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# THE FARMER'S ADVOCATE

AND HOME MAGAZINE

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No. 360



A FAMOUS BROWN SWISS COW.

See page 238.

## EDITORIAL.

## The Brown Swiss Cattle.

Though only about one-twelfth the size of the Province of Ontario, the little European Republic of Switzerland has exported in a single year as much as over 1,800,000 lbs. of butter, over 25,500,000 lbs. of condensed milk and over 57,000,000 lbs. of cheese, some 17 different kinds of the latter, exported to most of the civilized countries of the world, being manufactured. Besides this, large numbers of cattle for breeding and other purposes are exported. The milch cows of Switzerland number over half a million, belonging chiefly to two distinct breeds, which in certain essential qualities are unsurpassed, if equaled, by any other bovine races in Europe. One of these is the "Spotted" race (Bernier Spotted), Simmenthal or Saanenthal cattle, and the other the Brown Schwyz race, bred for many centuries in the Cantons of Schwytzer, Uri and Zug, and in fact they have spread through the whole mountain region of Switzerland. This breed is the best known and most largely exported of the two pure breeds of the Swiss cattle. Briefly put, their leading characteristics are:—

- 1st. Good milking qualities.
- 2nd. Perfectly mild disposition.
- 3rd. Adaptability to most climates, localities and foods.
- 4th. Its beauty of form and color.

After making most careful investigations, U. S. Consuls in Switzerland agree in reporting that a good Brown Swiss cow will average for 365 days in the year not less than 10 quarts of milk daily, and that on grass and hay alone. This is not an exceptional rate resulting from special care and special feeding, but the average of thousands of cows taken from whole herds. For example, the 6,000 cows (ordinary animals of the breed) supplying the Anglo-Swiss Milk Condensing Co., at Cham, yield on an average 9 1/2 quarts in the milking season, but choice herds average far more than that. She is a large, plump cow, averaging from 1,200 to 1,400 lbs. in weight. The percentage of fat in the milk ranges from 3.3 to 4.5, so that not only is the quantity large, but the quality excellent. Experienced Canadian breeders at the World's Fair last year were most favorably impressed with the appearance of the exhibit of these cattle.

Our front page illustration in this issue is of a well-known imported Brown Swiss cow, but the artist and the photographer have not done her justice by any means. Further reference to her is made, in the following sketch concerning this breed, written for the ADVOCATE by Mr. N. S. Fish, Groton, Conn., Secretary of the Brown Swiss Cattle Breeders' Association of the United States:—

"The Brown Swiss cattle, which are attracting much inquiry at this time, are a large-sized animal of fine form and proportions; color from light to dark chestnut-brown or mouse color; white spots are not often seen except on the bag or under the belly occasionally; horns rather short and waxy, with black tips; nose, black, surrounded with a mealy-colored band, sometimes running up the sides of the face; black switch, hoofs and tongue; hind legs noticeably straight. They have a healthy, vigorous constitution, are gentle and hearty, not over dainty feeders, yielding generous returns for care and feed. They endure cold, having a fine silky, thick coat of hair, and are persistent milkers, frequently giving milk up to calving. The Brown Swiss cattle in America are mostly from the famous Canton of Schwytz, where they are kept in summer on the mountains Rhigi and in the valleys in winter. Having been thus raised, they are inured to cold and storms, are not subject to disease, and it is said there has never been known a case of pleuro-pneumonia in Brown Swiss cattle. They have fine well-shaped udders, good-sized teats and are extremely even in appearance, and for crossing give as good results as can be desired. The surplus in Switzerland are in demand to improve the cattle in Germany, Italy and France. In some of the dairies for infants they use them in preference to all other breeds. In the report of a dairy for infants, in Dresden, Dr. Chalbans says:—"In selecting cows for an infant's cow stable we must look for especially healthy cows, and an excellent quality of milk," and, concludes his report, "The healthiest breeds of cattle are the mountain breeds, and above and before all we name the Brown Swiss cattle as strong and thoroughly sound, and totally free from all pleuro-pneumonia." At the International Show of Paris, 1878, every Swiss cow exhibited bore away a prize in competition with exhibits from Holland, England, Denmark and other famous cattle countries. There have been several importations into the United States of small lots. The number registered in the Herd Record for America is now about 1,600, and they are owned in almost every State and some in Mexico. They stand the climate well in all sections. They are particularly adapted for butter-making, the cream globules being large, churn

easily and quickly. When properly handled the butter is of good color, fine nutty flavor, delicate and sweet to the taste. The milk has a rich, sweet taste, and for selling for family use will give the best of satisfaction. There was a cow shown at the Fat Stock Show, at Chicago, in November, 1891, which in an official trial gave in three days 245 lbs. of milk, containing by the Babcock test 9.32 lbs. of fat. The first day her yield was 81.5 lbs. of milk, containing 3.25 lbs. of fat, and was the greatest yield of fat ever recorded in any official test from any breed up to that time, so far as I can learn. A record of another Brown Swiss cow (not official) shows a yield of 86,304 lbs. of milk in ten years. She made in one year 610 1/2 lbs. of butter. Another from Oct. 15 to June 15 gave 9,207 lbs. of milk. The last named cow gave 50 1/2 lbs. of milk, January 23, 1894, with good farm care and feed. [A portrait of this cow appears in our illustration.] The calves are large and strong, sometimes weighing at birth 110 lbs. They grow and mature rapidly. Cows weigh from 1,100 to 1,200 lbs. and some 1,600 lbs. And for working oxen, they are easy to train, learn quickly, are strong and very fast walkers. The grades show the Swiss blood, and make beef of the best quality—heavy in the back, loin and hams. All breeders agree that no breed show more good points than the Brown Swiss cattle."

## Haymaking.

As farmers will soon be busy at hay-harvest, a few words on this important subject will be in order. Be sure and have everything ready before the rush begins. Take some rainy day and get the knives ground and all repairs made, the mows cleaned out, the forks hunted up, the hayfork, if one is used, put in readiness, the car oiled, the pulleys and ropes hung in their proper places. Do not wait until there is a load in the barn and then find that the rope requires splicing or that a new one is needed and thus lose half a day of good weather.

Though the principles of haymaking are few in number and easily understood, they admit of many variations, and nearly every farmer has his own way of managing his hay crop.

It is often stated that hay should be so made that it is dried grass. Though this idea, at first sight, appears reasonable, still the conceptions of hay and dried grass are quite distinct in the mind of the practical farmer, for grass, which has not attained its full growth, makes a soft non-nutritious feed, hence the popular conviction that horses need old or riper hay.

## TIME TO CUT.

In order to obtain the best hay, the grass should be cut at the time when it contains the greatest amount of nutriment, and the crop should be secured with as little waste as possible. If the hay is cut too soon, the yield will be small, and the feeding value will be less. Another disadvantage of early cut hay is, that it will be so full of sap that, unless the weather is very favorable, it will be almost impossible to cure it properly, though with the introduction of improved tedders and horse-rakes, this objection has less weight.

It has been found that at about or shortly after the full bloom, the plant has drawn all the substance that it can take from the soil, so it will easily be seen that there is a direct loss if cut before this period.

After the period of full bloom, the stalk increases in weight and becomes dryer, but it is owing to the carbon which is taken from the air. This process changes the digestible cellulose into the more indigestible woody fibre. If a farmer were selling hay, it might pay as well to let it stand somewhat longer than it would for his own use, for he would get a greater weight of hay, which would sell for nearly as much as earlier cut hay.

Another disadvantage of late cutting is, that a large proportion of the nutritive material is deposited in the seeds, which, owing to their small size, are liable to be shelled out and lost, or if saved and fed, being so small to be thoroughly masticated, will escape digestion.

Practical men say that when about one-half the heads of the clover plants turn brown, it is fit to cut. Timothy they would prefer to cut when it is in what is called the second flower.

## WASTES IN HAYMAKING.

There are many wastes to be guarded against in the proper curing of hay. Late cutting is one of these: for very few people will begin cutting their hay early enough, and before they are through the latter part will be so ripe that it will be little better than straw. Another waste, and one which should be guarded against in clover, and especially if it has been cut on the ripe side, is from the shaking off of the foliage and the fine leaves, which are the richest part of the plant in nitrogen. Other wastes are the washing out of the soluble parts by rains, and the moulding and rotting due to insufficient curing.

One of the chief remedies against washing by rains is the improved machinery, such as tedders, horse-rakes and loaders, by means of which the hay is dried so rapidly that it is not necessary to cut down much at a time. Many farmers, nowadays, do not cock their hay—deeming it a waste of time. Both science and practice agree that where hay is put into cock, it is possible to make the best quality of hay. But in this country, where the weather is so uncertain, the rule to go by is not

to cut down more than can be handled easily at a time, and to get it into the barn as quickly as possible.

The improved agricultural implements of the present day, including mowing machines, tedders, horse-rakes, loaders, hay-forks and slings, not only facilitate the hay-curing process, and thus obviate loss in quality by the grass becoming over-ripe before cutting, or exposure to rains after being cut, but are also a great saving of labor, time and expense, and the best of such machines are not only exceedingly useful, but also a necessity in the economy of every well-managed farm. A good tedder will toss the grass lightly, exposing it to the sun and air, and leave it in a loose mass upon the ground, allowing it to dry rapidly, thus conducing to improvement in the quality of the hay and adding to its value; for the sooner the curing process can be completed, the better the quality of the product.

