times a day; better if it could be four times. The hour at which the morning feed should be given will depend more or less upon the time for turning out for work; there should be ample leisure for consuming the meal before that occurs. At any rate, the first meal should not be later than six or seven in the morning; the next at mid-day; and, if only fed three times a day, the third in the evening. If possible, no longer than four hours should elapse between the meals; and while those given during the day should be of moderate quantity, that allowed at night ought to be largest, as the horse then has ample time to masticate and rest. During the day a little food, however small, is better than none, and for heavy horses, and even for light ones, when it can be carried, a nosebag containing a feed is a most advantageous addendum to the equipment. If the hay is given long or uncut, the bulk of it should be reserved for night consumption.

The practice of giving a large meal just before starting on a long journey is very injurious and fatiguing to the horse. A heavy meal draws largely upon the energies of the system to digest it, after which it again supplies energy. As such a meal is given to supply energy, and not to waste it, it is evident that it should be given, if given at all, some time before the active exertion is required.

Veterinary and Hygiene.

Choking.

This may arise from different causes in different animals. In the horse it rarely occurs, unless some such materials as whole eggs, badly formed balls, etc., have been given by force. In cattle it is, however, of frequent occurrence, especially when small round potatoes, or small apples, or turnips, carrots, mangels, and other such material, cut into such pieces that they can just enter the gullet, are fed. These they either attempt to swallow as they are, or, what is more generally the case, they slip away from them when they are throwing up the head, and pass into the throat against their will. Sometimes very ravenous feeders choke on dry chaff, or some other such material, by swallowing it before it has been mixed with saliva—a liquid secreted to aid the digestion and moisten the food. Occasionally diseased teeth, or other sores in the mouth, may be the cause of choking. Sometimes the swallowing of sharp pointed bodies may cause it.

Choking is divided into two forms. According to the position it assumes in the gullet it is divided into high and low choke, or cervical and thoracic choking. As the name indicates, it is called high or cervical choking when the obstructing body is situated in the upper portion of the gullet, or in that portion of it which passes along the underside of the neck. It is termed low or thoracic choking when the obstruction is in that portion of the gullet passing through the chest.

In the high choke the symptoms are dropping of saliva from the mouth, continuous efforts to swallow, violent coughing, staring eyes and great distress. In addition to these cattle are liable to have tympany (bloating or hoven.) Horses, if they attempt to drink, return the water through the nose. The obstructing body may generally be found by feeling along the groove on the lower left side of the neck. When solid it may frequently be extracted with the hand. Keep the patient's mouth open with a balling iron, and let an assistant hold the head in a line with the neck. With your left hand draw out the tongue and pass the right one through the mouth into the throat, hook your middle finger over the obstruction and draw it out. If you cannot reach it, or even before trying to do so, give the animal some oil, and then try to push the obstruction either down or up. If it once moves it is liable to pass down to the stomach without further trouble. Sometimes, when both of these methods fail, it is necessary to use a probang and press the obstruction into the stomach. This instrument is generally made out of a six foot long spiral spring, about $\frac{3}{8}$ of an inch in diameter and covered with leather. At one end, that one introduced into the throat, is a cup-shaped enlargement about $1\frac{1}{2}$ inches in diameter. To pass this instrument, make the same preparations that are necessary to the passing of the arm down the throat, and before introducing grease it well. Be careful not to enter it into the windpipe, the entrance of which lies just below that of the gullet. Never apply violent pressure, as this is apt to injure the gullet. If a probang cannot be obtained, a stiff, new rope with the one end opened out and the cords tied back so as to form a cup-shaped cavity, will answer the purpose. Whip-stalks and such like are very objectionable, as they are apt to do injury. When passing the probang in horses, it is necessary to throw them before attempting it. Eggs in the throats of horses are easiest removed by puncturing them with a needle and then crushing them. Obstructions have been frequently removed in cattle by simply gagging them. This is done by tying a smooth stick, about two inches thick, into the mouth. Tie a thin rope or a cord to each end of the stick and tie them together on top of the head, or tie to the base of the horns. Obstructions composed of finely divided food cannot be removed by gagging or by the probang. This latter instrument only packs it tighter. Such material will have to be removed by dividing it with the hand and allowing small portions of it to move off at a time.

In the low choke, the discharge of saliva, the cough and gulping may not be present. Efforts are made to raise the obstruction. Water is returned by the mouth in cattle and the nose in horses. Bloating (in cattle) is not so severe. Shivers may occur at intervals. The animals present an appearance as if diseased, but the inability to swallow solid food and the returning of drink, are characteristic symptoms.

This form of choking does not require so immediate attention as the other form, from which animals have been known to die in 15 minutes, and some even in 5 minutes. The treatment is practically the same as that of the high choke.

Milk Fever.

A correspondent of the Agricultural Gazette states that milk fever is generally brought about by a chill. To prevent this he deems it advisable not to remove all the milk from the udder for about six days after calving. He states that a friend of his found this plan to work to his entire satisfaction, and that nature confirmed it; for the calf not being able to consume all the milk of its dam for the first week, left a portion of it in her udder. The warmth of the milk left her would assist in keeping up the heat of the system, and assist in preventing the chill. The correspondent thinks that by using the above, together with the ordinary precaution of feeding sparingly, a laxatative diet, in conjunction with succulent foods, would go far to prevent milk fever.

The Effect of Dark Stables.

It is claimed that in a large proportion of cases where horses have trouble with their eyes, it is due to the want of properly lighted and ventilated stables. The majority of stables are so dark that when the horse is brought out he shows, by stumbling and in other ways, that he can not see perfectly, and this continues until his eyes become accustomed to the light. Any person can readily tell what the effect is by passing from a dark room into the bright sunlight. The change causes pain, and this affects the eye injuriously, in time frequently causing total blindness. Where horses shy on the road it is in many cases due to imperfect sight, often brought on by neglect in providing well lighted quarters for them. The eye is very sensitive and easily injured when dark, close stables are used. Light and proper ventilation can be provided with so little trouble and expense that it is surprising so many neglect these very important conditions when building, and as the result, suffer loss by so doing. Those who have stables already built, can, by a small outlay, make changes when they are needed to let in the light, and it will pay them well to do it.—[Maine Farmer.

Entomology.

Coming Dangers from Insect Plagues.

The Chinch Bug has been very active in the United States, and is marching nearer to our boundary line. Beware of it.

The Hessian fly has been very destructive in England. It has been found that the flax-seed stage of the insect is frequently present in samples of small grain, and can be removed by running it through a fanning mill. Every farmer should carefully examine all seeds before sowing, not only looking for the weed seeds which the sacks may contain, but also for any form of insect that may harbor in them. Running seeds an extra time through a good fanning mill not only frees them from a lot of weed seeds and likely insect pests, if they contain such, but also, by throwing over the light and sifting out the small grain, improves the quality of the samples, and a continuation of such a practice will improve the variety.

The Warble or Ox Bot Fly.

This fly *(Hypoderma bovis)* resembles the bumble-bee in color and markings. It is two-winged, and a little over half an inch in length. In its mature state it is a cause of annoyance to stock in summer, and in its larval form it not only causes a depreciation of the hides in the market, but also by the irritation and pain they cause by their presence, a less vigorous and thrifty growth of the stock. From November until May the presence of these larvæ may be detected by hard lumps along the back of the animal.

REMEDIES.—Four oz. of flowers of sulphur, one gill spirits of tar, and one quart train (whale) oil, thoroughly mixed together and applied once a week along the back of stock, have proved to be an excellent preventative, the fly not laying her eggs on animals thus treated. The train oil alone has also given good results. If the eggs have been laid and the warbles hatched, they may be destroyed by applying either kerosene, mercurial ointment, or tar, or by puncturing the larva with a hot wire, or by squeezing it out by the hand and then destroying it.

The yearly loss sustained by this insect in Great Britain alone has been estimated at $10,000,000.

Miss Ormerod, the distinguished entomologist of the Royal Agricultural Society, thinking that some of the deaths supposed to have resulted from "black-leg" or quarter evil were in reality due to blood poisoning caused by the warble maggot, communicated with Prof. Wortley Axe, and this authority has promised to investigate the matter.

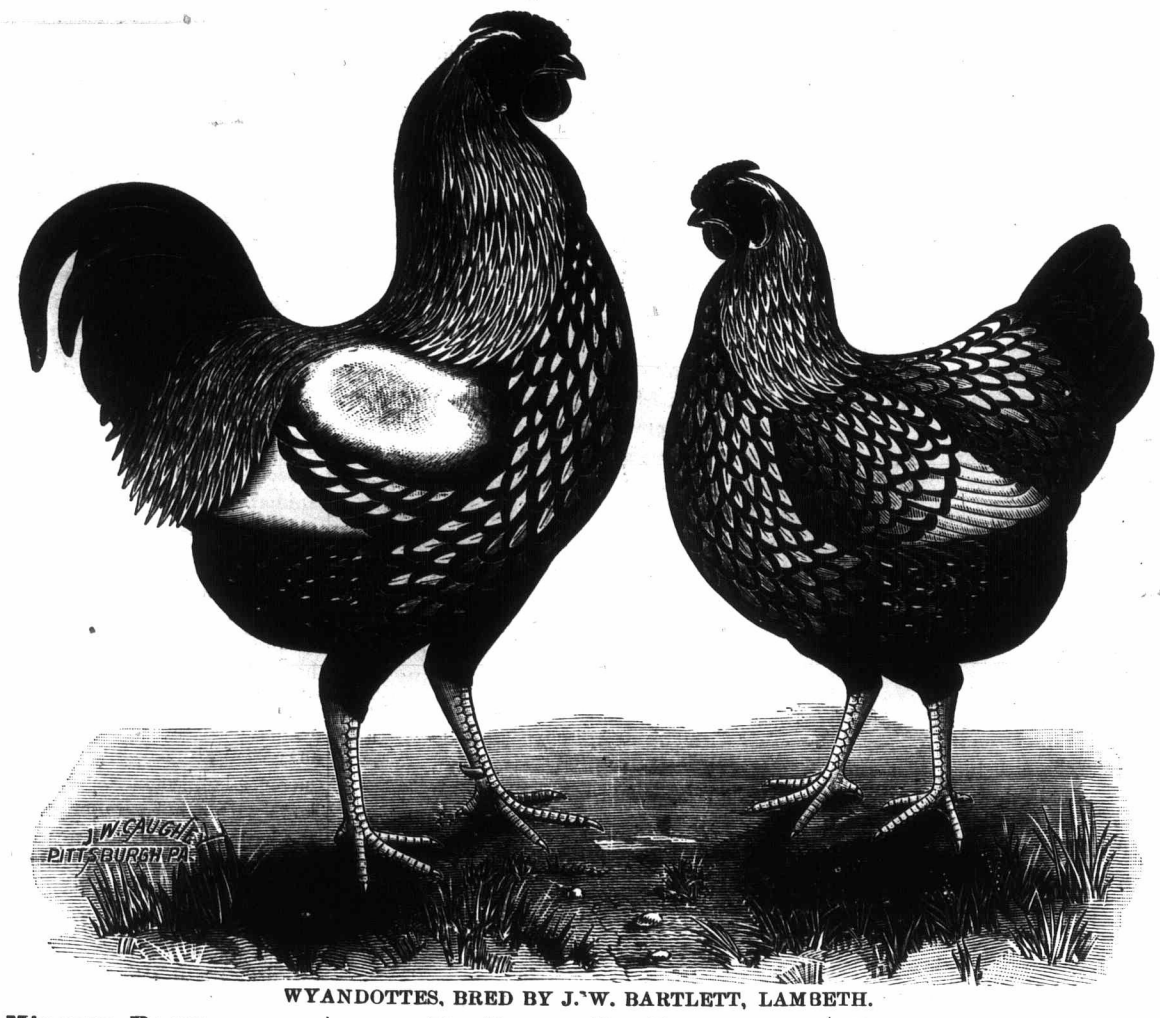
A TORCH FOR INSECT NESTS.—Prof. Riley's Bulletin No. 10 gives the following directions for making a torch to be used in burning the nests of such insects as the orchard caterpillar and the fall web-worm, copied from Maj. Key in the Evening Star: Take a piece of soft brick known as salmon brick, and trim it to an egg shape; then take two flexible wires, cross them over the brick, wrap them around it, and twist the ends together. Then attach it by the wires to a long stick, and soak the brick in coal oil; light it with a match, and you are armed for the work. Asbestos may be used to advantage; and a little thorough work early enough in the season, will obviate the necessity of more expensive remedies at a later time. The soaking in the oil may be repeated as often as required to maintain the flame.

Poultry.

Edited by J. W Bartlett.

Wyandottes.

The accompanying has not been selected on account of its beauty as a picture, but because of its likeness of the birds it is intended to represent, and is, in our opinion, the nearest approach to the ideal Wyandotte that has yet appeared in a Canadian publication. We have on other occasions referred to the economic merits of the Wyandottes, and a repetition is needless, and while we wish to give every breed its just deserts and nothing more, we feel that we would be wanting in our duty to our readers if we did not call attention to their unusual merits, and we have never yet known anyone to give them a trial but what pronounced them the best of farm breeds. Before keeping the "Dotts," we argued there was no such bird as a general purpose fowl, that is, one that would excel both as a layer and a table fowl, but this ground is now untenable, as for either purpose the Dotts head the list, and the thanks of all poultry men are due to their originators. They have been bred for many years in some parts of America, but five years ago the first importations were made into Western Ontario, and their great merits quickly made them the most popular fowl in the country.



WYANDOTTES, BRED BY J. W. BARTLETT, LAMBETH.

The Minorca Boom.

Minorcas, Minorcas, Minorcas! White Minorcas, Black Minorcas! From our earliest recollection, we have never known such a boom as the Minorcas are enjoying this season; and what makes it seem more strange, they have not been admitted to the American standard of excellence; although there is not much doubt that they will be this winter at the annual meeting of the American Poultry Association. At the risk of being pronounced cynical, we must pronounce most emphatically against the Minorca as a farmers' fowl. The more so from the fact that many of its friends claim it "indispensable" to the farmer. It is claimed that it is excellent as a table fowl, and having never seen one dressed, nor tasted one, we will not pose as an authority; but the class to which it belongs, viz., Spanish, is noted for its inferiority as a table fowl. In fact, we can see nothing to extol in the breed but the large white eggs, and of course, as we might expect from any of the Spanish class, a goodly number of them; but egg packers avoid Spanish eggs generally on account of their very thin shells, although on the city markets many people buying for home consumption pay more for them on account of their greater size, while on the other hand, others avoid white eggs entirely if brown ones can be obtained. But their greatest difficulty is their large combs, which have to be cared for like hothouse plants, or be frozen in winter. Who ever saw a flock of Leghorns (whose combs they very much resemble,) running about the barn-yard in winter, without some of them having frozen combs? No hen will lay while suffering from this cause. In view of these facts, we predict that as a farm fowl the Minorca will prove a decided failure.

Poultry on the Farm.

In many parts of the country the egg trade is attaining a great magnitude, and it would almost seem that the more eggs produced the better the price realized. This has been the case in many instances. An intelligent farmer in Huron county recently asserted in our presence that the egg trade of that county (Huron) was worth more than the wheat trade, and on enquiring we found his opinion corroborated by many others who were in a position to form a reasonably definite conclusion.

We learned that one egg packing establishment alone pays on an average $6,000 per week at the present time for eggs, and as there are three in full blast, the aggregate must be large, and every farmer with whom we conversed on the subject claimed that there was more profit to be derived from fowls than the same amount of labor and capital in any other branch of farming.

In view of these statements made by reliable men, does it not become the farmer to stop a moment and consider the matter, more especially as wheat, which has therefore been considered the main stay of the farmer, continues depressed in price, and the stock market is in much the same condition, and every prospect that both will continue so for some time to come. Now we do not for a moment assume that poultry will take the place of either entirely, but can it not to a moderate extent at least supply the shortage that must of necessity exist from these circumstances.

Experience demonstrates to us that eggs can be produced at a profit for twelve cents per dozen, and as that is almost the minimum price, while it is quite a common occurrence for them to reach twenty-five and even more in early spring and late autumn and winter, it is evident the profit is greater than in any other farm stock or crops. Of course many farmers will anathematize the whole gallinaceous kingdom because they have interfered with his unprotected garden, or for want of a better perch has been caught roosting on the back of his buggy seat, but this is no argument against them. Just as well condemn dairying because the cows break into the cornfield. Fowls, if provided with proper houses, do not often invade the buggy seat.

Notes and Comments.

Mr. Thos. Costen, Montreal, writes: Chicks doing remarkably well. My latest venture is the Wyandottes, and they have exceeded my expectations altogether. As layers I never had any breed to equal them, beating my Plymouth Rocks completely as winter producers.

Mr. A. C. Hawkins (Mass.), tells us he has over four thousand chickens out and two hundred and fifty hens yet to come off.—[Poultry Review.

The barnyard fowls have produced two thirds as much wealth for exportation as the manufactures have—nearly two million dollars worth of eggs alone. Who says the poultry industry is a small one?—[G. B. Smith, M. P. P. for East York.

The Apiary.

Fall Notes in Bee Culture.

If there is no honey coming in, it is well to feed a small quantity of sugar syrup every night till the end of September, as this will insure late breeding and tend to successful wintering.

Be careful not to expose honey or other liquid sweets where the bees can reach them, or you will start robbing.

It would be well to plant basswood trees where you want shade trees, as they yield very superior honey, and they also grow fast.

Prepare the chaff cushions to place above the bees when the cold weather arrives, and if you are going to winter your bees out of doors, get your clamps all ready so that as soon as it is time you can place the bees therein. It is better to do this before real cold weather comes, so that the bees can have a fly once or twice before clustering for the winter after being put into the clamp.

During warm weather be careful to protect the comb honey and empty combs from the bee-moth, which is perhaps the worst enemy of the bee.

Fall Care of Bees.

The care of bees in the fall goes very far towards successful wintering. One would suppose from the numerous articles that are written on the subject of fall management and wintering that about all had been said, and that an observant bee-keeper would understand so correctly how to winter his bees that he would not have any loss, but, on the contrary, many lose a number of colonies nearly every year. Why this loss should occur is very hard to understand, as many who lose heavily are very particular in manipulation. The critical season for bees is the late winter and early spring, so to prepare them for this season is the aim of all intelligent bee-keepers. That they may be in good condition to successfully tide over this season of changeable weather, it is well, as early as the beginning of September, to arrange the frames of the brood chamber in the following manner: Take two or more frames of honey from each end of the hives (providing there is no brood in them), and spread the frames apart so that there is twice as much space between them as usual. They will then, during the fall honey flow, build out the combs so thick at the top as to make an almost solid ceiling of well ripened honey. Should the fall crop of honey fail, it would be well to feed sufficient sugar syrup made after this formula: Take four pounds of granulated sugar and add it to one quart of boiling water, and boil till the sugar is thoroughly dissolved. This syrup can then be fed to them in any of the bee-feeders that are now in the market, or a simple way is to fill a bread pan with the syrup and lay a cloth in the syrup, but extending over the sides and ends of the pan. They can take the syrup from this feeder as well as they could from one costing a great deal more.

At this season the hives are, for some reason or another, very often found to be queenless, caused, it is expected, by overwork on the part of the queen. Should any be found in that condition, it would be well to introduce improved stock without delay. This can be done safely in the following manner: Take a piece of wire cloth about 4 inches square and roll it around a piece of broom-stick so as to make a tube; one edge of the cloth should be unraveled two or three wires, and the wires used to fasten the edge of the cloth and thus complete the tube. Close one end by pinching it and your cage is then ready. When your queen arrives by mail, open the cage before a closed window and hold the tube cage so that the queen only will run out of the shipping cage into it. As soon as she is in, close it with a piece of comb honey and take it to the hive in which you are going to introduce her. Move some of the frames and place the cage between them with one end pressed against some sealed honey, so that, should the bees not feed her, she would have some honey close at hand. In two or three days open one end of the cage, if the bees are walking quietly around it; but if they are very anxious to get inside the cage, and are crowding and hugging it, close the hive for another day, or until they are quiet. As soon as you open the cage close the hive and leave it for a week. When you are satisfied that your hive contains a good queen, and from twenty-five to thirty pounds of good, well-capped honey on not more than five or six frames, you can let them severely alone till the month of October, when they can be packed and put away for winter.

How a Cell is Filled with Honey.

Dr. D. C. Spencer, Augusta, Wis., gives the following information which no doubt will be interesting: In my observatory hive, one cell was built against the glass, and that afforded an excellent opportunity of seeing how bees deposit honey in the cell. First, a bee deposited a thin coating of honey upon the base of the cell, making a sort of varnish, as it were, to the base of the cell. The next bee that came with honey, raised up the lower edge of this film of honey and forced its honey beneath this film; the next bee did the same, and this film acted as a kind of diaphragm, keeping the honey in the cell. When the cell is full enough to be sealed, the bees commence contracting the opening with wax until there is only a small hole left in the centre, when they appear to take one little flake of wax and pat it down over the opening.

HONEY PRODUCTION.—C. F. Muth, an experienced bee-keeper, says the production of honey is the most remunerative part of the business.

ANTS IN THE HIVES.—G. M. Doolittle says, in reference to the subject, that they get there for warmth, and do no injury except to annoy the operator when the hives are opened.

OLD QUEENS.—The question was asked at a convention of bee-keepers, "How do bees know when to supersede a queen?" Rev. L. L. Langstroth in answering said: Bees do not, I think, supersede their queens simply because the queen does not lay enough eggs to suit them. I once put an old queen in several different colonies, and they all tried to supersede her. I then placed her in a nucleus, and that also tried to supersede her. Italians are much more apt to supersede their queens than black bees. We can tell the age of queens by their color. A young queen is bright colored and fresh, looking more so the first year than ever afterwards.

Speaking of bee pasturage, Prof. A. J. Cook says: I wish to speak in favor of the Rocky Mountain bee-plant. It blooms after white clover and basswood, is very hardy and yields honey abundantly.

Commercial.

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

The month of August, while it has not been so hot as July, excepting the first week, has been a fine month for farmers, and perhaps the only drawback has been the want of sufficient rainfall to fill the small streams, cisterns and wells, and thereby save a great many from the laborious work of drawing water.

According to the bulletin of the Ontario Bureau of Industries, the harvest is short in all the cereals and in potatoes, and whatever reliance may be placed on precise figures, the general statement, however unwelcome, must be accepted as correct. Fall wheat, we are told, will not exceed two-thirds of an average crop. Spring wheat, the estimated yield is 4,500,000 less than the average. The estimated yield of barley is 17,436,322 bushels, being 2,136,000 less than the average yield. Of oats the estimated yield is 8,000,000 bushels less than last year, and 5,000,000 below the average. In peas nearly as much as the average yield of the last five years is looked for. Corn is a short crop, and beans are thought to be also short. It is too early to forecast the root crops, but potatoes are certainly deficient. Clover seed borders upon a serious shortage and failure. Two causes account for the declension in the produce of the harvest, drouth and excessive heat, but the latter has been the most serious factor, as much of the shortage in the grain crops has been brought about by the excessive heat causing premature ripening, and the result of this is small and shrunken grains. The drought was most severe in the West and Northwest, the rainfall being four inches less than the average of five years; in the North and Northwest 1½ less, but there much of it came in July. May opened the season with an augmented temperature, compared with the average, of eight to ten degrees. June brought a surplus heat of one to two degrees, and July blazed out at the rate of six degrees above the average; the highest temperature exceeding by 7½ degrees the highest temperature of five years. In this month, the thermometer ranged from ninety degrees in Simcoe to one hundred degrees in Hamilton. These temperatures would be favorable to the growth of grapes; but heat did not come by shocks and starts, which Count Gasparin, an authority on the subject, delares most favorable to them; it blazed with a continuous blaze. The coincidence of excessive heat and deficient rainfall had a stunting and wilting effect, with the result already stated.

WHEAT.

The movement of wheat from farmers' hands, both in the States and Canada, has been light. Rarely has a crop of winter wheat been harvested under conditions so favorable for marketing early and quickly after being cut, and yet the movement has been light, which may be taken as an indication that farmers are really being overtaken with the belief that the chances are in their favor by holding on, and we cannot blame them, for the farmer deserves better returns than he can now obtain and better than he has had the past two or three seasons. It will not be reasonable to count on high prices, but the exportable surplus of wheat will be smaller the coming season than the past year—while the very active export movement which has been for some time and is now going on, helps to strengthen the position for an ultimate improvement in values.

The later estimates of the English crops are not equal to the previous calculations, and about 71,000,000 bushels seems to represent present indications for the United Kingdom, which would be nearly 10 percent below what is accepted as an average crop, although about 8,000,000 bushels in excess of the small production last year. The present outlook for wheat production in eighteen European countries for the current year implies about the same production as last year, and slightly less than an average. The United States, India and other countries may be reckoned as about 5 percent below last year, and 4 percent below an average annual production, although somewhat in excess of 1885. The Lon-

don (Eng.) Morning Post writes as follows on July 25th, 1887 :

Wheat is the great crop of the year, and its power of resisting drouth shows on the very best cultivated lands that the full strength of the crop has been put forth, and it is to be feared that the wet seasons of the past have done much to reduce the proportion of land in a really fine condition. On the better land, however, the crop will be excellent, and it is believed that in some cases it will be quite 20 percent above an average. But on the proper soil the crop will be bad, a good promise having been now falsified by unnatural ripening and defective kernelling. Still, however, the crop may be put down, on the whole, as 10 percent over the average of the last 10 years. This is so far as yield is concerned. The area is, of course, much below the average for this period, while the market prices for the grain are sure to be low, these being ruled more by the larger wheat fields of India and America than by the home harvest. Thus the wheat crop is not altogether satisfactory, even though it promises to be above the average in yield and the best crop of the year. * * * Oats, beans and peas are all decidedly poor, and range from 10 percent to 30 percent below an average. But the greatest disaster of the year is the almost entire failure of the feeding crops. Turnips and swedes have been entirely destroyed by drouth and fly in many cases, while in others there is not more than half a crop—quite 15 to 20 percent below an average—and the straw on all the cereals is short. With roots a failure, and hay and straw short, next winter will be looked forward to with something like dismay by all stock owners, who will be compelled to put their hands very deeply into their pockets for feeding stuffs.

HOGS.

Below we give Chicago prices Sept. 1st, 1887: There was a stronger feeling in the hog market and prices advanced to 5c@10c. The closing quotations were :—Light grades, $5@$5.40; mixed packing, $4.85@$5.10; heavy shipping, $5.10@$5.45. The estimated receipts were 10,500, against yesterday's official 13,368, with shipments of 5,692. There were left over from yesterday about 1,500. The cattle market was fairly active. Receipts, 10,000 head.

Armour, the great pork king of Chicago, in a circular dated Aug. 20th, 1887, says :—The corn crop is so seriously damaged by drought that the recent rains have not proven of much benefit. The destruction of the corn crop will be an important factor in the coming packing season, causing short supply of hogs, with a corresponding advance in prices. The remnant of the present stock of provisions on hand will all be wanted.

It looks to us not so much a question of price as whether goods can be had as fast as wanted, before we enter on the next packing season. The supply of cured meats, including hams, shoulders, etc., will be practically exhausted by first of September, not only here, but all over the West, while we have before us the two best consuming months of the year.

The cotton, sugar and other harvests will demand such a large supply of provisions that the effect will tell upon remaining stocks.

The best indication of prosperity in this country is, that the labor is all employed; there are no strikes on hand. The purchasing power of this class of people is very large, and they were never larger consumers than at the present time.

The receipts of hogs have been very light in August, but they will not show any increase in September, and will also be very light in October. With all the above facts, the outlook is promising for any one who has some stock on hand for this trade.

APPLES.

It was feared at one time that the terrible heat with the drought was going to injure the apple crop. And while it did to some extent do so to the summer and fall apples, yet the winter sorts are said to be doing well and promise a fine crop. The August report of the United States department of agriculture reports the first crop as very poor. There will be few apples outside of the New England States and New York State. There will be a partial crop in Michigan, but in the Ohio River States and the west the crop will be nearly a failure.

A late English circular says : "Present indications point to a medium crop of apples this year in Great Britian and on the continent but as the varieties in cultivation are much in arrear as to the quality and appearance, there is every prospect of a good demand for Canadian apples.

A late English circular just to hand says: From inquiries made in the principal apple growing districts in England, we gather that the crop this year will be undoubtedly very short, and in some places a total failure. Fair prices may therefore be expected, provided shippers take great care that the fruit is properly selected and well packed. Only the choicest kinds of even size and free from spots should be sent, and they should be pressed tightly into the barrels so as to prevent shaking and to secure their sound condition on arrival. This is very important.

LIVE STOCK.

The Montreal Gazette quotes the English cattle markets as follows: Our cables to-day were steady and indicated no change in the markets. There have been light receipts from Canada and the United States, while the supplies from other quarters have been fair. At Liverpool to-day there was a steady market and a fair demand, as offerings were light, especially of Canadians. The Thanemore, which had over 700 head, missed the market, and this undoubtedly caused the shortage in the supply and helped to keep values steady. Prime Canadian steers were at 11c, good to choice at 10½c, poor to medium at 9½c, and inferior and bulls at 7c@8½c. These quotations are calculated at 4.80 in the £. The meat markets are cabled about steady. Refrigerator beef in Liverpool is cabled at 5¾d for hindquarters and 3½d for forequarters per lb. In London, hindquarters are quoted at 4s and forequarters at 1s 10d per 8lbs. by the carcass. Following were the quotations in Liverpool for three years :—

	1885. per lb., cents.	1886. per lb., cents.	1887. per lb., cents.
Aug. 29	14	11½	11
Aug. 22	13½	12½	11
Aug. 15	13	12	11
Aug. 8	13½	12	11½
Aug. 1	13	12¼	11½
July 25	12½	12	11½
July 18	14	12½	11
July 11	14	12	10½
July 4	14½	13	10½

BUTTER.

There was no change in butter, but the market continued firm in tone. Little new business of an important character was accomplished, but there was enough inquiry to warrant sellers in maintaining a firm attitude. The Mail advices in to-day were strong. First Corks were at 118s, seconds 114s, thirds 107s, fourths 103s, and superfine mild cured firkins at 123s. In London the rapid advance has made buyers more cautious, but prices are firm. Danish was quoted at 120s @126s, with low-priced goods scarce and American dairies inquired for, and creamery selling at 112s@116s. Mr. T. H. Hodgson, of Liverpool, writes as follows on August 20th :—"A good demand is experienced for all grades at last week's prices. I quote finest Canadian and United States extra, 105s@112s ; good to fine, 90s@95s ; middling to good, 80s@85s per cwt. Irish firsts, 118s ; seconds, 114s ; thirds, 107s ; fourths, 102s. Continental sorts—Finest Danish and Kiel, 110s @126s ; Normandy and other sorts, 110s@118s per cwt."

	c.	c.
Creamery	21	@24
Townships	17½	@21½
Morrisburg	17	@20½
Brockville	16½	@20
Western	15	@18½

CHEESE.