Hay, as a rule, should be housed the day after cutting, if possible. Of course, much will depend upon the temperature and state of the atmosphere in curing grass, even on a bright sunny day.

If the hay is cut after the dew has dried off, start the tedder as soon as the grass begins to wilt, and turn it frequently. In this way the hay may be sufficiently dried to rake up and draw the same day. If the grass is very green and heavy, or if the weather is unfavorable, the above could not be done, and a somewhat longer time would have to be given to the curing process. When it is thought best to cock hay, the use of hay caps will be found advantageous. A very light, easily-handled cap is being manufactured out of paper, which appears to fill the bill, and does away with weights, pegs or any other method of fastening of the caps.

Prof. Robertson has ascertained that by churning sweet cream at 46 degrees temperature all the butterfat can be recovered; but it takes about 30 minutes longer to do the churning. Ripened cream he churns at from 54 to 55 degrees in summer and from 58 to 60 degrees in winter.

It has been demonstrated by practical experiments that 100 pounds of sand will absorb 25 pounds of water; 100 pounds loam, 40 pounds; 100 pounds clay loam, 50 pound; 100 pounds clay, 70 pounds. This explains why some soils always appear dryer than others, why some soils will stand a drought so much better than others, and why, after a shower, some soils become like a thick paste, while others are only comparatively damp.

The new appropriation bill for the maintenance of the Agricultural Department of the United States carries a total of \$2,240,000, being nearly \$100,000 less than for the current year. The Bureau of Animal Industry is to receive \$500,000, and tuberculosis is added to the list of diseases of animals, to prevent the spread of which the Secretary of Agriculture is authorized to use any part of the sum. The sum of \$10,000 is set apart for the purpose of making inquiries in regard to the system of road management throughout the United States.

The resignation of Prof. C. V. Riley, Ph. D., for many years head of the Bureau of Entomology at Washington, when made public some weeks ago, created much surprise. In a letter to the public Dr. Riley states that this action was due to a regard for the wishes of his family, for the sake of his health and for his peace of mind. He states that he can never lose his interest in the subject of entomology, and relieved of the drudgery connected with office work, he hopes, in connection with the honorary curatorship of the Department of Insects in the U. S. National Museum, to be able to do some long-contemplated work of a purely scientific character.

The well-known writer on economic subjects, Mr. Edward Atkinson, has a somewhat remarkable paper in the May number of The Forum, on the subject of The True Meaning of Farm Mortgage Statistics, from which we take the following extracts:—"There are within the United States 4,564,641 separate farms, averaging about 137 acres each, of which, in the Eastern, Middle, Western and Pacific States, 80 per cent. are occupied and managed by their owners. Far more than half these farms are free of any mortgage whatever. The rest are mortgaged for far less than half their value. Only about one-third of the area of the United States (exclusive of Alaska) or, in all, 623,000,000 acres are occupied, assessed and valued as farm property. This is divided up as follows:—There are 1,300,000 farms under fifty acres, nearly the same number between 50 and 100 acres, 2,000,000 between 100 and 500, and 31,500 over 1,000 acres. During the last ten census years—1880-1889 the mortgage indebtedness has increased 156 per cent. on all these farms. But the production of grain has only increased 43 per cent. The national debt has decreased in almost the same proportion as the mortgages were increased, viz., 157 per cent."

**THE FARMER'S ADVOCATE & HOME MAGAZINE**

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**A Double Benefit.**

The time to kill weeds is before they are visible. Then the least disturbance of the soil by means of a light harrow will bring them to the surface, where they perish immediately. A shower coming an hour after is too late to help or save them, and the loosening of the surface makes the crops grow vigorously. Thus frequent cultivation of such crops as corn and potatoes will keep the land free of weeds, and make it absorbent and retentive of moisture. This is the most effective way to grow large crops.

**The Horn Fly.**

The horn fly pest is already very bad in some localities. When the flies are at their worst, it has been found necessary to spray cattle with the ordinary kerosene emulsion every two days. Prof. Fletcher, of the Experimental Farm, Ottawa, has found that Tanner's oil, containing some carbolyzed oil, or oil of tar, is more lasting in its effects, but takes longer to apply and requires much greater labor. Train oil or fish oil alone, or train oil or lard, with a little sulphur, oil of tar or carbolic acid added, will keep the flies away for five or six days.

**Our Common Schools and Farmers.**

From the New England Magazine, March, 1894.

BY E. P. POWELL.

The following article was recently published in the New England Magazine. It is so much to the point that we decided to reproduce it.

Canada, especially the older provinces, suffer from the same conditions as prevail in New England. The remedy suggested appears to be the chief or only one which will permanently benefit the country:

"The difficulty with agriculture is two-fold,—farming does not pay, and farm life is not attractive. The result is that our population, which one hundred years ago was ninety per cent. agricultural, is now but little over sixty per cent. such; and the ratio is decreasing. The national pride in vast cities is an error of judgment. Any one of our metropolitan cities might be reduced one-fourth in size without loss to productive capital. Deduct the dependent and criminal classes of New York, and you bring down your census by two hundred thousand. The first great break with barbarism was when land tilling began to create permanent homes and the home instinct; and the next was when each family could have its separate house and its individual tastes. Any reaction toward the herding instinct is a movement backward; and our efforts as social reformers should be exercised to prevent such a tendency. If you ask the lower classes in our cities why they are there, and why they endure such pinchings of penury, and if you further urge on them to accept your help to secure a home in the country, you will find as a rule that they cannot endure the loneliness of dissociation. They are like your domestic animals, or the sparrows in the eaves. Our cities are not filled with foreign influence altogether; even the tenements and cellars are populated largely by our own native-born people. When we come to a consideration of the problem of capital and labor, and the friction of competition so bitterly complained of by Mr. George and Mr. Bellamy, we find that the worst elbowing is done in the undifferentiated masses, not by individuals sharply separated by skill and knowledge. It is a mistake to assert that we are living in an age of individualism; we have hardly touched the threshold of individual character. It is a question of supreme importance whether American life has not of late been moving toward the mass, and not toward the man.

I do not see that I can emphasize the danger to which I desire to call attention better than by going back to Thomas Jefferson and the founding of Democracy in 1800. It was Jefferson's profound conviction that agriculture must underlie a republican government as the basis of prosperity. "The American people," he said, "will remain virtuous as long as agriculture is our principal object. When we get to be piled upon one another in large cities, as in Europe, we shall become as corrupt as they." The very key to a possible republic lay, in his judgment, in the tillage of land, as predominant over commerce and manufactures. In his maturest years he wrote as follows: "It is by dividing and subdividing republics from the great national one down through all its subordinations, until it ends in the administration of every man's farm by himself, by placing under every one what his own eye may superintend, that all will be done for the best. What has destroyed liberty and the rights of man in every government which has ever existed under the sun? The generalizing and concentrating all cares and powers into one body, no matter whether of the autocrats of Russia or France, or of the aristocrats of a Venetian senate. And I do believe that if the Almighty has decreed man shall ever be free, the secret will be in making himself the repository of powers respecting himself, so far as he is competent to them, and delegating only what is beyond his competence." Jefferson would certainly, if allowed to reappear to survey the American Republic, warn us that we had, while becoming powerful as a nation, lost power as a people; that we had gone far to undermine our Republic by forsaking our fields and becoming "piled upon one another" in great cities.

But we are at once answered that, however dangerous this may be to republicanism and individualism, it is nevertheless a natural drift of events; that farming does not pay,—and no influence can keep a people at an occupation that is not remunerative. We might ask the counter-question: Do cities pay? Is it profitable, even from a material point of view, to crowd into municipalities? Do most of those who desert the farms prosper in the avenues of trade? Morally and socially, the exchange is disastrous for the majority of our young

people. Statistics show that three generations of city life exhaust vitality, and that our cities must be steadily fed by an influx from the rural districts. Most of this influx, however, is simply absorbed and lost. It is fed to the octopus of vice and beggary and disease and general want. On a farm a failure is seen, while a lad who is lost in the city drops out of sight, and reappears only in the potter's field.

The city is not a natural product. Its crowds are not needed for the mechanical industries. The bulk live from hand to mouth. At least one-fourth can be dispensed with economically. The whole system is false. We mass our people, and then carry food to them at vast expense and waste. The key to prosperity is not in the distribution of products, but in the distribution of consumers.