From the sales reported and from advices from other points we can only infer that even at the present high prices, there is considerable faith in cheese—even at the present extreme prices—yet there are many in the trade who cannot see where or when the buyers are going to make any money, There may be a heavy shortage in the English make this year which cannot now be recovered. The same applies to part of Ontario and some of the Western States, but it has yet to be proved whether that shrinkage will in any way justify the payments of 12¼ and 13c for Aug., Sept. and Oct. cheese. It must also be borne in mind that the consumption is falling off very fast at these prices and we are very dobtful if the shrinkage in the consumption will not be as great if not greater than the shortage in the make. Besides at the prices now paid and offered, the patrons of every factory are going to send every pound of milk that is possible to spare to the factory and they are going to feed their cows with that end in view, also, we must say that now is the time to sell and take no chances on any further advance.

LIVE STOCK MARKETS.

Buffalo, Aug. 27, 1887.

CATTLE.—Receipts, 13,103 against 16,506 the previous week. The market opened up on Monday with 135 car loads on sale. The light supply and a good demand sent prices up, and sales were made at an advance of 10@20 cents over the rates of the previous Monday. The best steers on sale brought $4.50 @4 75; good 1,300 to 1,400 lb. steers, $4 20@4 50; 1,100 to 1,200 lbs. $3 90@4 15. There were no fresh receipts on Tuesday and only two loads on Wednesday. The market ruled firm at an advance of 10@15 cents, The receipts on Thursday and Friday were light, and the demand good at full former prices.

On Saturday there was a fair supply of cattle and a good demand, the market closing firm at the following

QUOTATIONS:

Extra Beeves—Graded steers weighing 1,300 to 1,450 lbs	$4 50	@4 75
Choice Beeves—Fine, fat, well-formed steers, weighing 1,300 to 1,400 lbs	4 25	@4 50
Good Beeves—Well-fattened steers weighing 1,200 to 1,350 lbs.	4 00	@4 35
Medium Grades—Steers in fine flesh, weighing 1,100 to 1,200 lbs	4 00	@4 20
Light Butchers'—Steers averaging 850 to 1,100 lbs, of fair to good quality	3 70	@4 10
Butchers' Stock—Inferior to common steers and heifers, for city slaughter, weighing 900 to 1,000 lbs.	3 00	@3 65
Michigan stock cattle, common to choice	2 50	@3 00
Michigan feeders, fair to choice	3 00	@3 25
Fat bulls, fair to extra	2 25	@2 75

SHEEP.—Receipts 47,600, against 50,400 the previous week. The offerings of sheep on Monday numbered 10,600. For good to choice sheep the market was active at full former prices, while common grades were dull and a shade lower. Good to choice lots sold at $4 15@4 50; common $3 25@3 75, and common to good lambs at $4 75@6 25. Up to Friday the receipts were light and the market firm. On Saturday there were 24 loads on sale. The markets for good sheep were active and a shade higher. Common sheep sold at $3 45@3 75; good to choice, $4 25 @4 60, and common to choice lambs at $4 75@6 25.

HOGS.—Receipts 47,513 against 43,876 the previous week. The supply of hogs on Monday was made up of 59 car loads. Good to choice Michigan hogs were 5@10 cents higher, while other grades were about that much lower. Good to choice corn fed Yorkers sold at $5 35@5 40; good to choice medium weights, $5 45@5 55, the market closing with all sold. Prices advanced 5 cents on Tuesday, 10 cents on Wednesday and ruled strong on Thursday and Friday. On Saturday the market ruled fairly active for corn-fed hogs, and weak for "grassers." Good to choice corn-fed Yorkers sold at $5 50@5 60; good to choice medium weights, $5 50@5 60. Michigan "grassers" $4 90@5 30.

THE HORSE MARKET.

The Toronto *Mail* of Sept. 1, in its weekly report of sales in Toronto, has the following: There is a much better demand for good general purpose horses this week. Only a few are offering. There are buyers for good, sound animals, weighing 1,050 to 1,300 lbs, at $110 to $160. There is some inquiry for saddle horses, but not many are offering. There is no demand from the American side. At Grand's auction sale to-day twenty horses were offered. The bidding was spirited and everything was sold. The animals weighed 1,000 to 1,250 each, and sold at $80 to$140. Mr. Grand sold 21 horses, weighing 1,100 to 1,200 lbs, for $125 each, for railroad work at River Du Loup, to Malcolm Ross.

Since our last the Montreal horse merket has ruled quiet, which is owing to the light supply of horses. Consequently, American and local buyers could not fill their wants, as only one of the leading sale stables had an assortment of the proper class of animals for American buyers, and he sold out the majority of them in the beginning of the week. The demand is improving steadily, and from this out business will increase. Late advices from Boston are that there is a good demand for good horses and a brisk business is being done, but the supply is getting light, and choice animals are somewhat scarce. The enquiry is principally for trotters, good drivers and cab horses.

FARM PRODUCE.

TORONTO - PRICES AT FARMERS' WAGONS.

Toronto, Sept. 1, 1887.

Wheat, fall, per bushel	$0 80	0 82
Wheat, red winter, per bushel	0 80	0 82
Wheat, spring, do.	0 80	0 82
Wheat, goose, do.	0 72	0 73
Barley, do.	0 55	0 60
Oats, do.	0 35	0 39
Peas, do.	0 57	0 58
Dressed hogs, per 100 lbs.	7 25	7 50
Chickens, per pair	0 45	0 60
Butter, pound rolls	0 22	0 24
Eggs, fresh, per dozen	0 15	0 16
Potatoes, per bbl	0 90	1 00
Apples, per barrel	1 25	2 00
Onions, per doz	0 15	0 20
Do. per bag	0 00	2 00
Carrots, per doz	0 15	0 20
Turnips, white	0 00	0 40
Rhubarb	0 00	0 30
Cabbage	0 60	0 75
Celery	0 60	0 75
Beets, per doz	0 20	0 25
Radish, per doz	0 20	0 25
Lettuce	0 00	0 20
Cauliflowers	0 00	1 00
Peas, per bag	0 00	1 25
Tomatoes, per bush	0 80	1 00
Hay, per ton	11 00	14 00
Straw, "	7 00	12 00

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.

Cattle Prizes at the Industrial.—In looking over the prize list of the Dominion and Industrial Exhibition to be held at Toronto, on Sept. 1887, I find that the Durham prizes are far ahead of the other thoroughbred cattle. Will you please let me know why it is so. It looks to me as if the men who prepared the list were Durham breeders, for they have put the Durham prizes in some cases twice as high as the other thoroughbreds, and thoroughbreds in some cases lower than the grades. Is it fair to other breeders?—N. S., Kings Co., N. S.

[The Shorthorn breeders being more numerous and more strongly organized than the champions of other breeds, have been more successful in pressing their demands. The general rule has been that small breeders and those who do not press their claims have poor prospects in the "battle of the breeds." If there are any other modifying circumstances, perhaps the Secretary can explain.]

Interesting Notes from Manitoba.—I intended writing to you every month, but having been rather busy, the proper time for writing has slipped away without my having done so. Our experiences have been rather varied this season. In the early spring we were very forcibly shown the great advantage of having belts of timber as wind breaks on our farms. During spring we had some very heavy winds, and the soil being light and dry, it was drifted off in dense clouds, leaving our fields something like gravel ridges. But the damage done was not nearly so great as we expected. We had some good rains directly after, and the crops recovered their vitality in a most surprising manner, and it seems likely that this year will be an extra good one. Crops as a rule are looking very fine. Barley was cut and threshed during the first days of the month, and the binders were busy at work with the oats and wheat by the fifth. This is very early, so we escape all danger from early frost, and shall gather in the most abundant harvest that has ever been garnered in this country. Our hay crop is very light in this locality, very much lighter than last year and late in the bargain. Very many will have to make their hay after the harvest work is over. Now is the season for threshing machines to be at work again. There is in connection with them a subject that should engage the attention of our legislators. I think there should be some really practical and competent person appointed at a fair salary to inspect every machine, and no machine to be allowed to run without a certificate from such an inspector, and the same rule should apply to the person in charge of the engine. At present these things are managed in a very reckless sort of way. Some old second-hand machine is bought and given in charge of some person entirely ignorant of the very first principles of mechanics. Of course so long as everything runs smoothly, all is well, but presently there comes more pressure on a defective plate in the boiler than it can stand, an explosion follows, and probably the mutilated remains of half a score of poor fellows are scattered over the prairie. Then the horse being stolen, our law makers will do something in the matter.—[R. C. B., Stodderville, Aug. 20th, 1887.

Farming in Scotland.—I have been much pleased with the ADVOCATE the last two years. I have received it and it has reached this place with great regularity, from the 20th to the 23rd of each month, and my neighbors are forever crying about it. I have been trying a few of them to order one for themselves, but the cry is, they are not able to afford one as the times are so bad. I am afraid you people in America are determined to ruin us, for we are at our wits end to know what way to get on, for the prices are so low. The steers which sold for about £10 to £20 four years ago, are now selling at about £12 to £13; and it is all in consequence of your trade which brings thousands of cattle into our markets weekly. We are trying almost every plan to get down our rents, but the "Lairds" will not yield, but tell us we must pay or flit. Now we are all about ready for that process, as our money is about all gone. I occupy a farm here of 100 acres and pay £1 an acre, which we managed to pay till within the last two years, in which grain and cattle have come so low in price that I have made up my mind to give up unless we get a reduction of from 35 to 40 percent, and unless this be granted all over before another year this country will have to rise and resist payments as Ireland has done. But I have often thought, if I could get clear out with something over and come out to America, there might be some chance of a living, as I have four boys that will soon be ready for a little work.—[S. M., Aberdeen, Scotland.

Grass as Green Manuring for Wheat—How to use Ashes—Muck and Lime—1. Can land be made more productive or rich by sowing wheat and grass alternately, plowing under the grass as a green manuring and removing the wheat, without supplying any other fertilizer? 2. What is the best way to use ashes? Is it a good plan to mix them with the barn-yard manure; or is it better to sow them directly on the land, and at what time of the year? 3. What is the best way to use muck? Is it a good plan, when intending to put both muck and lime on the land, to cover the unslaked lime with the damp muck to slake it? What is the best form of lime to use, and what is the best way to apply it? —W. H. S., Tintern, Ont.

[1. Grass and wheat belong to the same species and therefore draw upon the same plant food in the soil, and have the same difficulty in obtaining or assimilating other foods, therefore they are ill-adapted to keep up the productiveness of the soil. Clover is a much better crop to use as a green manuring for your rotation. It is a deep-rooted plant and largely draws its food from the subsoil and the air, while the wheat is a so-called surface feeder. The clover has a marked ability to absorb and retain nitrogen compounds, which it leaves, when decomposing, in a soluble form in the surface soil, where the wheat, which has difficulty in obtaining this constituent for itself, can easily obtain it. Using clover as a green manuring, you may increase the productiveness of the farm, for a time, but the fertility or richness will be reduced unless an equivalent to the amount of ash constituents removed is returned to the soil. (For details in this matter read our series of articles, commencing in this issue, on "Stock Raising and Grain Growing in Relation to Soil-fertility and Exhaustion.") 2. Ashes should not be mixed with barnyard manure, for the lime that they contain will cause the manure to give off its nitrogen in the form of ammonia, and unless abundance of muck, or other absorbents, is present, it will escape into the air. If the soil is heavy, the ashes may be sown in the fall or early spring, and if light in early spring. Ashes, like other potash fertilizers, should not be sown at or immediately before, the time of sowing the crop, for then they have not sufficient time to become evenly enough distributed through the soil. 3. Muck is best used as bedding for stock, next as a mulch, and next as a direct fertilizer. For full particulars read the article of "Muck: Its Action and Uses," in this issue, page 264. Your plan for slaking the lime will answer very well, but any other soil will do as well. See that no cracks or openings appear in the muck or soil, and cover them if they appear. For further information read "Lime as a Fertilizer," in our March issue of this year, page 73.]

Bone Mills—How to Apply Ground Bone.—I have put up a large, geared windmill and machinery for grinding bones, to use on farm and for sale. Which is the proper and most profitable way of applying on different kinds of soil and different kinds of crop, fall wheat especially? I would like also if you could give the directions for making superphosphates?—J. J., Warkworth, Ont.

[It would take almost a whole volume to answer your question in detail, so that all we can do here is to give you some general directions. General rules are very useful, although a farmer cannot be absolutely certain without conducting experiments for himself. Bones are valuable almost entirely on account of their large percentage of phosphoric acid, which is united with lime, forming phosphate of lime, lime also being a valuable fertilizer for some soils. Bones contain about 50 percent of phosphate of lime, or about 20 to 25 percent of phosphoric acid. Fresh bones also contain two or three percent of nitrogen, which is also a very valuable fertilizer. The soils most deficient in phosphates are sandy and vegetable soils; and all soils deficient in vegetable matter are benefited by nitrogenous fertilizers. Phosphates are not apt to be washed out of the soil, and may therefore be applied at any season either separately or mixed with compost or farmyard manure. The crops most benefited by phosphate fertilizers are roots; fall wheat is most benefited by a general fertilizer, or one rich in nitrogen. Barnyard manure with bone dust or superphosphate makes an excellent fertilizer for wheat. In our March issue, 1885, page 74, will be found directions for making superphospoate, farmer's method.]

What are our Exhibitions Coming to?—Now that "show time" is near at hand again, I hope the ADVOCATE will bring prominently before the people the folly of allowing our agricultural fairs to degenerate into excuses for horse trotting, hurdle-racing and side-show business generally. Canada has, until late years, been noted for its annual agricultural exhibits, while in the neighboring Union the State Fairs were kept alive by the crowds who gathered to the horse trots. If it has come to it in Ontario that our exhibitions can only be kept alive by horse trots and fancy shows, then we may be sure that our farmers are losing interest in their own occupation, and that will argue badly indeed for the country. I don't by any means wish to intimate that our boys and girls should not have enjoyment at these gatherings, but the "side-show business" should be kept in its place outside the grounds. Then, again, there is a practice creeping in, or rather it seems to have already taken root among the officials of the larger exhibitions, viz., that of receiving perquisites from exhibitors, presumedly for favors received. I am sorry to learn that several of the officials belonging to the old Provincial Exhibition have been in the habit of receiving presents from exhibitors, and in the case of one who is said to be a clerk inside the building, he is known to carry home perquisites, which average from fifty to seventy-five dollars worth, at the close of each exhibition. Now, if the managers cannot pay sufficient salary they ought to do so, and forbid all this sort of thing, which, to say the least, is suspicious, in the case of men who have the books of the association in their charge. By all means don't let this "boodle" system spread in Ontario.—CANADIAN, Blenheim, Ont.

Planting Nuts—Propagating Grapes and Raspberries—Setting out Fruit Trees—Transplanting Evergreens.—1. In planting nuts, how soon should they be put in the ground, such as beech, chestnut, maple, etc.? 2. Should hard-shelled ones like hickory, walnut, etc., be cracked or not? 3. Are black walnuts, commonly sold, fit for planting? 4. Are any of these or acorns good for planting if they get dried through? 5. Should softer seeds, as white ash, basswood or ironwood, be put in in fall or spring, and, if in spring, should they be kept from drying out? 6. In a cultivated soil, how deep should they be planted, and how close in the row should they be allowed to grow to stand four or five years? 7. How are grape vines propagated? 8. Is the fall as good as spring for setting out fruit trees from a nursery; if so, when? 9. Are red raspberries and black or thimble berries propagated by slips, like currants, or by rooting the tips, as black caps? 10. Are there any other common trees that can be grown by putting a branch in the ground like the willow? 11. Can evergreens be transplanted in the fall; if so, when?—E. B. H.

[1. Early maturing nuts should be planted as soon as possible after falling from the trees; others may be planted in the fall or kept till spring. (See article on page 266.) 2. Hard shelled nuts should not be cracked, but in order to hasten germination, they are usually soaked in warm water. 3. Usually, we think. 4. No nuts of any variety are apt to germinate after drying through. 5. Soft seeds should usually be planted in the fall, but, if kept till spring, they should be kept cool and slightly moist—say in the cellar. They should not be put in heaps, as they may then heat. 6. They should be planted quite shallow, not more than half an inch of ground being put on, which should be packed moderately firm. The distance apart depends upon the variety and soil; about six feet apart each way, or more, if the soil is rich and the variety a rapid grower. 7. Grape vines are propagated in three ways, viz., by layers, cuttings, and buds. The cuttings or buds should be selected from well-matured wood of the previous year's growth. A cutting contains two buds. In cold climates they are cut from the vine in the fall and kept over winter, usually in the cellar; they should be kept moist with earth or moss, and planted out early in spring. 8. The fall is usually as good as the spring. 9. Raspberries and blackberries can only be propagated by suckers from the roots, or by cuttings from the roots. 10. No. 11. Spring or fall will do, the former usually being preferred; or you may dig around the roots in the fall, almost separating the tree from the ground, and transplant early in the spring while the ground in the mass of roots is frozen. They may be removed on a stone boat, and the holes for their reception should be dug in the fall, the earth being packed around them when the frost is out of the ground. When transplanted in the fall, the latter end of September is the usual time.]

Planting Dwarf Pears.—The advantages of planting dwarf pears on standards are not generally known. Many people in this the broad light of the nineteenth century do not know that the same fruit may be grown dwarf or standard as may be desired, and that all the difference is that the dwarf is grafted on the quince root, while the standard is on the pear root. The standard is generally considered the most durable tree, and the dwarf is admitted to bear much earlier, often showing fair specimens at two years from planting. Now it is not generally known that a dwarf tree if planted in a dry soil so it can be put in the ground deep enough to cover the junction with the quince will bear early as a dwarf, and in time will take root from the pear stock above the quince root, and grow to be a standard tree. Two as fine standard trees as we have seen are from dwarfs thus planted, one of which is a Flemish Beauty, the other is called Beurre Oswego; the latter we consider a local name, not the true name of the pear. These trees are on the farm of Mr. John Allison, three miles east of Exeter, in Huron county.—[RAMBLER.

Holsteins Again.—My attention has been called to an explanation of B. B. Lord & Son, corcerning the sale of Molly Stork, in your June number. Will you kindly afford me space for a reply? B. B. Lord & Son, of Sinclairville, New York, advertised for 30th March, 1886, a sale by auction of Holstein-Friesian cattle at Grand's Auction Rooms, Toronto. This is the announcement:—"Announcement—Public Sale of Holstein-Friesian Cattle.—Owing to the great and increasing demand for Holstein-Friesian cattle by the enterprising farmers of the Dominion, and the difficulty attending the quarantining of them in small lots, we decided to send a shipment of first-class animals to Point Edward, and at the expiration of the ninety days quarantine, to sell them at public auction at Grand's Repository, Toronto, Ont. In this way our neighbors across the line can supply themselves with acclimated, quarantined, imported stock, which is wintered and ready for the season of 1886." You will notice in this announcement that they had decided to send a shipment of "first-class animals" to be sold at Grand's. That our neighbors (we Canadians) could supply themselves with animals "ready for the season of 1886." They published a catalogue; in it they say, "we are practical farmers, and our experience has proved that we can make more money handling Holstein-Friesian stock than any other kind of farming we have ever tried." I don't doubt it; there is not much chance in ordinary farming for the perpetration of frauds such as can be had in palming off defective stock, as in the case of the sale of Molly Stork to me. In this catalogue Molly Stork was referred to as follows:—"No. 29, Molly Stork, ear tag 563, No. 1821, N. F. H. B.; calved May 16, 1884; bred by W. Conijin, North Holland; imported June 1st, 1885, by B. B. Lord & Son. Color, black; blazee throat, brisket, strip up right shoulder over on left, spot on left, band around hips, belly, legs, except forearms, three-fourths tail, white, black spot on each hip. Sire, Artis 127 N.H.B., who is probably one of the most successful show bulls in Holland, having already won four first prizes and two prizes of honor at the greatest cattle shows in the Netherlands, and we understand his owner has refused 4,000 guilders for him ($1,600). He is still owned in Holland. Dam Koningen, 724 N. H. H. B., milk record 78½ lbs. per day." Now, sir, you will notice that not one word is said about Molly Stork having been served. B. B. Lord & Son say that she had been served several times. Why were they not honest enough to say so in the catalogue? It may be said that was an oversight, but let us see what they said about every other heifer offered at the sale, with the single exception of No. 10, which at the time of sale was not old enough, and Molly Stork No. 29. Commencing with No. 7 (the first six on the catalogue were bulls), she is marked served July 10th, 1885, to Banington, and so from 7 to 28 with the exception of No. 10 above mentioned and Molly Stork No. 29, making the entire catalogue. The date of service and the bull by which served is given. Why, if she had been repeatedly served, they had therefore reason to believe her to be a non-breeder, why did they not say so in catalogue, and why did they bring her to Canada to palm her off on Canadians? Would an honest man or firm, if he or they believed her to be a non-breeder, bring her from Sinclairville, New York, to Point Edward, and keep her there three months in quarantine and then bring her to Toronto to sell to some Canadian breeder as a "first-class animal, ready for the season of 1886?" Not a bit of it. A fraud such as perpetrated by Lord may be of two kinds, one in keeping back a known defect from an intending purchaser, and another making a wilful and deliberate false statement about the animal. I charge Lord with both. He says that this heifer had been served several times; then I say he dealt fraudulently with the public and me in not saying so in his catalogue. I say that he made no such statement at the sale, but on the contrary spoke of her as one of the very choicest animals in the whole catalogue, and when knocked down to me congratulated me on becoming the owner of so choicely bred and so good an animal. Lord says Molly Stork had been served several times before the sale. She was then 22 months old. Now, breeders of cattle know if such were true she would have come in service since, but I have owned her since 30th March, 1886, a period of about 16 months, and she has never shown the first symptom of coming in use. This is either phenomenal or Lord tells what is not true when he says she had been served several times before I got her, and breeders will, I think, conclude that he states what he well knows to be false. When Lord & Sons got my money they obtained it under false pretences. Had they got any man's money under the same circumstances in the United States they would have had to refund or go to prison. Had not the chance to sell in Canada been open, Molly Stork would have had to be sold over there to go to the butcher. Now let us see what honest people do under similar circumstances. The Ontario Government Experimental Farm had a sale in autumn of 1885. A Holstein heifer was advertised for sale. When she was put up Prof. Brown stated that since the catalogue of sale had been published they had come to the conclusion that the heifer was a non-breeder, and they did not want under the circumstances to sell her; she was withdrawn, and she went to the butcher. Look on this picture and on that. Look upon the course pursued by cheats on the one hand and honest men on the other. I call the attention of the Holstein-Friesian Association of North America to this case of fraud on the part of one of its members.—[JOHN LEYS, Toronto, July 28, 1887.

Spavin.—I have a young mare three years old that showed signs of lameness. I did not know what was the matter with her for some time, but now notice a spavin growing. Please tell me what to do with her.?—[G. W. B., Petiodiac, N. B.

[Rest the animal; apply a blister composed of 1 part of biniodide of mercury and 8 parts of lard. If the hair is long clip it off before applying the blister. Keep the horse from biting the blistered portion uutil it has been well raised (from 1 to 3 days), then wash off and smear with lard. If no beneficial results follow repeat the blister after the irritation caused by the first has passed away. If still no cure follows, let a veterinary surgeon cauterize (fire) the affected part. A high heeled shoe is sometimes beneficial.]

Morning Star Potatoes.—Will you or some subscriber to the ADVOCATE please give me information respecting the quality of the "Morning Star" potato, and the esteem in which it is held in the Upper Provinces?—NEW BRUNSWICK.

[We have tested the Morning Star potato with over 30 other varieties, and although the White Star is our favorite, we think very few other varieties equal the one you mention. Other potato growers also speak in glowing terms about the Morning Star.]

Breeding Sex at Will.—I have seen in one or two numbers of the ADVOCATE the question asked how to produce sexes? Now, with regard to cattle and horses, I am perfectly satisfied that I can produce just what I want every time. I will tell you how I found out. Four years ago this spring I bought a full blood Shorthorn bull, and bronght him into my neighborhood. I had seven cows of the small kind, no breed in particular. I had three good milkers and four poor ones. I wanted heifer calves from the good cows, and male from the poor ones, that is, the poor milkers. Having the bull myself I put all my cows when they first came in season, and the result was all bull calves. Now, one of my neighbors had six large cows that he allowed to run on the road in the day time; he wanted bull calves to turn into steers. It was generally late at night when his cows came home, and when he would find one of them in season he would shut her up over night and bring her to the bull in the morning. We had most always to hold the cow to be served. The result was all heifer calves. The next year all the cows that I wanted heifer calves from, when I found them in season I shut them up for twelve hours, or until they were just going out of season, and the result was I got just what I wanted. I had a good breeding mare, but we got horse colts: I wanted a span of mare colts. I tried the mare and found she was in season, but I didn't put her to the horse till after 24 hours, and the result was a mare colt. Now, for the last two years I can get just what I want, unless my cows get out, or some bull gets into the field to them. Now look at this fact, all thoroughbred stock breeders always keep their own bull, and cows are generally put as quick as they are seen to be in season, and the result that they have more bulls than heifers. Now, Mr. Editor, I could bring more proof if it was necessary, but I am convinced that my plan will succeed.—J. L., Kingston, Mich.

Hay Caps and Clover.—I have been experimenting this season for the first time with the use of hay caps in making hay and clover, and with most satisfactory results. They are made of pulp, light, easily put on, perfectly waterproof, and apparently quite durable, of a saucer shape, and large enough to cover a cock of 50 to 100 lbs. of hay. By their use I have been able not only to save my hay in beautiful order, in spite of frequent showers, but also in many cases to carry it from the cock even after a heavy rain without further handling; and I have also found that by cutting on Saturdays, cocking and capping in the evening, that I have the usual number of loads to bring in on Monday, instead of as heretofore trying to get everything in the barn on Saturdays, and either wasting time on Monday or cutting more than I could properly attend to. With grain I have not yet tried them, but in clover growing I believe their use is destined to serve a most important end, as they overcome the objection that many people make to clover growing, on the score of needing so much handling in curing it. My method this year has been on a bright day to cut with the machine, beginning at one o'clock; then next morning, when the dew is off, turn, and at one o'clock begin to cock up; cap at once and leave for three, or if busy at other work, six days, and then carry directly from the cock. On clover I am more and more convinced we must largely depend not only for keeping up the fertility, but also the productiveness of our land, and any invention which will encourage the growing of clover hay for dairy purposes, with the intention of plowing under the second crop, should be looked upon as a national benefit. That clover plowed down benefits the land in other ways besides the amount of fertility it may impart, is now well understood. In the vicinity of New York, where land is worth $500 an acre, and where the market gardeners apply annually 100 tons of manure to the acre, it is now the almost universal custom to keep 25 percent of the land in clover or other grasses, to plow under every third or fourth year—not for the sake of fertility, but to get the soil in that friable, easily worked condition that can be obtained by no other method.—W. A. H., Sherbrooke, Q.

Notes from the North.—The township of Culross, on the 10th of last month, as seen by our correspondent, was sadly in need of rain, and the harvest which was at that time about half housed will be considerably below the average; in fact, many of the farmers declared that wheat would not yield above ten bushels per acre, but later I found it would run from twelve to fifteen, which is indeed small for the quality of soil which, to the passer by at all events, seems excellent for wheat. Oats are good in straw but not in grain, and although the yield will be fairly good as measured from the machine, yet when placed on the scales will be very light. Passing the dilapidated looking village of Teeswater, I found Mr. Peter Arkell, one of the most extensive farmers in Bruce county, rushing the crops into the barn and tramping them with a horse into the smallest possible space, and yet a likelihood of dearth of room even in his capacious barns. Here I saw the largest herd of Shorthorns I had ever had the privilege of seeing, numbering sixty head of pedigreed stock. They are kept much as the average farmer keeps his common cattle; never fed for show purposes, but kept in fair condition only; in fact, hardly that. Not so the sheep. Mr. A. seems to take more pride in wool than hair, and well he might as he has been almost invariably successful with his fine Oxford Downs. The flock numbers about eighty head. The next object of interest was the cheese factory of Mr. Denning, near Lucknow, which is a model of neatness, and is provided with all the latest appliances, such as steam agitators for stirring the milk in the vats and steam power curd mill. The road from Lucknow to Wingham is not at all inviting to a lover of agricultural pursuits; in fact, if there is a more undulating road than that part between Lucknow and Whitechurch this side the Rocky Mountains, I would like to be warned of its location. There is a creamery at Whitechurch, which is doing a good business and a prospect of its increasing. The next point of interest was the farm and stock of Mr. W. J. Biggins, Secretary of the Granton Farmers' Club, with a pleasant location, fertile soil, good house and barns, and a very fine herd of cattle, mostly pedigreed Shorthorns. Mr. B. is certainly comfortably situated, and very properly enjoys it. Most of the readers of the ADVOCATE will remember the paper on feeding calves sent to the Dominion Farmers' Council by the Granton Farmers' Club, written by a sixteen-year-old boy. This is the only son of Mr. Biggins, and while he knows how to raise calves, it is not all he knows, having won many laurels at our best exhibitions with his painting and drawings, some of which are of exceptional merit, particularly the drawing (copy) in Sepia "The death of the Stag," and the painting (water colors) "The Partridge." Close by Mr. Biggins is the farm of the Grant Bros., containing three hundred and fifty acres, all so far as we saw in a good state of cultivation. The Messrs. Grant deal largely in cattle and some little in horses, not as shippers, but as feeders and grazers. They are comparatively young men, both bachelors (if indeed their youth does not preclude the term), heir home being presided over by their mother and sister. We enjoyed their hospitality, and shall not soon forget the pleasant moments spent with them. Wheat in this township (Stanley) is the best we have seen, yielding from 20 to 25 bushels per acre.—[RAMBLER.