There is a story of some college boys who were off for a Saturday's outing. They wished to show their wit and knowledge at the expense of a farmer whom they met. At last he turned on them: "Very well, gentlemen, now let me ask you one question: I see you have killed a snipe. Can you tell me whether that snipe is a bird or a fowl? Will you tell me what is the difference between a bird and a fowl?" The boys tried in vain to invent some definition which should accurately classify snipe, turkeys, quail, hens, sparrows and geese. Snapping his finger at their classical learning, the farmer informed them that "a bird takes food to its young, but a fowl takes its young to the food." Our cities are built on the bird plan; our farms run on the plan of the fowls. We cover our land with costly railways, to enable us to convey sufficient food to the crowded cities; that is, we have our food in one place and our mouths in another. We are doing the sparrow trick too largely in proportion to the turkeys. We are educating our young folk to desert the farms and squeeze into blocks, and to lose their individuality by becoming bits of the mechanism of urban life. Not one in a hundred gets rich—not one in twenty gets a competence.

But farming does pay; it is paying; that is, in right hands, with right methods. Whole counties of New England, that were deserted practically by our own farmers, are taken up by Canadian French, and they are thriving. I have seen the old Yankee stock that came to Central New York, up the Mohawk Valley, run out, mainly by Irish people. These, in turn, gave way to Germans, who will doubtless in a couple of generations yield their titles to others. So long as any race holds to old-fashioned culture and methods of life, all goes well; but by and by the new ideas and new methods are inevitable, and then there is a lack of something. They are unable to readjust themselves to the new order. But we cannot expect to resurrect the eighteenth century. We must find out our difficulty; and that is, as I shall aim to show, that our common school education is almost precisely what it was one hundred years ago, and in no way fitted to the other revolutions in farm life.

Our fathers on the farm were producers in the main for home consumption. Each homestead was expected to be self-supporting, or nearly so. Wives wove, knit, sewed, cooked, dyed, made soap and candles; husbands not only ploughed, but made their own shoes, cut their own fuel, and mended their own simple machinery, as well as built their own houses. Each farm raised nearly all that was eaten, worn, or enjoyed. Little was sold; little was bought. There was swapping of surplus among neighbors; and wheat, corn, oats, rye, were in each man's private bin. But to-day the farmer everywhere is a trader. In Dakota he raises his truck for Chicago, his wheat for London, his corn for New York. On the other hand, he buys his fuel, lights, clothes, most of his food, and his comforts. This flings him in with the world of speculators and adventurers. The farmer deals in futures as much as the Chicago dealer who buys October corn in July. On the old plan the farmer was everywhere moderately successful. He was educated for that style of work and to be content with that style of life. Now machinery has elbowed him out of his pride, skill, and art; and his wife also is left without her craft. He no longer swings his scythe with pride, or his axe with rhythm. She does not sew and knit. He buys coal, and has hung up his bucksaw forever. She buys stockings, and the old spinning-wheel is an object of curiosity.

The change involves new needs, new desires, new methods. The farmer who handles money instead of household material, and who speculates in crops, as all farmers now do, learns to need fine horses and carriages, handsome houses and barns, and costly tools. The wife learns to require costly dresses, pianos, furniture that is fashionable, literature, and art. Education becomes costly; and when the children get it, they push off from the farm for the city. A few farmers get rich, exactly as a few Board of Trade men amass wealth; but the bulk grow poor, and most of them ultimately dwindle away. I can find barely a dozen old families in my own township who "hold on," readjusting themselves to the changes. This is the story everywhere. It is impossible to make the farm universally profitable on such a system. Many move West, or move on; lose the home instinct, and create a migratory sentiment. This is not a desirable sentiment to increase.

The bottom of the difficulty is not some mystery; nor is the cure some nostrum in the way of statute

law. The secret is that our common school education is not adapted to create a race of farmers capable of adjusting themselves to the times. We are educating away from the farms, and not toward them. Emerson says: "We are fired with the hope to reform men. After many experiments, we find that we must begin earlier—at school." That is what we come back to each time that we attempt social amelioration. The solution of the labor problem is not in legislation, but in improved tact and skill in the blood and in the fingers of the laborers. The marriage problem will be settled, not by layer on layer of laws, but in a higher moral education of boys and girls to comprehend the purpose of life as altruistic instead of egotistic. The farm perplexity is in a peculiar manner dependent upon defective education. So long as the old order of things existed, the curriculum of common education was satisfactory. The farm boy of the early part of our century had two sorts of education; one half of it was home training, the other half was from the schools. At home he had manual culture—he was taught to handle tools such as were used, and to be proud of his skill; he must hoe his row, and turn a straight furrow, and mow a clean swath, and know the knacks of plain farming. At school all he needed was the three R's; and those he got. A peculiarly talented boy, or one all brains and no muscle, went over to the parsonage, and was fitted for college. The farm boy only needed to read, to write, and to cipher; the rest of his education was on the land.

But note how total is the change. That part of the boy's education which consisted in skilful handling of the scythe and axe and other tools is useless and vacated. So far as the three R's are concerned, they can mostly be taught at home. *What we want of our country schools is to make the farming to-day intelligent, interesting, and profitable.* The boys and girls should first of all be taught the composition of the rocks and soils with which they have to deal. This should be complemented with a good knowledge of plant and animal life. I suppose that no one could be more ignorant of these things than the average farmer. He is in no case taught in the common schools the structure of the animals he employs, or the grains that he eats. Geography gives a knowledge of the surface of the earth in general; it points away from the farm. Geology gives a knowledge of the earth under foot, the farmer's own immediate property; it makes every grain of sand and every granule of clay interesting; it opens the eyes to ten thousand things the farmer must daily touch and see. Yet the farm children have geography and not geology. No one surely would condemn geography, no one would shut in or circumscribe the farmer's interests; but I plead for the other. Geology I would follow with biology in its forms of zoology and botany, and in its divisions of physiology, entomology, and ornithology; that is, I insist that our country schools shall undertake to make farmers. The boy on the farm—and the girl, quite as much—needs to know the things under his feet and over his head, the soil, the life in and on the soil, and his relation to them. He should understand a cow and a horse in their zoological relations, and, to some extent, anatomically. I am considering the broadening out of farm life, and the awakening of interest in those things that make a part of the farmer's daily life. *As the schools are, whatever is taught points to the store and the city, and not to the farm.* A college professor said to me: "We can do very little in the way of putting more science into the college curriculum until the high schools are revolutionized, and that requires a preliminary change in the common schools." Before the age of seven or eight, in well-to-do families, where kindergartens are impossible, the child should be taught chiefly to observe. He should learn to see well and to use all his senses. After that age books should be used as aids to observation; not to dispense with original observation, but to assist. Every child should become an investigator. When this change is made, and the curriculum is readjusted as suggested, I do not say that you cannot drive our boys away from the farms into trade and manufacture; but I do say that, unless a lad is born with a particular bias for something else, *he will love the land so that he will not wish to leave.*

So utterly impossible has it been for myself to secure my children what I call a rational education, that I have done what I regret many more do not do or cannot do,—have built a laboratory and employed private tutors. Here they enjoy with a zest drawing, geology, biology, chemistry, mathematics, and music, with, as far as possible, field work. These studies are followed by a general knowledge of life on the globe as well as the history and science of human language and thought. At this point geography becomes a rational part of education. The result has been more than satisfactory. They love the land, and the things of the land. I am confident they will never consider land culture inferior to traffic. Their minds are here because their acquaintances are here. Their souls are with the birds, the plants, the animals, the bugs. They also escape that fatal vacuum which is created by a school system that omits moral culture, a vacuum quickly filled with an inrush of immoral emotions, and by premature knowledge of sexual impurities. Home education should be widened to the utmost possible limit, and no system of public schooling should be tolerated that omits moral training.

(TO BE CONTINUED).

### Work at the Ontario Agricultural College.

Work, with the exception of corn planting, which almost continuous rains had delayed for nearly a couple of weeks, was well forward at the Ontario Agricultural College Farm, Guelph, when visited by a member of the FARMER'S ADVOCATE staff on the 26th of May. The growing field crops, including the experimental plots, were as a rule in excellent condition, despite excessive wet and backward weather. Some idea of the magnitude of the experimental work carried on may be inferred from the fact that there are some 1,500 or more plots devoted to that purpose.

**Experimental Work.**—In all the work of testing varieties, methods of cultivation, manures, etc., the general plan seems to be to attain results that will be permanent in their character. This is certainly far better than attempting to hurry through an immense number of experiments that simply make a show on paper. Ample time should be taken to verify (repeatedly and under varying conditions) results, more especially if the first showing is one that might lead others to expect phenomenal results. Varieties that do not seem desirable are being sorted out and in due time discarded. By a more careful system of selecting seed grain, there is no doubt that the outstanding excellence of varieties can be much longer perpetuated than is too generally the case. New sorts become necessary from time to time if the best results are to be secured, but a continuous dabbling in all manner of novelties is an unprofitable and unsatisfactory extreme, just as is the practice of sticking to "run out" varieties. We would commend heartily the idea of devoting more attention to improvement and the maintenance of desirable qualities by means of seed selection, various methods of seeding, cultivation, etc. Nothing has yet been attempted in the way of hybridizing, but something in that direction is under contemplation. The Experimentalist has done wisely, we think, to enlist the co-operation of ex-students and other farmers all over the Province in the testing of a few of the more promising sorts of grains, roots, etc., in order that their general excellence may be determined.