The Industrial Exhibition.—The Toronto Industrial Exhibition Association is not a joint stock concern, as many suppose. Its Board is made up of representatives from a number of agricultural, horticultural, poultry and dairymen's associations, and from the Toronto Board of Trade and the City Council, all of whom, with the exception of the Secretary and Treasurer, give their time to the work gratis. All the profits derived from the Exhibitions are directed by the charter of the Association, to be expended in improving the buildings and grounds, which belong to the city. Excepting the Dominion grant of the present year, and two small grants in previous years from the Western Dairymen's Association, the Association has never received a dollar of the public money. The entries this year ensure a full exhibit of the best products of the farm, the workshop and every industry of the country. The value of the prizes offered is greater than ever before. New and novel attractions, balloon ascensions, military and naval engagements, feats of horsemanship, brilliant street and city illuminations, band exhibitions, and parades of uniformed societies and other specialties, will be presented each day. The fair opens on Sept. 5th, and closes on the 17th.—[H. J. HILL, Sec., Toronto, Ont.

The Household.

By a Family Doctor.

During this month, September, when rains come seldom and wells are low, additional care must be exercised about drinking water. There is typhoid fever in many localities and few theories are more universally admitted by scientists than that which gives causation of this terrible disease to a specific germ that most frequently enters the human system in water. There is one certain protective; drink only water that has been recently boiled, for the growth that originates typhoid is killed by even a lower degree of heat than 212 deg. Fahrenheit. Only last week I was consulted by a gentleman and his wife, who were poisoned at a well-known resort by drinking water which seemed bright, sparkling and pure. Their symptons were almost those of cholera, and a hasty examination of the water revealed nothing. Visiting the hotel, the cause was soon made clear. Half a dozen privy-vaults were within fifty feet of the well whence the supply of drinking water came, and free percolation through a loose sandy soil was going on.

Exercise care in drinking. Iced water is never safe, both because it chills nerve centres, and because ice usually contains a large quantity of organic filth. Pure spring water, cooled in bottles, is best; and most of the carbonic acid waters in common use are excellent.

Clothing should be carefully chosen. With a thin suit of woolen, or wool and cotton next the skin, outer garments should be as light and porous as possible, and always of light colors, gray being preferable. It is far better to carry a light overcoat or have one handy, than to wear heavy-weight or dark garments, because a change may come suddenly.

It is surprising how certainly a cold may be broken up by a timely dose of quinine. When first symptons make their appearance, when a little languor, slight hoarseness and ominous tightening of nasal membranes follow exposure to drafts or sudden chill by wet, five grains of this useful alkaloid are sufficient in many cases to end the trouble. But it must be done promptly. If the golden moment passes, nothing suffices to stop the weary sneezing, handkerchief using, red-nose and woe-begone looking periods that certainly follow.

A neat, clean, fresh-aired, cheerful, well-arranged house exerts a moral influence over its inmates, and makes the members of a family peaceable and considerate of each others' feelings and happiness. The connection is obvious between the state of mind thus produced and respect for others, and for those higher duties and obligations which no law can enforce.

Multitudes of persons of both sexes lose health, and oftentimes life, by busying themselves until warm and weary, and then throwing themselves on a bed or sofa, without covering, or in a room without a fire, or by removing their outer garments after a long walk. If you have to walk and ride both, do the riding first, and, on returning, go to a warm room, and keep on all your wraps until cool, even if you suffer some discomfort.

Wood-ashes put into a woolen bag and placed in the water will make hard water soft.

Clam-shells are more convenient for scraping kettles and pans than a knife, as less time is required.

HOW TO TRAIN A CHILD MENTALLY.

BY A FAMILY DOCTOR.

In a former paper I spoke of the physical development of children, and if my memory serves me aright, I condemned in measured terms what I call the hot-house plan of rearing children. I may here just add that while as a rule the offspring of the middle classes in England are over-daintily fed and over-coddled, those children that are born beyond the silvery Tweed, and especially those who live in the far North, are brought up somewhat too much on the hard. The words of the proverb, "Spare the rod and spoil the child," are construed in a way which I feel sure that wisest of men never meant them to be, and consequently corporal punishment, both at schools and in family circles, is carried out to the verge of cruelty. In Scotland both parents and teachers are often more feared than loved, and I do not wonder at it, for the punishment meted out to a poor child is often out of all proportion to the fault that has been committed. And not only is this the case, but children are very often punished, and that, too, severely, for what was no fault, but simply a misfortune.

Let us now ask ourselves what are the qualities that we feel ourselves justified in trying to develop in the minds of our children. As I have already said, they are those that will be found most useful to them and to the world at large, when they go forth alone and unaided to take their rank and position in the great battle of life. But we must remember at the very outset that if a child is mismanaged *corporeally*, he will have but little chance of ever becoming a man *mentally*—a man and a gentleman. You can never make a man of a milksop, and a child that is over-pampered, luxuriously fed, indulged in every whim and fancy, and never permitted to rough it in the least, will grow up selfish in the extreme, and mayhap a bully and a coward, and altogether useless in this brave, bustling, work-a-day world of ours. Be ever careful of the health of a child; and to be this you must yourself know something about the common laws of health, and the benefits to be derived from fresh air, exercise, sunshine, temperance in food, and—listen, pray—temperance in dress, for over-clothing means over-coddling, and over-coddling kills. Coddling not only kills the individual, but it undermines the strength of nations; it is the axe that lies at the root of its manhood. Remember that the Romans were the most glorious people in the world until they took to effeminate habits and self-coddling. Then they went down-hill gradually but surely.

To children as to us all, but to children especially, is example better than precept. What a good thing for both ourselves and them if we could always bear this in mind, and order our actions and our lives as we would have them order theirs! Their eyes are ever on their parents, not to criticise, not to censure or blame, but to try to imitate. To a child, whatever is, is right, if father or mother does it; and he will grow up, not acting as you have told him to act, but, in a very great measure, the same as he has seen you act. What a beautiful trait in a child's character, for instance, is candour and truthfulness! How poor a figure a sneaky child, who has made some excuse, or even told a lie, to hide a fault, looks beside the bold little fellow who at once admits a wrong action! And yet the child is just what the mother makes him. Can she expect her child to be truthful if she herself be not so—if she is heard to lie before him, even in little matters, or to force into a breach lame excuse, where the truth would have acted better and more boldly? Women themselves do not nor cannot be expected to know the amount of misery and wretchedness that untruthfulness and want of candour cause in this world. But men could tell them. Among the poorer classes, I am sorry to say, truth does not shine as a virtue; but in middle-class life, that life with which we have most to do, it ought to and does, and a man who has been found untruthful cannot, if he possesses a spark of feeling, hold his face up before the sun of society. Untruthfulness has blighted many a life, and broken many a friendship 'twixt man and man. Now, we should not only be most truthful in our conversation before children, but we should be truthful towards them. We should never, on any account, deceive them, nor make promises to them which we do not mean sacredly to fulfil—even if it be the promise of punishment. This latter is sometimes necessary, though but seldom; yet the habit of threatening a child with no intention of fulfilling such threat is greatly to be deprecated.

Never teach a child to be vain. Vanity is ruinous to young girls, and it leads to boastfulness in young men, and this again to untruth. A girl is rendered vain of her looks and in matters of dress; a boy generally of his deeds or acquirements. A boy who is made to believe he is clever very often becomes insufferably rude and impertinent, and will grow up a vulgar man.

From truthfulness to bravery or courage, the transition is easy. What bravery really is in the abstract, however, or whether it be almost entirely an attribute of the mind, or dependent more on physical development, I must not stop to inquire. Sufficient to say that it is something which we like to see a child evince signs of possessing, sufficient to believe and know that it is something which can be largely developed wherever the germ already exists. Then comes the question, "How?" You cannot beat bravery into the brains of a child, that is certain; but you beat it out of him. If, even when learning to walk, you run to pick him up, with coddling words and frightened looks, instead of laughing at him, and letting him raise himself if he can, you are assuredly guilty of quenching the flame of courage which otherwise would burn up in his heart. Given two boys, No. 1 and No. 2: No. 1 gets a nasty tumble; his mother, much as she feels for him, pretends it is nothing, and laughingly encourages him to rise, and though his little face is red with pain, his little lips compressed, and a big swelling on his brow, he will be romping and screaming five minutes after. No. 2 gets down, and nurse and mother run; he is pitied and petted, and put to bed with lollipops. Ah! mothers, depend upon it, No. 1 will be No. 1 all his days, and No. 2 always in the rear of the battle of life.

Do not, though, let your child be foolhardy; a brave man, or a brave boy either, *knows* his danger, but does not shrink from it. And a brave boy is never unkind to those he can rule. Laugh at a boy for such apparently trivial acts as beating his nurse or behaving roughly to a cat, and you will very likely make him a bully.

Kindness to the lower animals should always be inculcated—more, mind you, by example than precept. A child cannot have a better playmate than a dog or a cat; but he should be taught to love it, taught that it has feeling and feelings, and can hunger and thirst, and suffer, and love, and be grateful. Nay, but I am wrong in speaking of teaching children to love animals; you do not require to do this; you need only let them have their companionship—the animals themselves will do all the teaching.

What is true of animate is true of inanimate nature. Let your child be as much as possible among plants and flowers. They have a language of their own, a language which cannot be taught, but which may be learned, and the tongue with which they speak is divine.

The mind of a child is cultivated by the reading of well-chosen books, or by being read to before he himself is able to read. What kind of books are the best? In my opinion, books to make your boy laugh and think and imagine, but not think too deeply. Nursery rhymes and stories by the dozen, if you choose, but pray do not let there be anything of the dismal or horrible about them. Encourage the love of music. Do not bother them with instruments, however, until their fingers gather sufficient strength. Better they listen to others playing, listen and listen, listen and learn, until something within them makes them exclaim mentally, "Oh! I feel sure that I, too, could play." But as to singing, that is another thing. Let them sing from their babyhood.

The exercises of both writing and drawing enlarge the mind and conceptions. And when a child is old enough, and can write tolerably distinctly, let him or her begin to cultivate descriptive powers. Thus, suppose you ask a child to write down the description of a walk he has had, if only in a garden, or of some incident which he has witnessed, though the task be hard at first, it is wonderful how soon it becomes both easy and pleasurable to him. But discourage all attempts at high or flowing language; let him write only what he sees and feels, and that in the simplest language of his every-day life.

Children think much more deeply than we imagine; we should, therefore, answer their questions to the best of our ability, unless evidently asked in a spirit of frivolity, and try to explain to them reasons for things they see occurring around them, and for the acts which you yourself perform. But gain their confidence in every way in your power. A mother should be more of a mother than a teacher, or rather she ought to be both combined.

You like to see your boy clever, doubtless, but do not make a show child of him. Do not even let him know you think him clever, and discourage all pertness in conversation, for this too often borders on impertinence. Never permit him to contradict you. If he contradicts his mother, may he not, when old enough to go out, be guilty at table of very great rudeness? At the same time, mothers should never observe contradiction. When you have occasion to reprove, beware of doing so angrily. It is far better to speak gently, and make the child feel ashamed of himself, because shame breeds sorrow and contrition, and this in its turn the desire to behave far better in the time to come.

The love of duty cannot be too early instilled into the mind of a child. The secret nature of duty requires, however, to be fully appreciated by parents themselves before they can teach it to their children.

Teach your child to be courteous and obliging. This you can do in the nursery by precept; but you can also point out to him when abroad the courtousness of other gentlemanly boys, and show him how much you admire it.

An unselfish and non-self indulgent boy will generally grow up a gentleman in manners; at all events the converse is true.

Teach your child to be honest and honorable in all his doings and dealings with his brothers and sisters; and teach him, too, that rare virtue, charity, which ever follows at the heels of truth.

Order and regulation are no mean acquirements. If they be not taught early they will never be learned. A child should be made to put his toys away each in its proper place, so that he could find them in the dark. So will he be tidy in his person, tidy in the apartment he occupies, and orderly and tidy in life.

I need not tell you to teach your child to pray, nor remind you how religion softens one's path through this world, and lengthens life itself by giving hope and calm in the hour of peril and sickness.

And now I am at the end of my space, and the feeling uppermost in my mind is that the Family Doctor has said so little where he meant to have said so much. I shall have done some good, however, if any single sentence I have penned causes some mother to think.

Minnie May's Dep't.

MY DEAR NIECES.—Since last writing to you I have travelled many miles, and most of you will be surprised to hear that I am now in England. I sailed from New York on the 18th June, and reached Liverpool on the 28th, not a quick passage, but a very pleasant one, and time flies fast enough sometimes on board ship with pleasant companions and a smooth sea, such as we had, even though we are cut off from all communication with the world. This is my first visit to England, and though I have only been here a few weeks I have seen a great deal, going almost immediately for a trip with some friends through some of the Midland Counties of England. Of this journey I shall speak first, leaving Liverpool, London, Eastbourne and other spots where I have been till later.

We first went to Derbyshire, spending a few days at Buxton. This well known watering place is situated in a deep valley, but is 1,025 feet above the level of the sea. The chief object of interest is the spring of tepid water issuing from fissures in the mountain limestone at the temperature of 82° Fahrenheit, and which never varies at any season of the year. The curative nature of this water is especially for gout and rheumatism. As we were suffering from neither of these complaints, we hastened on, fearing we might become affected from seeing the numbers afflicted around us. Our next stopping place was York; *en passant* we spent a day at Haddon Hall and Chatsworth House; the former was once the residence of the Vernons, into whose hands it came from William Peverill, a natural son of William the Conqueror. In 1567, the property passed by marriage to the Manners, by whom it has ever since been held. The romantic story of Dorothy Vernon's elopement with John Manners, the second son of the Duke of Rutland, on the evening of her sister's marriage, from a stairway leading from the ball room to the garden, is told, which, true or false, as long as the door is there, and the steps with the darkling grove of yew at their foot, the tale will live and visitors will hear it. The whole hall is open to visitors, containing a great many rooms and apartments; of these I must only mention a few. Passing through the court we enter the chapel; the bell-turret rising above the entrance is singularly chaste and beautiful. Its noteworthy contents are a Norman font, an old vestment chest, some family pews of characteristic discomfort, and a window in memory of Sir Richard Vernon, who lived four and a-half centuries ago. In the side wall is a squint, in alluding to which Sir Walter Scott says, "tripping from it, the lady of the house, who, like John Gilpin's wife, 'had a frugal mind,' could attend to religious and culinary matters at the same time." Now, unless the good lady was gifted with that "patent hextra double million magnifyin' glass microscopic" power of vision which, in Sam Weller's opinion, would have enabled her to see across a courtyard through a couple of eighteen inch stone walls, this must have been impossible. Crossiug the courtyard to the central portion of the building, we enter a passage separating the kitchen from the banqueting hall. In the kitchen two huge fire-places suggest quite a Saxon prodigality of good fare; next to them the salt box, the chopping block and the mincing bowls are the most noticeable cooking utensils. We next passed into the banqueting-hall; round two sides of it runs the minstrel gallery; at the far end of the room is a dais whereon is a worm-eaten table at which the "quality" feasted, while the humbler members of the household occupied the lower floor. There are some old pictures on the wall, and on one side of the doorway through which we entered, an iron ring bears witness to the penalty inflicted on a guest who failed to take his proper quality of liquor in the old days of rude hospitality; to it his wrist was fastened while the toast master and other guests poured the "precious liquor" down his doublet. The drawing room, which is above the dining room, is surrounded by tapestry from three to four centuries old. The Earl's bedchamber, which is entered from the drawing room, is tapestried with scenes from the hunting field; beyond it is the page's bedchamber. The ball-room is the largest and most pleasing apartment of all; it measures more than a hundred feet in length; the floor was made from the trunk and branches of one tree, while the roots supply Dorothy Vernon's steps leading to the garden. The last room of interest I will mention, and then pass on; space will not permit me to give but a short sketch—the state bedroom, in which a lofty four-poster is shown as the bed of Queen Elizabeth, with the tapestry hangings and coverings almost fallen to pieces with age. By the side of the bed is the Duke of Devonshire's cradle. The walls are hung with tapestry, and in those days you know this was the ladies' needlework, and it must have taken a great deal of patience and time; they always had some subjects; these were taken from Æsop's fables.