**Improvements.**—Numerous improvements have been made about the grounds and buildings since the writer's last visit, and others are now in progress. Another effort (with better prospects of success than those in previous years) is being made to drain a low-lying area in a field south of the main barns. The long-deferred levelling of the slope in rear of the barns and College is now being accomplished and small clumps of evergreens, to improve appearance from a landscape standpoint, are being planted.

On what may be called the Dairy School Farm great changes are noticeable. We might say the equipment for dairy work is most complete, both for the regular course and for the Farm Dairy Department, where farmers' sons, daughters and others have the privilege of going for a short course of instruction in practical dairying.

Only one travelling dairy is out this season. It commenced in Halton; next going to Peel, and thence to York County. Prof. Dean has been in charge, but on his return to the College it was arranged that Mr. F. J. Sleightholm, a farmer from the County of Peel, should take charge. Mr. Sleightholm took the gold medal at the completion of the Agricultural College course for associate diploma, and recently passed the last of a long series of examinations for the degree of B. S. A. in the University of Toronto. Prior to going out with the travelling dairy, he spent some time in the Experimental Dairy. Mr. J. Hume was chosen as his buttermaker.

Prof. Dean has inaugurated a series of experiments in the cheesemaking department to determine whether the quantity of cheesemilk made from milk varies in proportion to the amount of fat in the milk.

Among other experiments being carried out at the Dairy Farm is one to compare the results of feeding swine sweet and sour milk. Thus far, those receiving the sour milk were reported doing best.

**Sheep Husbandry.**—Not long ago the sheep shearing and putting up of the fleeces for market was done by students, under the directions of Mr. Wm. Rennie, the Farm Superintendent. That the work was well done may be seen from the following statement which we have received from Mr. John Hallam, wholesale wool dealer, of Toronto:—

"Your letter came to hand with reference to the 105 fleeces from the Agricultural College Farm at Guelph. The wool was well grown and got up free from chaff, straw and burs, and full of yolk. The fleeces came to me all ticketed with the name of each breed. I counted the fleeces out and weighed each kind separately, with the following result, with the exception of the 29 fleeces which were of Cotswold, Leicester and grade ewes:—

No. of Fleeces	Name	Weight	Average Weight	Price	Total Price per Fleece	Average Price per Fleece
7	Hampshire	46 lbs.	6 1/2 lbs.	12c.	85.32	78.67c.
11	Suffolk	37 "	5 2/3 "	12c.	6.81	62.21c.
7	Southdown	37 "	5 2/3 "	13c.	4.81	68.57c.
23	Shropshires	176 "	5 7/8 "	12c.	21.12	91.19c.
7	Oxford	77 "	11 "	12c.	9.24	132c.
19	Dorset	109 "	5 1/4 "	12c.	13.08	68.61c.
29	Fleeces	390 "	10 1/2 "	10c.	30.00	103.13c.
					\$90.61	

**Poultry Department.** The new poultry building is to be completed and all ready for work this fall. Students entering in October will receive lectures and practical instruction in this too much neglected branch of farming.

**Short Course for Public School Teachers.**—It affords us pleasure to announce that arrangements have been completed for another term this season of the "Summer School for Teachers," so successfully inaugurated last year. There is an increasing demand for intelligent agricultural education. The public school teachers and educationists are wise in thus availing themselves of such advantages as the College affords, and equipping themselves in advance for this trend of education. On general principles, any teacher will realize great advantage from a month spent at the Agricultural College. The surroundings at the College, and, in fact, it might be said of Guelph generally, are delightful, so that no mistake would be made in going there even for a vacation, not to speak of the educational advantages to be derived at such a splendidly-equipped educational institution, with its well-managed farm, arboretum, gardens, greenhouses, chemical laboratories, etc. The object of the course is to show how agriculture and kindred branches of knowledge may be taught by simple talks to pupils in rural schools, and to furnish information that will serve as a basis for such talks—say the last hour of each Friday afternoon: geology and chemistry, in the fall; live stock and dairying, in the winter; botany and entomology, in the spring. The subjects embraced will be:—Agriculture, Dairying, Agricultural Chemistry, Geology, Botany and Entomology. The forenoons will be devoted to lectures; the afternoons and Saturdays, to geological and botanical excursions, in charge of a professor; a certain amount of practical work in laboratories, and observation trips in gardens, fields and experimental plots. The course will extend throughout the month of July, commencing on Monday, the 2nd, and ending on the 31st. There will be no tuition fee. Teachers to the number of 50, male or female, will be provided with rooms and board in the College, for which there will be a charge of \$12.00, payable in advance to the Bursar. Washing will be done in the College laundry, and charged extra, at moderate rates. Sheets and towels, four of each, must be provided by applicants for admission. Applications should be sent to President Mills as soon as possible.

**The College Staff.**—As at present constituted the staff is as follows:—James Mills, M. A., LL. D., President; Wm. Rennie, Farm Superintendent; A. E. Shuttleworth, B. A. Sc., Professor of Chemistry; J. H. Panton, M. A., F. G. S., Professor of Natural History and Geology; J. H. Reed, V. S., Professor of Veterinary Science; H. H. Dean, B. S. A., Professor of Dairy Husbandry; C. A. Zavitz, B. S. A., Experimentalist; G. E. Day, B. S. A., Lecturer on Agriculture; H. L. Hutt, B. S. A., Lecturer on Horticulture; J. B. Reynolds, B. A., Assistant Resident Master; Captain Walter Clarke, Instructor in Drill and Gymnastics; A. McCallum, Bursar.

**Excursions to the College.**—The Agricultural College of late years has become a popular point for excursions from various parts of Ontario, under the auspices of Farmers' Institutes and other agricultural organizations, and this season appears to be no exception. Apart from the mere holiday pleasure of a visit to this institution, the observant visitor finds abundant opportunity to gather useful information, and those in charge doubtless derive advantage by coming in contact with the suggestions and friendly criticism of those whose interests this institution is intended to serve.

### Pointers in Pig-raising.

BY C. J. WRIGHT, DIXVILLE, QUE.

Never overfeed a sow with rich heat-producing foods, which have a tendency to cause fever and dry up the milk flow, thus stunting the growth of the young pigs. For the first week feed house-slops and bran, sparingly, after this time you can feed as heavy as you like.

In order to be healthy, young pigs must have plenty of exercise. Another important point in pig-raising is to provide a dry, clean bed; otherwise they are likely to die of thumps, cold or rheumatism.

As soon as the pigs are four weeks old, commence to prepare them for weaning by feeding them in a trough within reach of the little pigs at all times, but inaccessible to the sow. Increase the feed gradually, and by the time they are eight weeks old they will be eating sufficient, so that they can be weaned without checking their growth in the least.

The Right Hon. Mr. Chaplin, British Minister of Agriculture under the late Salisbury Government, recently delivered an address in Edinburgh, upon which the Scottish Farmer comments as follows:—

"Mr. Chaplin's frank, outspoken utterance will have done much to deal its death-blow to any revival of Protectionist views in agricultural circles. His statement proves clearly that Protection is not merely an impolitic cry, but a strictly illogical and unfounded remedy. The most prosperous period agriculture ever passed through in this country was that following the adoption of the Free Trade principles—a period extending for about twenty-five years; and during the succeeding term Protectionist as well as Free Trade countries have suffered from agricultural depression. The conclusion, therefore, seems natural that whatever else may have caused the melancholy state of our chief industry, it was not and could not be Free Trade."

## STOCK.

## Western Steer Feeding.

BY RICHARD GIBSON, DELAWARE, ONT.

I have lately seen the way cattle are handled by the western feeders; at one farm I found 400 steers in a bunch divided in two lots by a fence running through centre of yard, the smaller steers being together; attached to each was a deep, open shed, under which, by close crowding, nearly the whole lot could lie in cold nights or stormy days; it is needless to say they were all dehorned. Water troughs in this shed never froze, and self-feeding troughs containing corn and bran, and large racks holding clover hay were the appurtenances thereof. Again, there were racks all around the yard and through the centre where corn and bran could be fed fine days, and night and morning these were filled with corn fodder, partially husked.

These steers were put up to feed in October, and had gained over 400 pounds per head, at a cost of about nine cents per head per day.

It seemed a careless way of feeding, with corn and hay before them all the time; still, I am more convinced than ever that we in Canada cannot compete with the western feeder, and that should there be a reciprocity treaty with the United States I feel satisfied my village butcher would be cutting up western-fed beef.

What astonished me most was the ease with which these steers were fed corn and bran in self-feeding troughs, to be had for the trouble of walking thereto. Water and clover hay ditto, *ad libitum*. The stalks were loaded in field into waggons and hauled direct to yards, two men doing the feeding night and morning, simply as chores.