A drive of a couple of miles brought us to Chatsworth. This is the property of the Duke of Devonshire, and, unlike Haddon, is occupied and comparatively new. The present building was only furnished in 1706. Mary Queen of Scots occasionally resided here, and the reason ascribed for her being so often brought here would still hold good under similar circumstance, viz., the remoteness of the locality from large towns where conspiracies might be conveniently hatched. Almost everything pertaining to Chatsworth, both inside and outside, is splendid and magnificent, and it will save my readers the vexation of having these words constantly before their eyes, if they will kindly realize this fact to begin with; they apply to every square yard outside of the mansion, and to the inside, which, perhaps, merits them even to a greater degree. One thoroughly beautiful and distinguishing characteristic of the interior is the exquisite wood carving found in the chapel, and the suite of state rooms; of parallel interest with the wood carving are the frescoes which adorn the walls and ceilings of the principal rooms. In those days sometimes their chief paintings were executed on the ceilings of their mansions, and they lay on their backs to admire them. Those who have cricked their necks as we did at Chatsworth will understand what I mean. As to the paintings on canvas and sketches in sepia, I must be content with enumerating the chief masters who executed them. They include Titian, Gioigioni, Tintorretto, Michael Angelo, Paul Veronese, Holbein, Rubens, Teniers, Van Dyck, Rembrandt, Sir Joshua Reynolds, Sir Edwin Landseer and many others. Sculpture is another of the features of Chatsworth. In this department we meet with the masterpieces of Canova and Thorwalden. In fact, almost everything that wealth could buy, and good taste in selection, is placed here. The interior—I can only give a condensed description of some of the principal apartments. From the sub-hall we passed into the great hall. This room is 60 feet long and nearly half that width. The floor is of black and white marble, mosaic; round three sides runs a gallery, above which the walls are frescoed with scenes from the life of Julius Cæsar, and many curiosities are to be found here. From the south corridor we passed into the chapel, with carvings of flowers, fruit, foliage and corn depending between the panels. The floor is of black and white marble, in mosaic. The altar and the walls represent various scenes in the life of Christ, the "Ascension" being depicted on the ceiling. From the chapel our conductress took us up two flights of stairs into the state apartments. The first we entered was the state dressing-room. Herein is a masterpiece of wood carving; it represents a cravat of point lace, amid other objects beautifully executed, many valuable pieces of old china, which is of great interest to the China maniac, and already I observe that England is full of them. The next apartment is the old state bedroom; here is the canopy of the bed in which George II. died, and on either side of it the coronation chairs of George II. and Queen Charlotte, also one of Louis the Fourteenth's wardrobes. The walls of this and the next room are hung with leather relieved with rich gilding. The state music room is the next in the suite. The fresco on the ceiling represents the story of Mars and Venus. Here, too, are the coronation chairs of William IV. and Queen Adelaide. A cabinet of precious stones contains, among countless other beautiful ones, a piece of emerald which, we are told, is the largest in the world. Hence we pass to the state drawing room, the walls of which are hung with tapestry; the ceiling shows Phæton driving the horses of the sun. In the state dining-room, which we next enter, the wood carving attains its climax in the strings of game hanging down on each side of the fire-place. Among other ornaments of the suite are full length portraits of the first Duke of Devonshire and others of royal or noble blood, in the full pomp of their robes of office, innumerable tables and cabinets, inlaid or enamelled, a set of ivory chess men, etc., etc. We then descended the steps and passed through the picture gallery. One picture, which attracts a good deal of attention, is the "Monks at Prayer," but of these so many are beautiful it is impossible in this letter to dwell longer upon them. The gardens, the grand cascade, a flooded stone staircase, the many fountains, the host of sculptured figures—the grand conservatory, a glass building, containing 70,000 feet of glass and six miles of piping for heating purposes; it is nearly 300 feet long, 120 wide and 65 feet high. In it the rarest exotics, from the fan palm—gaunt and heavy topped—to the maiden hair fern, find a congenial home.

I must close. Next month I hope to tell you something of York, Cambridge and several other places I have already visited. MINNIE MAY.

CUP PUDDING FOR INVALIDS.—Break an egg in a coffee cup and beat thoroughly, then add one tablespoonful of flour and a pinch of salt, and pour on milk till the cup is nearly full, then beat again and place in oven and bake twenty minutes. Eat while it is hot, with sauce made with white of egg and sugar beaten together till stiff. Try this and you will find it splendid.

Work Basket.

A pretty little frame for a photograph which I have lately seen is easily made and quite effective. For a cabinet photograph cut a piece of stiff cardboard 8½ in. high by 6½ in. wide. Cover neatly both sides with silk, satin or plush. Cut a piece of 1½ in. ribbon 7½ inches long. Fold it lengthwise, making a band ¾ in. wide. Stretch this across the width of the case ¾ in. from the bottom. Also one equal distance from the top, but not folded. Fasten neatly on the back and put a bow of the ribbon on the upper left corner. Slip the photo under the upper ribbon and down between the edges of the lower band which forms a pocket to hold the photo. A ribbon is also fastened at each upper corner by which it may hang from the chandelier or wall.

Another very pretty and ornamental paper fan —Cut a strip of wrapping paper 5 feet long and 1½ feet wide. If these dimensions are too large, suit your own fancy. Paste firmly all over it pieces of gilt paper or bordering in a crazy pattern. Fold like a fan. Put a knot of ribbon at the bottom, open the fan and fasten on wall. The effect is of a handsome Japanese fan.

Some of the prettiest articles in hand-painting are the decorated picture frames. One frame is tinted the color of the blue sky of June, painted with apple blossoms and engraved with the rhyme:

Merrily, merrily shall I live now,
Under the blossoms that hang on the bough.

Another frame is painted with tangled clusters of pink eglantine against a gold background and another with sprays of pink and blue bachelor's buttons and yellow butterflies. The looking glasses, framed in maple or mahogany, are artistically decorated. A beautiful glass of this kind is framed in gilded wood and painted on one side with a straying vine of gorgeous nasturtiums, a few of the gay blossoms appearing to have wandered over on the beveled glass. A pretty maple frame is decorated with purple thistles and green leaves. The motto, "I give back smile for smile and also frown for frown," is sometimes traced on the frame of the mirror.

Recipes.

CHILI SAUCE.—Twelve large tomatoes, six green peppers, one large onion, all chopped fine, one tablespoonful salt, one teaspoon ginger, one of cinnamon, one of allspice, one of cloves, one tablespoon ginger, two cups of vinegar; boil thick.

CATSUP.—To half a bushel of small tomatoes add one quart of vinegar, 1 lb. of salt, ¼ lb. of black pepper, whole, ¼ lb. of whole allspice, 13 cloves, ¼ lb. mustard seed, 20 cloves of garlic, 6 onions, 2 lbs. brown sugar, 1 handful of peach leaves; boil the whole together for three hours, constantly stirring.

BREAKFAST DISHES.—Boil half a pound of rice the day before, press into a square pan, and next morning slice into squares half an inch thick, fry a nice brown in lard or butter. Eat with sugar or syrup.

CORN FRITTERS.—Boil enough cornmeal mush the night before, slice in squares, and fry in lard or drippings until a nice brown. This is good eaten with salt fried pork or chicken.

TO REMOVE INK STAINS.—Dissolve a teaspoonful of oxalic acid in a teacuptul of boiling water; rub the stained part well with the solution. Or if water has not been applied, soak the spots in sour buttermilk.

Our Illustration.

Does not our illustration suggest quiet and rest and coolness and peace, such as we can so well enjoy after a busy day? The lake, so peaceful and still, and the young moon faintly illuminating the landscape, presents a picture calculated to bring out our best and purest and holiest feelings as we contemplate it. But such scenes are reserved for the few who live in the country, and whose home lies near one of our inland lakes. We will picture a comfortable farm house behind the trees—a home in fact—for too many of our farmers' houses are not deserving the name of home. It need not be luxuriously furnished. One of the most homelike homes I ever saw was innocent of every extravagance in the way of carptes and furniture. The floors can be stained and varnished to save scrubbing; the chairs can be wood or cane, with plenty of rockers for easy chairs; the walls neatly papered, with a few pretty pictures, and the girls can add numerous pretty trifles with their needle, and a cozy homelike room is the result. All the staining, painting and papering can be done by the members of the family, and will cost next to nothing. And as there is no home without food for the mind as well as the body, some books must be had, and as they can be had at such low prices, no farmer's home should be without them. Reading should be cultivated in every household, and the appetite increases with the indulgence. During the long evenings in winter when the family are gathered about the fireside, one can read while the rest work. Let no evening pass without some reading. Often it is because there are no books in the house that none are read. The distance from the city often prevents a farmer from taking a daily paper, but there is always a weekly one to be had, and a post office within reach. When business calls you to the city, purchase a few cheap books. Not cheap literature, but the works of the best authors may be obtained in cheap bindings or stitched, and if your boys and girls have the right sort of taste in them, they would rather have them than anything else. When there is something to read, much worrying and fretting is banished, and books will fill the place, to a great extent, of companionship, and often doubtful companionship at that.

Japanese Children.

In no other country, said Prof. Gardner in speaking of the children of Japan, are the young people treated with such consideration. Two days are national holidays for the children. The third day of the third month is the girls' festival. In every family you will find dolls in large numbers arranged in one of the rooms reserved for that purpose. These have been handed down from one generation to another. Every mother presents each of her girls with a doll every time this festival comes round, and as the dolls are never destroyed, in time they become numerous. The boys' holiday is the fifth day of the fifth month. On the morning of this festival, the boys, after passing under the barber's hands. with clean shaven heads and dressed in their best clothes, go to the temple and offer a prayer, and then start off for a lark. In front of every house in which a boy has been born, you will see a paper fish flying in the wind from the end of a long bamboo pole.

An Essay on Country Life.

THE PRACTICAL COUNTRY LIFE OF MANITOBA.

The term "country life" is generally understood to mean an existence wholly apart from the town and the "busy haunts of men," where one's whole time and attention is occupied among the works of creation—where the wonderful succession of the seasons, and the duties attendant to each, claim all our thought and care.

In whatever part of the globe we are situated, there must necessarily be some points in common to all who live in the country; but as Manitoba is, comparatively speaking, as yet in its infancy, it may not be uninteresting to our readers to know some of the characteristics of the country life of this province, which bids fair to be not only one of the most productive, but also one of the most populous in Canada.

A settler from the old country undergoes quite a new experience when he first takes up his abode in a prairie home. He finds himself much more dependent on his own exertions—his capability of turning his hand to anything and everything, and has much to learn of the ways and customs of the country.

On the wife also depends much, for it is by her good management, tact and forethought that a great measure of success depends.

As we wend our way through this fast improving country, we shall notice that the houses are chiefly built with logs—very substantial looking, although not very elegant,—while the more recent structures are of lumber, and are styled "frame houses."

In this part of the country, too, the dwellings follow the course of the river, from which the farmer has to supply his household and flocks and herds, as very few wells as yet exist.

To the principal houses is allotted a certain number of acres, and the two together form a "farm" or "lot" which is held and cultivated by the possessor. From this we shall gather that most of the inhabitants are farmers, who are also in a few instances, store-keepers, and supply the wants of their neighbors with those small articles which would otherwise necessitate a visit to the nearest town.

In the early spring the days are still very cold, although bright and clear, and the cattle require to be housed at night and supplied with hay twice a day. Many farmers contrive to have at least half their calves during this season, so as to secure a full dairy for cheese making, which generally commences in May and continues until the beginning of October. As soon as the frost is sufficiently out of the ground, the work of plowing and cultivating the land begins, and as the sun's rays become powerful, the ice on the river begins to thaw, and it is quite a wonderful sight to an unexperienced eye to see the huge masses floating down the stream, carrying everything before them.

When the river becomes a little clear many of the half-breeds living in the neighborhood resort to fishing. Their produce forms a delicious food, which they dispose of either to their neighbors or at the nearest town.

Rain usually falls plentifully in spring, and it is astonishing to see the rapid growth of vegetation. The grass on the prairie becomes so abundant and rich that the cattle are soon able to find more than sufficient food, and the increase in the supply of their milk is almost incredible.

We shall find the women also very busy at this season—setting hens, rearing chickens, young ducks and turkeys. To them devolves the care of the young calves, and the lighter portion of the garden work, the soil of which is usually plowed in the fall.

Indoors also there is much to be done. As the winters are so cold, and the frosts so severe in Manitoba, the family generally contrive to live in as small a space as possible, not only for their own comfort, but to give as little trouble as possible. As the warm weather advances, all this has to be changed; a general clear out takes place, and a thorough spring cleaning in the shape of scrubbing, while washing, painting, etc., takes place. As spring deepens into summer the prairie becomes one beautiful carpet of wild flowers of every color and description. The fruits are also worthy of mention. The wild strawberry abounds on the prairie, and is much sought after on account of its sweet, delicate flavor, although small in size. The blueberry, raspberry cyeberry, cranberry, wild cherry, nuts and black currants are to be found in the woods later on in the season, and early on a summer morning we may see the children, with their tin cans, going off to gather them. They are usually sold in pails, the price varying with the kind and quality.

Summer is perhaps the busiest season for the Manitoban farmer, for, although his cattle may give him but little trouble, he has to provide for their welfare during the winter, and for this purpose he finds his time fully employed in making a plentiful supply of hay. Early in the morning he may be seen starting off to the hay-swamps with his team and wagon, to which is attached his hay-rack and barrel of water. Late in the evening he returns with a heavy load of hay.

In some cases the hay-lands lie so far away from home that the farmer deems it expedient to "camp out," in which case he stacks his hay on the prairie, taking the precaution to plow and burn the grass round it to escape the ravages of the autumnal prairie fires, but even this sometimes does not avail, and the unlucky farmer occasionally finds to his dismay that his toil and labor during the summer has been lost. Hay stacked on the prairie is drawn home in sleigh loads in the winter as it is required.

Many hundreds of cattle roam the prairie during the summer months, and it is the custom to attach a bell to one cow in each herd. Its sound being well known to each owner, the bell serves to indicate the direction of the cattle, if they fail to appear at the usual milking hour. They are always very anxious to get away to the prairie early in the fresh, dewy morning, so that those who have to milk them need to rise early, ere the tinkling of the cattle bell reminds them that the cows are moving off to their pastures unmilked.

Mosquitoes abound during summer, especially if it happens to be a wet spring. Many farmers make a "smoke" or "smudge" in the cow yard, which serves to keep the mosquitoes away, and to attract the cattle home in the evening.

Manitoba autumns are especially charming; the days are still delightfully warm, while the evenings are cool and refreshing. Mosquitoes and other winged insects equally troublesome disappear. This is the shooting season, and as wild ducks, prairie chicken and partridges are plentiful, there need be no lack of game at the farmer's table. These birds form a pleasant change from the salt pork, which, next to bread, is the staple food during summer.