In Canada, with our root pulping, grain grinding, chaff cutting, mixing and feeding, cleaning out barns, etc., it would take at least fifteen to do what the two were accomplishing west, and the results equally as good. I have since ascertained that the bunch to which I refer have been sold. I figure out the profit about \$18 to \$20 per head, besides the manure. Now, here comes the rub: What is that manure worth? To the average Wisconsin farmer, perhaps not much, though they certainly do appreciate that essential to good farming more than their cousins on the black prairie corn belt soil. In Canada and England steers are often fed to convert certain crops into manure. We expect a profit on the feeding; that is, we expect to sell to ourselves the coarse grains grown on the farm, to be fed to steers at a higher figure than the quoted market price. That is a direct profit, but the indirect is one of perhaps greater importance; that is, as manure factories converting the coarse grains and fodder into pabulum for future crops; and just as long as well-made barn manure produces the crops that it does, acting well on all soils not drowned with water, so long will steers be fed. Fortunately for western feeders, corn grows so naturally, can be produced so cheaply, and being highly carbonaceous, the crop takes but little out of the soil, hence can be grown often on same field. Moreover, it is such capital feed for cold weather, and answers its purpose so cheaply and well, that the question is scarcely ever raised as to whether other feeds might be advantageously fed with it; and while it may be necessary in many parts of the continent to consider feeds from both a manurial and feeding standpoint, such will not occur for many years within the strictly black soil corn belt. But in other parts the question is becoming more serious every year—how to keep up the fertility of the soil? It may be asked, why bother with feeding cattle for the manure, when one can buy artificial manure so cheaply and so scientifically mixed. The reply is, that it is by no means certain in its results, its value depending in a great measure upon the amount of rain-fall in the season; it is effervescent in its effects, soon over with; it is useful to the market gardener or seedsman, who commands big prices for his produce; but for the farm proper, except for occasional crops, it will never take the place of well-made barn manure made by animals when fed on nitrogenous foods, such as peas, oats, linseed and cotton cakes. The two latter have never taken the place in America amongst the favorite feeds that they deserve, nor occupy the same position as in England. So valuable are they regarded there that a tenant farmer leaving his occupancy gets a portion of two years cake bill paid.

I was rather astonished to learn that it paid to buy bran, when \$12 a ton, to mix with corn, when the latter was worth 25 cents per seventy pounds. I can understand that the addition of bran would make a more balanced ration, but where that was not considered, but simply used because it paid in beef, was what surprised me.

Another cause of wonder to me was the loose state of the bowels of the steers. Had I not seen the evidences of kindly growth and fast feeding in the bright eye, glossy coat, curly hair of good length, and the care bestowed upon it by the animals licking themselves, I should have thought they were scouring, consequently under the influence of some irritating substance, and, therefore, not in proper health to digest and assimilate their food. In Canada we can make beef at profit, but it must be at high pressure, feeding right from birth, and turn off at eighteen months to two years, and could the generous feeding steer of old still be purchased, we could feed at a profit, even in these days of low prices. The steers of thirty years ago

are to be seen no more. It was hoped that the Scotch Shorthorn would exert an influence for great good. As show cattle, they are small and neat, but where are the steers? I believe they are getting commoner yearly.

In addition to the steers, there is another element of profit in connection with the feeding thereof, and that is the Poland China, as a scavenger, a perfect success; as a utilizer of waste, he stands without a rival; but as a first-class bacon hog, I am afraid the claims of his partisans are overdrawn; neither his conformation or the food he so evidently enjoys seem to me conducive to the manufacture of that choice side meat styled breakfast bacon.

I was much amused watching them. They evidently understood when to expect a ration, and I never knew until I saw them following steers why they flopped their ears. *It is to protect their eyes.* What cute creatures. Here I've been saying to breeders for years, "You've got an almost perfect hog in the Poland China for your purpose of converting corn into pork; but there is something wanting; they lack finish; if you could only breed them with prick ears, what an improvement it would be." But the Poland China knows his business, and evidently refuses to be improved that way. Wise hog!

## Chatty Stock Letter from the States.

FROM OUR CHICAGO CORRESPONDENT.

Best 1,400 to 1,700-lb. bullocks sold at \$5.10, being 70c. higher than a fortnight ago and only 40c. to 50c. lower than a year ago; best Texas steers, \$4.45, against \$4.75 twelve months ago; distillery cattle, \$4.25 to \$4.75, against \$4.90 to \$5.10 a year ago; heavy hogs, \$4.90, against \$5 two weeks ago and \$7 a year ago.

During the past half-month the situation in the cattle market has materially improved, especially from the sellers' point of view. Indeed, though prices are higher, buyers seem to be better satisfied, as the higher prices denote a healthier and more desirable state of the general trade. An old cattle buyer assures the writer that as a rule he would sooner do business when values were high than when they were depressed. However, the position of the market, with reference to light and heavy cattle, has shifted, and now the ripe, heavy beeves are commanding the premiums they merit. The distillery cattle feeders are moving out a good many cattle, at \$4.25 to \$4.50.

A well-known member of the so-called "big four," who bought a big lot of Canadian stillers two years ago, and lost so much on them, recently contracted a lot of Kentucky stillers. The first half was delivered, but the second half he claimed lacked quality, and he claimed a reduction in price. The owners, however, who knew as well as he that the market had gone up since the deal was made, were very anxious to take the cattle back. As soon as the buyer learned that they were up to his favorite little game, he at once decided that the cattle were good enough to pass.

Some 1,545-lb. distillery bulls sold at \$3.65 to an exporter; a lot of 1,250 to 1,400-lb. distillery steers sold at \$4.55 to \$4.75, with some 1,200-lb. glucose-fed steers, at \$3.80.

Texas cattle are selling well, and are coming to market more freely. A lot of 1,153 lb. steers, which sold at \$4.45, had been run on grass and fed 6 lbs. of cottonseed meal per head per day. Grass cattle are not yet fat enough to be good beef, but they are improving rapidly.

Horses are selling nearly as well as other live stock. The receipts show over 7,000 more horses sold this year than in 1893, up to the first of June, at the Union Stock Yards. Late offerings were principally drivers and 1,200-lb. chunks, the latter selling up to \$115, and drivers from \$70 to \$225, according to quality and action. The demand for saddlers is quite light.

Best sheep, \$6.50, or 35c. lower than a fortnight and 65c. lower than a year ago. Lambs, same as two weeks ago, and \$2.00 per 100 lbs. lower than a year ago. Following is an abstract of one day's business in the sheep house:—Receipts, 8,000 head; a great many spring lambs sold at \$3 to \$4, and some down to \$2.75. Included in the receipts were 1,632 head of 122-lb. Western sheep, which were contracted to an exporter at \$4.75. An extra prime bunch of 120-lb. Western sheep sold to an exporter at \$4.50, and 417, averaging 113 lbs., at \$4.25; choice 100-lb. Indiana sheep sold for \$4.40; medium sheep sold at \$3 to \$4, and common stuff at \$1 to \$2.50. Lambs ranged from \$2.75 to \$5.10.

The death of Jacob May, formerly of New York, but for years cattle buyer for Armour, removes another well-known cattle man.

The question of a location for the Annual Fat Stock Show is again being discussed. There is dissatisfaction with the Stock Yards site, as not being central enough.

## Tuberculosis in Wisconsin.

At the Wisconsin Agricultural Experiment Station, Madison, last winter, one of the cows in the station herd was noticed to be running down in flesh rapidly. Dr. Russel, bacteriologist, and Dr. Clark, veterinarian, began an investigation, and 25 out of 30 cows responded to the tuberculin test. Up to date some 28 have been slaughtered, and 26 of them showed tubercular consumption of the lungs, several cases being very bad.

## Shorthorns, Present and Past—Dorsets on the Move.

I have lately succeeded in purchasing for Senator Cochran fifty Shorthorn bulls for his Northwest ranch. They were a good lot, and ought to make their mark, as they will be employed with a lot of good cows, steers from which have averaged \$40 per head in Montreal, clear of expenses. The Senator once owned the most valuable Bates herd ever in the Dominion, and what is of as much importance, made the most money out of them. Tenth Dutchess Airtes and her four daughters cost something like \$30,000. I am speaking from memory, and it has to go back many years. They and produce realized over \$150,000 when sold. Then we must not forget Duchess 97, imported from England at a cost of 1,000 guineas, as she became such a noted matron being dam of 1st and 2nd Dukes of Hillhurst. This sale of 97, by Capt. Gunter, for 1,000 guineas, was so much commented upon at the time by Bates breeders that it was mainly instrumental in my getting Bride of the Vale from Tom Booth at the same figure. This was at the time of the Wars of the Roses—or Booth and Bates. Feeling ran so high that a Booth breeder would not attend a Bates sale, and if rural breeders happened to meet at a mutual friend's house, it was under protest. But I am rambling; these old associations carry me away. How gratifying it is to know that the man who held and owned both the best Bates and Booth in Canada, and probably the best on the continent, with one exception, and also made the most money out of them, still has faith in the sort, and that, while his contemporaneous breeders of any note are all either dead or gone out of the business, he still sticks to the breed, and buys bulls for breeding steers. Not much romance here—but strict business; and had some of the meteors had the same faith that he has, they would have been breeding to-day.

I also wish to note that I have purchased for the Hillhurst branch of same firm, the entire flock of Dorsets from Mr. T. W. Hector; they are indeed a good lot, and what surprised me most was the condition, considering the pasture. While Springfield is a most romantic spot, and must be eventually valuable for building sites, overlooking, as it does, the Credit River, the banks being nicely wooded with pine, whose fragrance was particularly noticeable by one to whom a pine is almost a curiosity, all these attractions are scarcely what one would look for on a sheep farm; hence my surprise at the condition.