With the help of the mowing machine, rake and self binder (which answer well here) the harvest has, by this time, been safely gathered in, and we must turn our attention to the protection of the hay stacked on the prairie, as, just now, fires are frequent and dangerous, at the same time, beneficial in clearing old swamps, and dry uncut hay, and thus removing all obstructions to the growth of next year's crop.

Wolves are not very numerous or vicious, but just now may be heard howling in the distance.

The approach of winter is announced by colder winds and slight falls of snow, and everyone is reminded that warmer clothes and rooms are essential to health and comfort. The cattle need particular care during winter, as the cold is intense, the thermometer often registering 40° below zero. They must be properly housed well supplied with food, and let out to water once a day. Breaking the water-hole is performed by means of a spike.

When the roads are covered with hard frozen snow, sleighs and cutters take the place of wagons and other wheeled vehicles, and form a pleasant change, if well supplied with buffalo skins, wraps, etc.

In addition to the horse oxen are extensively used as beasts of burden.

The long winter evenings afford an excellent opportunity for improving our minds and exercising our talents, if we only take advantage of them.

On the whole, the inhabitants are very industrious. They knit their own socks, stockings, mitts and vests and other articles of apparel, besides which they dress skins, make soap and grow their own tobacco, etc.; in short, they do much to prevent any very great expenditure.

Cutting wood is quite an important business in the winter, as no other fuel is here available.

The New Year is the great season of festivity in this Province, and is made as much of as Christmas is in the old country.

While suffering somewhat for want of more railroads, we have still the convenience of having our mail delivered twice weekly; neither is the education of the young neglected. Good schools and competent teachers are within the reach of most of us.

But in Manitoba, as elsewhere, there is no "royal road" to fortune. It can only be acquired by steady work and constant perseverance.

To those who really strive to benefit the province, as well as themselves, great success undoubtedly awaits, never forgetting, however, in our haste to get rich, the duty we owe to God, our fellow men and ourselves.—[ANNIE PAIN, St. Francois Xavier, Manitoba.

PAPER FOR CLEANING PURPOSES.—After a stove has been blackened it can be kept bright and clean a long time by rubbing it over with old newspapers every morning. Rubbing with paper is also an easy way of polishing up the outside of the tea kettle, coffee pot and tinware generally. For cleaning mirrors, windows, lamp chimneys and the like, paper is the next best material to chamois skin, with which housekeepers in the country are seldom provided.

A little vinegar mixed with stove-polish will prevent the dust from flying, and will make the stove brighter.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES.—August has come and gone, and again the moon of changing leaves throws her soft light over the autumnal landscape. The harvest is securely garnered, and, as the evenings have lengthened, you have, I trust, found time to read the sweet, sad story of "Evangeline," taking from the jewel its brightest flashes—plucking from the parent stem its fairest blossoms. I am sorry there is no convenient arrangement at present whereby I might have the pleasure of reading the quotations of each of my nephews and nieces, but I shall tell you mine, and you can each compare your own with those I have made. I shall take them mainly in order, as I have taken them in the course of reading "the Tale of Acadie," and if there seems to be a want of proper connection in the thoughts, it is easily accounted for. As I was reading I could not but hope there were many of my nephews of whom it may be said, when they have passed into the beyond, that they were

"Men whose lives glided on like rivers that water
the woodlands,
Darkened by shadows of earth, but reflecting an
image of heaven."

And that some, nay, many, of my nieces may so live that they may teach others

"To believe in affection that hopes and endures
and is patient,
To believe in the beauty and strength of woman's
devotion."

In the old farm house, amid the many country homes, surely there are some of whom it may be said

"He was a valiant youth, and
his face, like the face of morning,
Gladdened the earth with its
light, and ripened thought into
action."

Who does not remember days of the long ago, when

"Filled was the air with a dreamy and magical
light, and the landscape
Lay as if new created in all the freshness of
childhood."

To remember that

"Man is unjust, but God is just; and finally
justice triumphs,"

will nerve our weakening faith, and cheer in the hour of weakness. I have read many beautiful allusions to the stars, but none surpasses the two following:

"Silently, one by one, in the infinite meadows
of heaven,
Blossomed the lovely stars, the forget-me-nots of
the angels."

"Over the head the stars, the thoughts of God
in the heavens."

The storm in its fury need cause no dread when viewed in the spirit of the poet—

"Keenly the lightning flashed; and the voice of
the echoing thunder
Told her that God was in heaven, and governed
the world He created."

Where is the thoughtful maiden whose heart does not understand these words:

"Something there was in her life incomplete,
imperfect, unfinished."

"Feeling is deep and still; and the word that
floats on the surface
Is as the tossing buoy that betrays where the
anchor is hidden."

My nieces and nephews, would you gaze upon a picture of marvellous beauty? If so, come with me and we shall behold it:

"Sky and water and forest
Seemed all on fire, and melted and mingled
together,
Hanging between two skies, a cloud with edges
of silver,
Floated the boat, with its dripping oars, on the
motionless water."

A new thought comes to us as we view the blue arch above us, when we read:

"And over all is the sky, the clear and crystal-
line heaven,
Like the protecting hand of God inverted above
them."

Only those who have experienced, in some measure, the heart-sickness which hope deferred brings, can know the depth of meaning, the intensity of sadness in the following lines:

"So came the autumn and passed, and the
winter—yet Gabriel came not;
Blossomed the opening spring, and the notes of
the robin and blue-bird
Sounded sweet upon wold and in wood,—yet
Gabriel came not."

One of the truest lessons of the whole poem is summed up in these words:

"Patience and abnegation of self, and devotion
to others,
This was the lesson a life of trial and sorrow had
taught her."

One more quotation and we shall close the book. How soon shall it be true of us—the now earnest, active, busied, worried ones, or the thoughtless, careless, aimless ones:

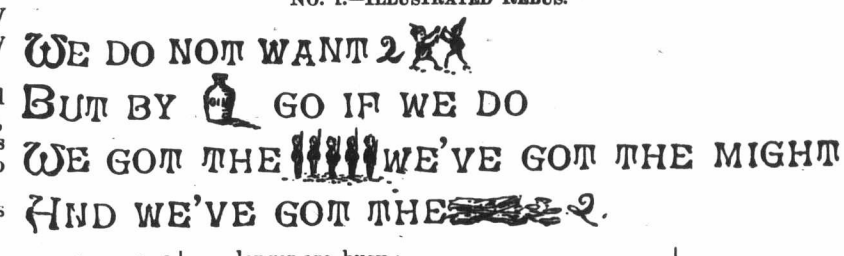
"Daily the tides of life go ebbing and flowing be-
side them,
Thousands of throbbing hearts, where theirs are
at rest forever;
Thousands of aching brains, where theirs no
longer are busy;
Thousands of toiling hands, where theirs have
ceased from their labors;
Thousands of weary feet, where theirs have com-
pleted the journey."

And now, fellow-members of the ADVOCATE reading circle, for the present, adieu!

UNCLE TOM.

Puzzles.

NO. 1.—ILLUSTRATED REBUS.



2.—CONE PUZZLE.

Diagram.

o	1. A consonant.
o o	2. Yourself.
o o o	3. To c nsider.
o o o o	4. A relation.
o o o o o	5. Indian corn.
o o o o o o	6. To appoint.
o o o o o o o	7. Shaped like a rhomb.
o o o o o o o o	8. A concluding speech.

Primals—A button-wood tree.
Finals—A number of words making sense.

FAIRBROTHER.

3.—DROP VOWEL PUZZLE.

-f- - r n-t-n- w-rld l-k- th-s,
-nd th- - sh-lt kn-w -r- l-ng,
kn-w h-w s-bl-m- - th-ng -t-s,
t-s-ff-r -nd b- str-ng.

ARTHUR T. REEVE.

4.—SQUARE WORD.

A large man.
A country in Asia,
A serpent.
A near relation.
Weeds.

A. HOWKINS.

5.—VEGETABLES ENIGMATICALLY EXPRESSED.

(*a*)—A vehicle and to putrefy,
(*b*)—Equal and to cut,
(*c*)—A vowel, a box, a vowel and a boy's name.
(*d*)—Soft and space.
(*e*)—To twirl and a period of time.
(*f*)—Toward, a boy's name and a vowel,
(*g*)—A pronoun, a consonant and near.
(*h*)—A prefix and to plunge.

HENRY REEVE.

6.—DIAMOND.

A consonant, a field, stain, laborious, pertaining to small particles, a subject of great debate in British Parliament, mournful, a plant, a song, a frozen substance, a consonant.

ADA ARMAND.

7.—WORD REBUS.

C
D
E

If you will try and solve this 'bus,
And work with all your might,
The whole will very quickly then
Appear before your sight.

FAIRBROTHER.

8.—A MONUMENT PUZZLE.

Diagram.

o	A vowel.
o o o	A number.
o o o o o	A vegetable.
o o o o o	An element.
o o o o o	Not sour.
o o o o o	A small height.
o o o o o	A kind of cement.
o o o o o	A girl's name.
o o o o o	Beautiful.
o o o o o	Alike.
o o o o o o o o	Grandeur.
o o o o o o o o	Suppose.

My centrals is a well-known place in the Western Hemisphere.

LOUISA F. REDMOND.

9.—CROSS.

Diagram.

o o o	To employ.
o o o	To settle.
o o o	Behind.
o o o o o o o o o o	To separate.
o o o o o o o o o o	Defence.
o o o o o o o o o o	Over nice.
o o o	A quantity.
o o o	A branch.
o o o	A girl's name.

HENRY REEVE.

Answers to August Puzzles.

1.—

DAGUERREOTYPE
SINCITEMENT
SASSAFRAS
OUTPACE
RIPEN
DOT
I
ANN
LOTTA
NIMMEST
EXONERATE
SLIDINGKEEL
SYNTACTICALLY

2.—

MILLIONAIRE
OA LX
UNL E CE CL
NTE DT AM
AIN I AT
NNE N TI
EE E IOO
RESIGNATION

3.—Planet, plane, place.

4.—

I A
dared
enerve
tnnt
immit
cuafter
le

5.—Miserable.

6.—

PIG
ACE
GET
AFFECTION
NARRATE
IDEAL
SAY
M

7.—a—Balsam.
b—Tuberose.
c—Snowdrop.
d—Hollyhock.
e—Candytuft.
f—Feverfew.
g—Marigold.
h—Primula.

8.—Courtships.
9.—Owl, hawk, dove, wren, thrush, crow.
10.—Light-house.

Names of Those who Sent Correct Answers to August Puzzles.

Annie C. Rothwell, Henry Reeve, Mary Morrison, Wm. B. Anderson, Drusilla A. Fairbrother, Robert Wilson, Arthur T. Reeve, Annie M. Lackey, Emma Dennee, A. Howkins, Nellie Collins, Byron Webber, Alice Hickey, Frances Hollebone, Emily Bright, Maud Wheland, Flora Harrison, Fred Moore, Lily Easton, Alice Lester, Sophie Newmington, Russell A. Boss, Adolphus B. Pickett, Louisa Redmond, Hugh Barrett.

CONDENSED FACTS.—A man walks three miles in an hour; a horse trots seven; steamboats run eighteen; sailing vessels ten; slow rivers flow four; rapid rivers seven; storms move thirty-six; hurricanes eighty; a rifle ball one thousand; sound seven hundred and forty-three; light one hundred and ninety thousand; electricity two hundred and eighty thousand.

Home Kindergarten Methods.

Mrs. Crutcher asks about kindergarten methods at home. Yes, it is a splendid way to teach the little ones. I have tried it. You can wind some balls of different colors and teach them the colors. But to go backwards, get John to make a little table they can sit at in their little chairs, get him to cut a number of small sticks nice and smooth of different length, say two, three and four inches long, a handful of each. With these show them how to lay them down to form different shapes, always teaching them what they are as you go. Begin with a square, then oblong squares, three, five, six and eight sided shapes may follow then, houses, barns, churches, or anything your fancy may suggest. Teach them to count the panes in the windows, use the sash to teach them the difference between horizontal and perpendicular. You can cut triangles, squares and diamonds from colored pasteboard, buy some cardboard at any printing office, cut into any desired size and first tracing any simple form, as an apple, a pear, two or three cherries, a bird, morning glory and leaf, take a soft pine board to lay it on, take a big short darning needle, or better, get John to set one in a handle, and punch holes a short distance apart following the outlines, then give them to the little ones to sew with colored yarn. You can also prick squares of cardboard so they may be sewed in straight lines, squares, half squares and so on. You may get glazed paper of different shapes, cut a square say eight inches, and divide one way into even strips, leaving it intact about half an inch at each end, then cut strips the same width, and have John in again to make a needle of hard wood one-eight inch wide, flat and a splint in one end, the other nicely smoothed and rounded, then insert a strip of the paper and weave into the cut square over one, under one, then *vice versa*. This you may vary a great many ways as you will see. One who has means and lives in a city may obtain everything required ready to use.—[IMOGENE.

A Wonderful Clock.

Another great clock has been added to the horological wonders of the world—a piece of mechanism that will vie with the elaborate marvel of Strasburg cathedral, and put the processional curiosity of Berne Tower into the shade. The latest effort of the renowned Christian Martin of Villinen, in the Black Forest, is said in its way to surpass anything of the kind yet attempted. It is three and a-half metres high, two and three-quarters broad, and shows the seconds, minutes, quarter hours, hours, days, weeks, months, the four seasons, the years, and leap years until the last sound of the year 99,999 of the Christian era.

Moreover, it tells on its face the correct time for various latitudes, together with the phases of the moon and a variety of useful information generally confined to the pages of an almanac.

It also contains a vast number of working figures representing the life of man, the creed of Christendom, and the ancient pagan and Teutonic mythologies. Sixty separate and individualized statuettes strike the sixty minutes. Death is represented, as in Holbein's famous dance, in the form of a skeleton. In another part appear the Twelve Apostles, the Seven Ages of Man, modelled after the description of Shakespeare, the four seasons, the twelve signs of the zodiac, and so on.

During the night time a watchman sallies forth and blows the hour upon his horn, while at sunrise chanticleer appears and crows lustily. The cuckoo also calls, but only once a year, on the first day in spring. Besides these figures there is a whole series of movable figures in enamel, exhibiting in succession the seven days of creation and the fourteen stations of the cross. At a certain hour a little sacristan rings a bell in the spire, and kneels down and folds his hands as if in prayer; and, above all, the musical works are said to have a sweet and delicious flute-like tone. —[Exchange.

Pretty pigeons; what more appropriate pet for a little boy or girl. They are easily tamed, hardy, and become so attached to their house or cot. They will make flight of miles in length during the day, and always return home. In the States of Louisiana and Kentucky, millions of pigeons congregate in certain forests for breeding and rearing their young. The inhabitants shoot them in numbers, and when the young are about two months old the trees are cut down and the young pigeons killed for market. This wholesale slaughter carried on for so many years has diminished the number yearly, until now a flight of pigeons is a rarity. The domestic pigeon, with all its beautiful varieties, derives its name from the stock-dove, which implies its being the stock or stem from which other kinds have been propagated. I need not describe any of the different varieties here, they are too well known to all boys and girls; but those pigeons which are called carriers are easily distinguished from all others by their eyes, which have a broad circle of white skin, and their feathers a purplish black. Their capacity has been tested in yacht races, and they will always return from their trip safely. The letter is tied under the bird's wing, and, after feeding it well, lest it should stop by the way to eat, it is let loose to return. It flies to an amazing height upwards, then, with the greatest certainty and exactness, directs itself by some amazing instinct towards home. It is said that in the space of one hour and a half they can perform a journey of forty miles.