The rams are thin, compared to what they were at Chicago, but there are seven imported ewes that I doubt can be duplicated on this continent. Though, of course, not as fat as when at Chicago, they impress one quite as much; the gloss and glare, the spangles and the ringsmaster's crack of the whip, are wanting, but the outline is there; the same performers, but in deshabille. I sincerely hope they may do well and give satisfaction.

RICHARD GIBSON, Delaware.

## FARM.

## The Fall Show.

BY R. E. KING.

The Fall Show was instituted with the hope of introducing improved methods of farming, by means of prices offered for the best agricultural products.

"Is it fulfilling its mission, and what benefits, if any, are to be derived from the inspection of the exhibits?" has been made the subject of this paper.

We find that, as a rule, most people avow that what they attend the fall shows for is to see the "folks and the fun," not going with the expectation of learning methods which would benefit them financially. There must be a reason for this. True, they will see examples of good stock, but they are viewed as curiosities or as something helping to supply amusement. Such questions as, What methods of feeding and breeding were followed in order to achieve the results obtained, together with the profit resulting from growing animals of the type shown? are unattainable. In fact, it is generally conceded that the majority of show animals are not produced at a profit, the truth being that the exhibits are not intended to be educational, but are shown as a means of advertisement for the owner.

It does not require a money grant from the Government to tell any farmer that plenty of feed and care bestowed upon an animal will produce one that is superior to those which have lacked a sufficiency of either or both, yet this is about the extent of the knowledge to be derived from attending the average show. What particular combinations of food, with cost of same, together with methods of feeding, how cared for, as regards stabling, pasturage and watering? These and many of the questions which would be of assistance to the visitor in reducing the cost and increasing the quality of his cattle, sheep and pigs, as the case might be, he has no means of learning. The same is true of the cereal department, where may be seen a bushel or two of, say peas, of which there are several bags, one of which has received first prize. Why it has done so we are left to judge for ourselves. Then, what do we find are the conditions which entitle it to the distinction of being placed first?

1st. Freedom from dirt, which is the result of careful work with the fanning mill. 2nd. Evenness of size attained by passing over two sieves, one taking out the large, the other the small grains. 3rd. Large size for the kind, brought about by screening

a great amount for the sake of getting a little for show. 4th. Evenness of type, which is often obtained by patient hand-picking.

There is scarcely a bin of grain in the country but that from which a prize bushel may be gotten by careful cleaning and patient picking. Then, what is to be learned by viewing the cereal exhibit? We find attached to the exhibit a ticket bearing: 1st. The name of the agricultural society. 2nd. The name of the department under which the exhibit is placed. 3rd. Name of cereal (to enlighten the farmer). 4th. Number of exhibit.

That is what we learn. What we do not know is: The name of the variety, name of exhibitor, how cleaned, time and manner of harvesting, cultivation, time of sowing, manner of sowing, preparation of seed bed, previous cropping, manuring, yield per acre, quality of straw, profit, etc., etc. In fact, those things which would be and are of value to the producer are apparently carefully hidden.

We have to change with changing circumstances. Years ago, when the practice of holding an agricultural exhibition was instituted, the meagre information to be derived from simply inspecting the exhibits was sufficient. Farming has become more of a science, while the manner of conducting exhibitions has stood still as far as agricultural products are concerned. It is not now enough to know *what* the result of labor has produced, but we want to know *how* results are attained. For instance, when the farms were new and the soil still possessed its virgin fertility, all that was necessary to know was that a certain person had grown fine potatoes or pumpkins, and his neighbors, by procuring seed, could hope to achieve like results. But now, when the virgin fertility is no longer to be depended on, when climatic conditions have more influence than of yore, when we have no crop that is free from insect pests or fungoid growths, the fall agricultural exhibition fails to meet the requirements. It is behind the needs of the times; it is dead, and in its place we have the fall "show," and the more show and less agriculture, the greater the success.

Now and then some agricultural writer will bemoan the degeneration which has taken place, and call on the directors to expel the horse trot, baby shows, beauty shows, pig races, turkey and chicken, goose and duck races, cheap Johns, fakirs, side-shows, balloon ascensions, etc., etc. But it can not be done. The more nonsense the better the show, is the experience, and no good show resists the tendency. The majority of those who engineer these shows are the hotel-keepers and business men of the towns where they are held, who expend the legislative grant for the encouragement of agriculture. Of course, they may be of advantage to the breeder of fancy stock, as an advertisement, but I appeal to experience to prove that the great mass of the farmers are not benefited in the least.

The question is, can there not be devised some means whereby the Fair may be made to answer the needs of the times, and make it what it was intended to be, viz., an educator? The change would have to be radical, indeed. We would want the exhibitor to show *how* such results had been obtained, and not, as now, merely *what* had been done. And unless they are improved along the lines indicated, we think that we are justified in saying that the grant should be discontinued altogether; much less increased.

#### The Present and Future of Wheat.

BY ROBERT WEMYSS, REABURN, MAN.

It is probably a bold, nay, a hazardous experiment, for any one dogmatically to venture an opinion on the future range of prices for wheat. The past and present we know, but, unlike experience in some other matters, they offer no solution of the future problem so vital to the agriculturists' interests. As with every other product, supply and demand must regulate prices, and the engrossing question is what the former is likely to be relatively to the latter, of which a fairly accurate estimate can be made. There are not wanting those on the other side of the boundary line who argue that the demonetization of silver has been an important factor in the reduction of grain prices. This is a question which we cannot enter upon here, further than to say that silver, like any other metal, is subject to the laws of supply and demand, and, writing in general terms, it is the financial standing and credit of any nation issuing silver coinage bearing the national stamp that fixes the value as currency when redeemable in gold. Our republican neighbors have been so long a law unto themselves, and so inflated by the marvellous growth and expansion of their nation, that they desire to be a law unto other nations, but bi-metalism must prove a failure in any one country unless adopted by others. They are now reaping the fruit they sowed the seed of in the Sherman Act, the evils of which shall be felt in many years yet to come.

The low prices arising from the enormous production of 1892 have not been without their compensatory advantages, for, however beneficial to the consumers and disastrous to the producers, they have been eye-openers, and have awakened the farmers to the absurdity of jealous isolation, the advantage of combination, and the stern necessity of being able to supply all their wants at natural prices, and not at prices artificially inflated by a protective tariff. To sell at ruinously low prices, and to be forced to bonus other industries is to burn the candle at both ends at the same time,

which may realize the idea of a short life, but not a merry or prosperous one. We are not of those who believe that the prices of wheat must of necessity rise to a higher level, even the level of previous years, but we do believe that present prices are lower than are likely to continue, for the simple reason that producers cannot on the average afford to toil, sow, and reap, for 45 to 50 cents per bushel. Farmers must have a fair margin over cost equally with other producers or manufacturers, and although the smaller and more needy may, probably must, make wheat their staple, yet the more independent will cease to grow it, or do so only for stock feeding purposes. In this way the supply for human food would be gradually curtailed, and prices take a higher level.

Many opinions have been ventured regarding the probable future of wheat, one of the favorite theories of optimists being based on the United States becoming importers instead of exporters of breadstuffs. It may be so, but it must not be overlooked that higher prices will induce higher culture and greater yields in the States, and also stimulate production in all the wheat-growing countries of the world. The New England States show this, particularly where many farms, abandoned because of their run down condition and sold at sacrifice prices, are now, under higher culture and more generous treatment, repaying the purchasers well for their outlay in manures, and more scientific methods. In Britain, and more particularly in Scotland, where the lands have been cultivated for centuries, and where agriculture is pursued with much scientific knowledge and enterprise, the yield per acre of cereals and roots is, on the average, greater than in Canada or the States. This is chiefly due to the system of rotation of crops, heavy manuring, drainage where necessary, and careful culture. The productive capacity of much of the land, both in Canada and the United States, has not yet been reached.

If the world's power of production is looked at, we see Russia, already an enormous producer, pushing a railway through Siberia, a country whose climate is somewhat similar to that of Manitoba, and with a large area of land capable of growing a magnificent sample of wheat. With the increase of transport facilities the production will no doubt be greatly extended. Turn to India, already a large and yearly increasing factor in the world's supplies—we find a large area yet to develop in the Punjab, the Northwest Provinces, and in Oudh, and whose power of production can scarcely be estimated, so great must it be in the future. Egypt, too, goes on steadily increasing, and with the new irrigation system now to be carried out, may yet rival India. Burmah is capable of raising almost unlimited quantity; while the Argentine Republic, which a few years ago scarcely figured as a factor in the wheat markets of the world, is becoming one of the largest sources of supply. What the effect of the development of British Africa upon the food products may be, remains to be seen, but there is every reason to believe that its capabilities for growing cereals equals, if not exceeds India. Its population, free from the trammels of "caste," adapts itself more readily to steady, persevering labor under the superintendence of white leaders. In some divisions or zones the climate and soils are particularly favorable for growing wheat, maize and millet.