Pigeons will eat all sorts of grain, but their favorite food is peas. Their method of drinking is different from other birds; instead of sipping their water, as all other birds do, they bury their beaks in up to the nostrils and take a draught. They love to bathe, and can be seen splashing in a fountain basin, or washing their bright coats on the shore of a river in the sunshine.

What Shall the Children Read?

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

Much of the blame is to be traced to the mothers—too much indulgence from a mother has ruined more families than a father's harshness—bad books and bad companions being easy stepping stones to wickedness. A good mother will do a great deal towards forming her children's character. The first few years they are wholly under her influence, and she is all to them. Then the school life begins, and teacher and schoolmates broaden the view, but the mother must not relinquish her watchfulness, but interest herself in their studies, plays, companions, and make herself necessary to their happiness. Keep hold of the children; don't let them grow away from you. A mother should never grow old to her sons and daughters; be one of them and gain their confidence; be their companion, even if you lose the acquaintance of some of your own age. Better make good men and women of your children than be a leader of fashion. But about the reading, "What shall they read?"

If possible, select the books, papers, etc., yourself. You can easily look over the book notices in a weekly, and this usually gives a tolerably fair criticism of scientific works, biographies, histories and novels. Boys usually like tales of adventure, and in a reasonable amount they should be gratified, for what would a man be without bravery and courage? When my boys were at the age to be attracted to such reading, the principal of the grammar school they attended put a list of books on the blackboard for the use of such pupils as cared to profit by it.

There was the War of the Rebellion, Life of Washington, and others I fail to remember, but various kinds, and for light reading, one or two of Scott's or Dickens' novels. I always felt grateful to him and think the plan might be followed by the teachers.

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

Knowing When to Quit.

Time is valuable. To some it is, of course, worth more than to others, but every hour is worth something. If you are working for yourself, it is worth that something to you; if you are working for some one else your time is worth more than he is paying you, or the probability is that he would not keep you at work and continue to pay you wages.

It is hardly according to the average business habits of business men to employ help of any kind unless they are reasonably certain of making a profit from the work. Of course, they may not always succeed in so doing; other circumstances may be such that instead of a profit being secured they may suffer a loss. Your time belonging to another, it is but right and proper that you should employ it to the best advantage.

In a conversation with the manager of one of the best machine shops in the West, upon wages, he said: "We are obliged by our agreement with the Blacksmith's Association to pay a certain class of help certain wages per day; this irrespective of what they earn or what they are worth to us proportionately. Now, we have one man in particular who is fully worth twice as much as many of the other men who work at exactly the same kind of work and receive the same pay, and the whole secret is that he never strikes a blow too much. He works upon the iron until he gets it into the right shape, and then throws it down. Now, watch a number of the men at the same kind of work; they hammer away on the iron until they think it is the right shape and look at it to see if it is all right; instead of throwing it down they give it another blow, apparently for no other reason than to get to turn it over and strike another blow on the other side. This is just that much time lost to us, and yet nine-tenths of our workmen work after this plan; they do not know when to quit, and consequently lose valuable time, either for themselves or some one else."

And how many know when to quit? The salesman in selling goods, the lawyer in making his plea, the wife when remonstrating with her husband on some delinquency, all fail to realize when to quit; when all that is necessary to say or do has been said or done, and what is said or done afterward is a waste of valuable time that rightly belongs to some one else. They fail to realize the fact that time is more valuable than anything else, because once lost it can never be recovered, and that in everything, no matter how humble or exalted, it is very important to know when to quit; to economize time, whether your own or your neighbor's, and never waste it in striking a blow too much.

Hanging Pictures Properly.

No picture ought to be hung higher than the height of the average human eye when the owner of the eye is standing. It is the most universal rule in our houses to hang pictures much above this level, and they cannot be enjoyed there. If the picture is a protrait or it has human faces in it, its eyes should look as nearly into ours as possible; and if there be no such simple guide, perhaps a good rule will be to have the line that divides the picture horizontally into equal parts level with the eye. If one starts to hang pictures with the determination to place them so that they can be easily seen and enjoyed without stretching the neck in the least, or stooping the body, he will be pretty sure to do well.

In remote farm houses and country taverns we often see pictures, particularly portraits, skyed as high as if their owners had been academy hangers, and the painters young rivals of a new school. I suppose that the reason is that the owners think a picture such a precious thing it cannot be hung too securely out of the reach of meddling hands. They are often not clear in their minds as to what the picture is meant for, and not finding it in any particular relation to human life or society, they treat it with reverence and put it where it will disturb them as little as possible. But as people come to enjoy pictures and to get some intellectual, spiritual nourishment out of them, they want them as they want their books, where they can see them and use them.—[Exchange.

NEW ADVERTISEMENTS.

ADVERTISING RATES.

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

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

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

SPECIAL NOTICE.

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

Notices.

PERCHERON HORSES AT TORONTO FAIR.—Savage & Farnum, of Island Home Stock Farm, Grosse Isle, Wayne Co., Mich., importers and breeders of Percheron horses, have entered thirty-seven head of registered Percheron stallions and mares. This is the largest entry of horses ever made in Canada by a single firm and the largest number ever made in United States or Canada except at one fair, and there, out of fifty-two exhibitors, Savage & Farnum showed one-tenth of all the horses that were entered and were awarded twenty-two percent of all the prizes. Both Mr. Savage & Mr. Farnum will be at the fair with their horses during the Exhibition and will have comfortable quarters fitted up in which to meet their friends and visitors.

We have just received from Messsrs. A. Judd & Co., of New York, a work on practical floriculture, a guide to the successful cultivation of florists' plants, for the amateur and professional florist, by Peter Henderson, author of "Gardening for Profit," "Gardening for Pleasure," "Hand-book of Plants," "Gardening and Farm Topics," "How the Farm Pays," etc. We have much pleasure in recommending this work to our subscribers, and would advise all who take pleasure in floriculture to procure a copy, as it contains valuable information.

We have received Volume II. (bulls and cows), of the Holstein-Friesian Association of America, issued by the Secretary and Editor of the Association, Mr. Thomas B. Wales, Jr., Iowa City, Iowa. The volume of registered cows embraces those between Nos. 3,161 and 6632 (both inclusive) and contains 749 pages; and the volume of registered bulls No. 2,528 to 5,475, containing 689 pages. The books are elegantly bound, and make a handsome addition to an agricultural library.

HARVEST EXCURSIONS.—The Burlington Route, C. B. & Q. R. R., will sell, on Sept. 20, and Oct. 11, Harvest Excursion Tickets at one fare for the round trip to principal points in Nebraska, Kansas, Minnesota and Dakota. Limit, thirty days. Tickets and further information may be obtained of any C. B. & Q. Ticket Agent, or by addressing Paul Morton, Gen'l Pass. and Ticket Agent, Chicago, Ill.

ARTISTIC HORSE-SHOEING.—A practical and scientific treatise, giving improved methods of shoeing, with special directions for shaping shoes to cure different diseases of the foot, and for the correction of faulty action in trotters, by Prof. Geo. E. Rich. Illustrated. Price $1. M. T. Richardson, publisher, 57 Rose Street, New York City.

The A. B. C. of Bee Culture has been received. This is an excellent work on the honey bee. It treats upon a great number of subjects. Care of bees, honey, hives, implements, plants, etc., etc. It is well illustrated throughout, and should meet with good sale. Mr. A. I. Root. of Medina, Ohio, is the publisher.

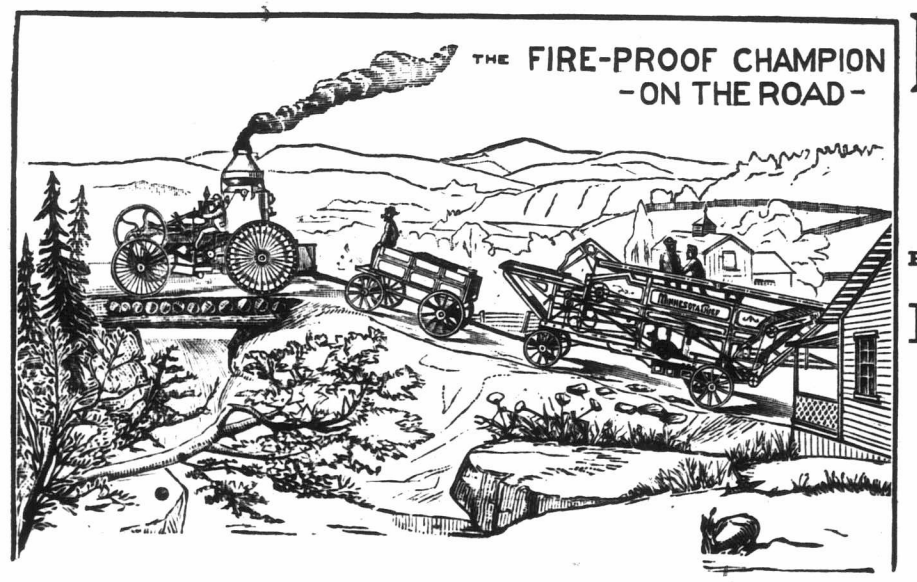
The record of the Ontario Business College, Belleville, is a remarkable one. We are informed that no less than eighteen States and Provinces have been represented among its five thousand students. There are now in attendance young men from the States and Provinces.

We have received the fifth annual report of the Ohio Agricultural Experiment Station (1886), which contains a full account of the numerous experiments conducted at that station and other useful and valuable information.

Received the seventh annual report of the New Jersey Agricultural Experiment Station (1886), containing accounts of valuable experiments and other useful matter.

North Dorchester Agricultural Society will hold their annual fair at Dorchester Station, on Wednesday, 12th Oct., on their own grounds.

Sample copy of Farmer's Advocate and Home Magazine sent free upon application.



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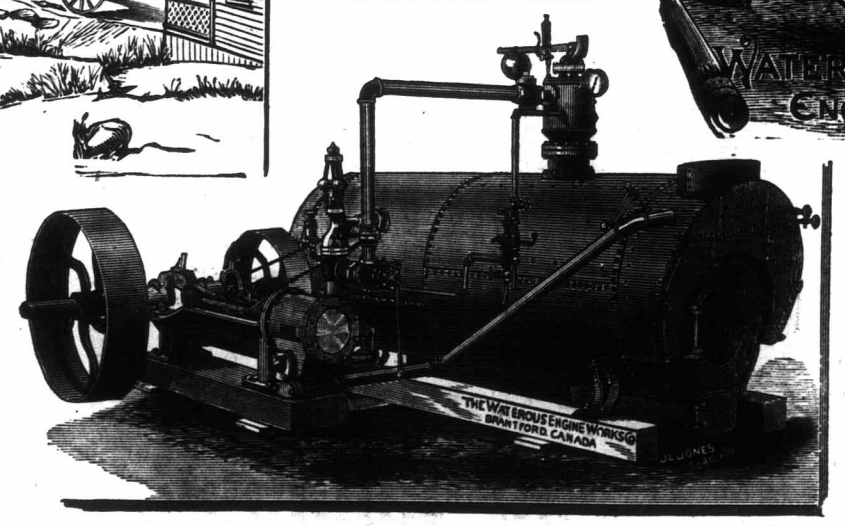

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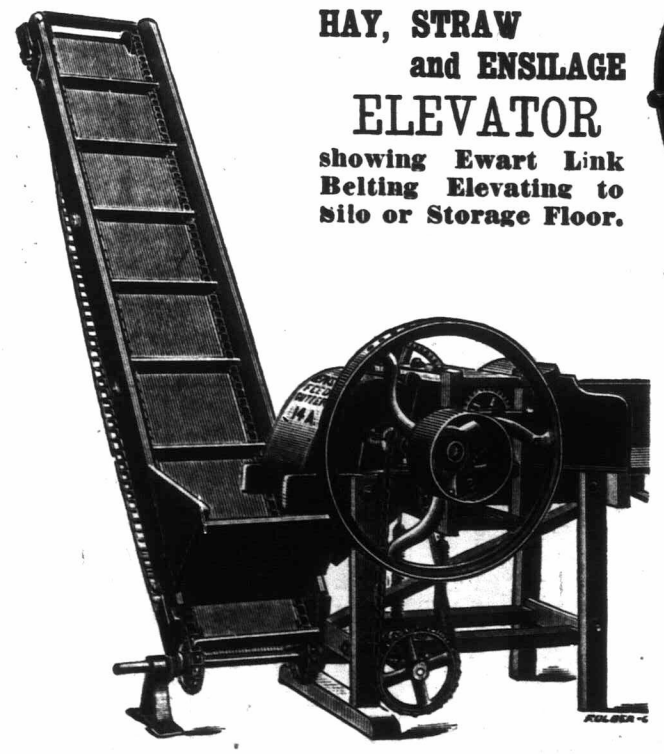
See our Saw Mills and other Machinery in operation at Toronto and Quebec Exhibitions this Fall.

Steam Threshers should remember that our SHINGLE MILLS and CHOPPERS represent a Small Investment, Easily Managed, Good Profits and Quick Returns.

Send for Circulars stating wants.



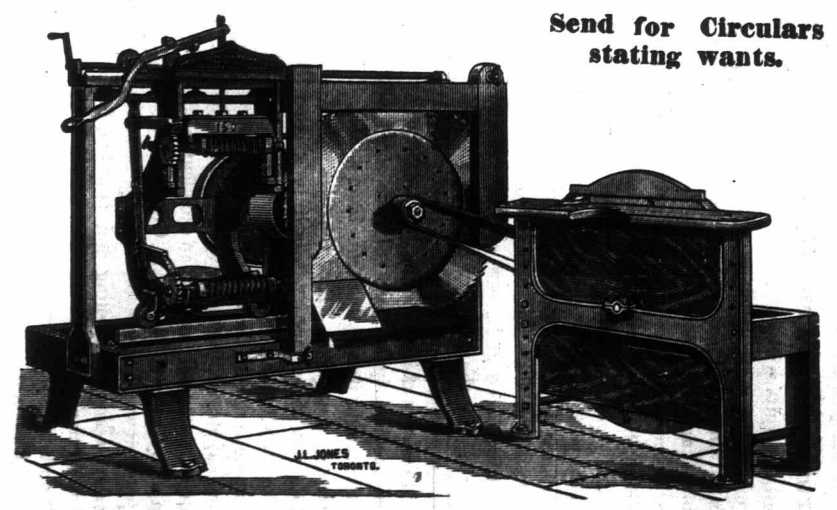
HAY, STRAW and ENSILAGE
ELEVATOR
showing Ewart Link Belting Elevating to Silo or Storage Floor.

25 H. P. PORTABLE ENGINE FOR ANY USE.

STANDARD CHOPPING MILLS,

Guaranteed to grind any kind of grain, fine or coarse, equally as well, as a four foot mill stone.
WATEROUS ENGINE WORKS CO., BRANTFORD, CANADA.

SEE OUR NEW
CORN COB CRUSHER
15 to 20 bush. per hour.
261



WATEROUS ENGINE WORKS CO.
BRANTFORD, CANADA, AND ST. PAUL, MINN., U. S. A.