Too little importance has been attached to the article of maize, or Indian corn, as a factor in the prices of wheat, and the tendency has been to reckon wheat as its own competitor only, which necessarily to a large extent is so. It must, however, be borne in mind that whatever forms a food staple and satisfies the wants of mankind, is an opposing force to higher prices in other food cereals. Maize is a food product of the greatest importance for man and beast, being not only highly nutritious but agreeable to the palate, at the same time very wholesome, probably even more so than wheaten flour as now manufactured. Mixed with other flour or fine meals it makes excellent bread, and even now forms the staple food of the lower classes in many countries. The higher the prices of wheaten flour, therefore, the larger the consumption of other and cheaper food products.

Everything, we believe, point to moderate prices being the normal condition of wheat, and while war on a large scale or failure of European or American harvests may temporarily raise them, it would be unsafe for the farmers to speculate on those factors. In Manitoba we have to keep in view that when wheat is selling in the British markets, at say 25 shillings sterling a quarter (eight bushels), the purchaser here can only afford to pay from 42 to 45 cents per 60 pounds; that is, he pays the British price, deducting freights, insurance, shrinkage, and other charges for placing it on London, Liverpool, or Glasgow markets. The conclusion, then, from what has been advanced, is that the days of 80 to 90 cents for wheat are likely to be only occasionally; \$1, a very doubtful quantity, while a moderate, but living price, is probably to be the average. Mr. Van Horne's figure of \$2, even with the qualifications he attached to it, is too absurd for even serious consideration. If intended in other than jest, it shows a lamentably low opinion of the intelligence of the farmers. It did not even serve the purpose of the traditional red herring to draw the scent off the trail of high freight rates. Farmers must study not only how best to increase their receipts, but with their incomes reduced one-half—in expending them, how not only to get the best value, but a fair one. An almost

unanimous demand has gone forth from this Province for tariff reform, and unless granted, the settlement of the Northwest must be indefinitely delayed. Immigration is not likely to seek a country where to many natural disadvantages the Federal Government loads agriculture with artificial ones. The best class of immigrants to cultivate is men of moderate capitals, the sons of farmers in Scotland and England, who can bring with them from £500 to £1,000 sterling. This class has as yet been scarcely touched, and even if so, could not be induced to come when they know that so large a percentage of their capital and incomes is absorbed either in taxation or in forced contributions to uphold protected industries. At Ottawa the farce has been gone through of bringing in a budget with a few reductions made, but now that the Government has kept the promise to the ear, they are sedulously replacing the duties on most of the articles off which they were taken. Farmers are not merely interested in purchasing agriculture implements, but in hundreds of other things, the duties on which range from 20 to 100 per cent. At a low calculation, on the average, the farmers of Manitoba and workmen contribute \$75 to \$100 each in taxation annually.

Manitoba and the Northwest are passing through times calculated to try the best, but who can doubt that better are ahead, and the lessons learnt in adversity are not without their uses. If industry, economy, prudence, and a dread of debt are the fruits of past experience, much will have been gained. Farmers must learn to make haste slowly, making solid the foundation, and expanding only when the means of doing so are within themselves. Too much has been generally attempted on limited means; too much put upon the risk of crops, and it is among those that the greatest distress has prevailed. The farmer with a limited area of crop will find it more profitable to invest in cows than in a self-binder, trusting either to his neighbor to cut for him, or himself using a scythe, as was done by the early settlers, both in Ontario and Manitoba. Cows and sows are profitable stock, yielding a handsome return and increase, while self-binders are expensive at the beginning, annually deteriorating, and, if bought on credit, an annual anxiety as to interest and payments.

#### Artesian Wells.

BY WM. SHARP, 181 HAMBURG AVE., TORONTO.

The Artesian Well derives its name from the Province of Artois, in France, where the first flowing wells were procured by drilling. The term artesian well includes any well drilled, whether for water, oil or gas. The oil industry in Pennsylvania, Ohio and West Virginia has been where the drilling of wells and all the necessary tools have been brought to the greatest perfection in the last twenty-five years. Formerly it took from three months to six months to drill a well five to six hundred feet deep; now a well will be drilled three thousand feet in from sixty to ninety days. A practical driller of Pennsylvania a few years ago saw the necessity of having a portable drilling outfit that would be efficient to drill to a depth of 500 feet, and be mounted on wheels. Such is the machine used by the principal men who make a business of drilling wells for water in the United States. There have been a few of them manufactured in Canada, but owing to the fact that the parties who bought them had no previous experience in drilling, "water-well drilling" in Ontario has not been the success that it is destined to be in the near future.

Another cause that has injured the reputation of the artesian well is the number of wells in sections of the country where the rock has been found near the surface. A well would be dug to the rock, then a small hole drilled until a flow of water was reached, if the distance was not too great, as the horse-power machines used were not capable of drilling to a greater depth than one hundred feet. As there was nothing in such wells to prevent the sediment from getting into the small drilled hole, it was only a question of time until the hole was filled up altogether, thus shutting out the water.

A well that is properly drilled and cased with casing the same as used by the oil operators of the United States never fills up. A well can be procured almost under any circumstances that will give an abundant supply of pure water, as the casing thoroughly excludes all surface water. When a layer of gravel is reached with the desired water, or the rock is found, the casing is discontinued. The size of hole drilled is usually 3 1/2 in. in diameter. A few of the advantages of the drilled well are:

- 1st. The well is small and affords no room for stagnant water.
- 2nd. A stream having been struck which flows through the well constantly, it never needs cleaning.
- 3rd. When the surface water or any particular stream that is undesired is properly cased off, we get nothing but pure water from the rocks below.
- 4th. It is most reliable in dry weather, since it does not depend on a seep or wet weather stream.
- 5th. It may be drilled through any kind of rock, no matter how hard, or through any depth of quicksand.
- 6th. There is no danger man, or beast, or child will fall in the well.
- 7th. Being straight and narrow, the pump will be held straight and firm, therefore last longer and work better than in an open well.
- 8th. It may be put down through a vein of coal or other minerals, shutting off the water entirely therefrom and get good water from below.

9th. The casing prevents rats, mice, worms and everything of the kind from getting into the well, while it is impossible to keep them out of "the dug" well.

10th. A well can be drilled to any depth required and all surface and impure water cased off, and pure, healthy water procured from the gravel or rock below.

11th. In a great many cases a flowing well is procured, having all the advantages of the living spring.

**Leguminous Plants.**

A bulletin recently issued by the United States Department of Agriculture, on Leguminous Plants for Green Manuring and for Feeding, contains some exceedingly instructive information on this important subject. It concludes with the following summary, which will be read with interest at this time of year, when many are busy plowing in a weed crop on their summerfallow:

Probably of all the legumins, the pea is the only one suitable to cultivate in Manitoba, and, sown with oats (drilled cross ways), they can be cut on the green side with the binder, tied in small sheaves so as to dry through, and fed either with or without running through the straw cutter, make one of the best feeds possible for all stock, especially milk cows. The blue-lupin grows wild in some sections of Manitoba, but is a woody, bushy plant, and although cultivated in some parts of Europe, does not look as if it could be made profitable with us.

(1) Green manuring improves the physical properties of the soil by making the soil more porous and adding to its supply of humus. It brings up the dormant plant food from deep down in the soil, and deposits it near the surface, where it can be used by plants feeding near the surface.

(2) Green manuring with buckwheat, Hungarian grass and other non-leguminous plants, adds nothing practically to the soil which was not there before, except a mass of vegetable matter which decays and goes to form humus.

(3) Green manuring with clovers, peas, beans, lupines, etc. (leguminous crops), actually enriches the soil in nitrogen drawn from the air. These plants can grow with very little soil nitrogen. They store up the nitrogen of the air as they grow, and when plowed under, give it up to the soil and to future crops. It is the cheapest means of manuring the soil with nitrogen.

(4) But animals, as well as plants, require nitrogen for food. By feeding the crops of clover, cowpea, etc., only about one-fourth of the fertilizing materials of the crop is lost, if the manure is properly cared for. As the nitrogen of the air is the cheapest source of nitrogen for plants, so it is the cheapest source of protein (nitrogen) for animals. The leguminous crop is best utilized when it is fed out on the farm, and the manure saved and applied to the soil. The greatest profit is thus secured, and nearly the same fertility is maintained as in green manuring.

(5) For renovating worn or barren soils, and for maintaining the fertility where the barnyard manure is not properly cared for, green manuring with such leguminous crops as cowpea, clovers and lupines, is recommended. A dressing of potash and phosphates will usually be sufficient for the green manuring crop.

(6) The practice of green manuring on medium and better classes of soils is irrational and wasteful. The farmer should mend his system, so that the barnyard manure will be as well cared for as any other farm product. Loss from surface washing, leachings, fermentation and decay should be guarded against. Then, the feeding of richer food will mean richer manure, and better and cheaper crops.

(7) The system of soiling, or feeding green crops in the barn in place of pasturage, enables a larger number of the animals to be kept on a given area of land, and the manure to be more completely saved. For this purpose leguminous crops are extremely valuable.

(8) Hay from leguminous crops is about twice as rich in protein as hay from grasses. In the one case this protein (nitrogen) is obtained very largely from the atmosphere; in the other it is all drawn from the fertility of the soil. Leguminous crops yield larger crops of hay to the acre than grasses. Hence the production of food material on an acre, especially protein, is several times larger with leguminous crops.

(9) If allowed to ripen, the seed of the cowpea and soja bean furnishes an extremely rich, concentrated feed, which can be ground and fed in place of expensive commercial feeds. The straw remaining may be fed as coarse fodder, for it is richer than ordinary hay.

(10) Grow more leguminous crops. They furnish the cheapest food for stock and the cheapest manure for the soil. They do this because they obtain from the air a substance necessary for plants and animals alike, which costs, in the form of fertilizers and feeding stuffs, from fifteen to twenty-five cents a pound.

The following commissioners are investigating tuberculosis in New York State:—Mr. Frank E. Shaw, Dunkirk, a well-known member of the American Jersey Cattle Club; Dr. Florence O. Donohue, Syracuse, president of the State Board of Health; Mr. D. F. Wilber, the distinguished Holstein breeder, of Oneonta; Mr. Wm. O. Squires, of Marathon, long identified with the Red Poll interest; and Prof. James Law, of Cornell. Except the secretary, Mr. Donohue, these gentlemen are to serve the State without compensation.

**DAIRY.**

**The Bothwell Dairy Company.**

Some years ago cheese dairying was successfully carried on for a season at Bothwell, Ont., but the promoters of the enterprise unfortunately allowed it to lapse. That locality is peculiarly well adapted for the growth of pasture, roots and corn, and any grains necessary to supplement these are also grown in abundance. There is an ample supply of pure water and the roads are good. It seems strange that the dairy industry has not long ago taken hold under such exceedingly favorable circumstances, but the time has evidently now come when grain growing as a speciality is destined to give place to cheese and butter production, which to some extent is also likely to displace steer feeding, owing to the very unsatisfactory condition of that trade. Adjoining the town of Bothwell, as readers of the FARMER'S ADVOCATE are aware, was located the grand 600-acre farm, with some 600 acres a mile further north of the Geary Cattle (Polled-Augus) Company, which practically has been lying unproductive for years, though it has been used to some extent in connection with horse raising and for cattle grazing purposes. The persons chiefly interested in this property are Messrs. T. D. Hodgins and John Labatt, of London. The main barn and stables are very fine structures, providing stabling for some 200 head of cattle. Two large silos are to be put in this summer, about 40 acres of corn being grown for filling them. The water supply is pumped by windmill power, and just west of the barn stands the engine and boiler house, all complete, from which, in the barn, ensilage and other machinery can be run, and on the other side supplying power for the new dairy building. A few months ago it was decided to embark in this industry. Mr. S. C. Mason, an enterprising young man from near London, Eng., has taken a third interest with the gentlemen already named in this project, and will act as manager. A splendid dairy building, 105x30 feet, on a substantial brick foundation, has been erected. In the centre is the cheesemaking room, with capacity for five or six large vats, and to the south is the curing-room. Winter dairying is to be carried on, and the north end of the structure is set apart for buttermaking, etc., on the separator plan. The building is one of the best constructed that we have yet seen for this purpose. The farmers of the locality have not been asked to invest any capital in the project, so that if there is any risk the company take it themselves. It is proposed to make the cheese at 1½ cents per pound, patrons to draw their own milk, or for 2½ cents if the milk is collected and whey returned for them by the company. The milk will be paid for according to the Babcock test plan. It is expected that the milk of about 300 cows will be secured from the outset, the company putting on about 100. Hog raising will be an adjunct of the business, on a large scale. Mr. John Sheppard, one of the most progressive and successful farmers of this district, will this season turn in the milk of about 50 cows. His barn is well-equipped for dairying. The stabling accommodation is admirable, and he has in use two large, substantial silos. Up to the middle of June he had been feeding first-rate flint corn ensilage to fat cattle, of which he had altogether about 100 head. The meadows on Mr. Sheppard's farm and others in the locality were in grand condition, and his large, young orchard was certainly one of the most thrifty we have noticed for a long time. A number of others in the district will avail themselves of the advantages which this new factory puts within their reach and become patrons. By next season it ought to have a heavy patronage. As a cheesemaker, the Bothwell Dairy Company have secured the services of Mr. James Thompson, a thoroughly experienced man, who is also a buttermaker.

We must congratulate Mr. Hodgins and those associated with this enterprise upon the course they have taken in one regard, viz.:—In holding a dairy convention, in the Bothwell Town Hall, of those who are likely to become patrons, at which all the details of the business were carefully presented and practical dairying in its various phases discussed. If patrons are to do their part properly they must inform themselves thoroughly on all the details of the work, including the selection and breeding of cows, their general care and feeding, and more especially the winter management. It will be a good plan to hold further meetings of this sort. The one in question was favored with the presence of Prof. Jas. W. Robertson, the Dairy Commissioner, who was enthusiastically received. Mr. R. S. Hickey, ex-Mayor, occupied the chair, and addresses were also delivered by Mr. J. W. Wheaton, Secretary of the Western Ontario Dairymen's Association; Mr. Thompson, associate editor of the FARMER'S ADVOCATE; Mr. T. D. Hodgins and Mr. John Geary, of London; Mr. John Sheppard and Mr. S. C. Mason. This new dairy enterprise has certainly made an excellent start, with every prospect of success. It has given considerable employment to labor, has already begun to impart a healthful stimulus to agriculture, and in many ways should prove a boon to the locality.

**The Work of the Dominion Dairy Commissioner.**

As outlined a few years ago, the work of the Dominion Dairy Commissioner, Prof. Jas. W. Robertson, and his department, has been of a three-fold character:

1st. To extend co-operative dairying into those portions of Canada that seemed well adapted for it. 2nd. To bring the product of all up to a uniform standard of excellence. 3rd. To develop winter dairying. Operations are still adjusted to this general plan.

The work is all directed from the commissioners' headquarters at the Central Experimental Farm, Ottawa, where a great deal of experimenting is done relating directly or indirectly to dairy husbandry. Special investigations are being conducted in cream ripening, both as to the agent (ferments) in developing flavor and the degree. In hog fattening, as an adjunct of dairying, various feeding tests are going on, a mixture of ground rye, barley, wheat and bran soaked, giving the best results. Feeding experiments with cross-bred hogs and grades are also being conducted. Last year twenty-eight cows were successfully fed on the produce of forty acres, with the exception of some bedding and grain borrowed from the farm proper, but this was almost offset with a considerable quantity of silage left over. This year it is expected that thirty cows will be maintained on the forty acres, which was made up as follows: Twenty acres corn and beans, four acres sunflowers, four acres roots, eight acres mixed cereals and four acres pasture. An effort will be made, we might say incidentally, to establish as a Canadian industry the production of sunflower oil and cake. An immense quantity of dairy literature is circulated from Ottawa.

**MANITOBA AND THE NORTHWEST.**

The Dairy Commissioner has two travelling dairies at work in the Prairie Province and the Territories, planned to visit about sixty places, spending two days at each. Two men accompany each with a separator, tester and complete buttermaking outfit. The whole operation is exemplified, addresses given and questions answered. The meetings have been well attended, farmers coming as far as thirty miles in some cases. Messrs. J. A. Ruddick and Geo. Taylor are in charge of one and J. B. McEwen and L. A. Zufelt of the other. A dairy station has been established at Moosejaw, N. W. T., which, after a little help at the outset, will become a self-sustaining and profitable farmers' enterprise, just as has been the case in other provinces. Next year it is expected to have in operation four large creameries, under the Commissioner's direction, at suitable points on the C. P. R., the latter co-operating in the project.

**PRINCE EDWARD ISLAND.**

Mr. T. J. Dillon is in charge of the work under the Dairy Commissioner on this Island, where 17 dairy stations, two of them devoted to butter and the rest to cheesemaking, are running. Excepting the one at New Perth, they were all built and equipped by farmers themselves. Two of the factories are using the Babcock to divide the proceeds with the patrons. As showing how agriculture has been awakened on the Island, it is only necessary to mention that in 1890 there was but 10 acres of corn grown, while this year there are 5,000! In all three Maritime Provinces several silos have been constructed and all are giving good satisfaction.

**NOVA SCOTIA.**

There are now some 28 or 30 cheese factories in operation and several creameries. A number of new ones were started this season, the industry having received a great impetus. Mr. James Hopkins is in charge of the Experimental Dairy at Nappan, which early in the season was run for two weeks as a school for buttermakers specially, in addition to the regular work.

**NEW BRUNSWICK.**

Winter dairying was carried on at the Dairy Station at Sussex and some 30 makers were present for a couple of weeks receiving instructions, Messrs. Hopkins, Hubbard and Zufelt composing the staff. A travelling dairy is now at work, in charge of Messrs. Peters and Hubbard, who expect to visit about 70 places. Their plan will be similar to that carried on in the Northwest. The Dairy Commissioners' visit to the Maritime Provinces this month will awaken fresh enthusiasm.

**QUEBEC.**

A well-equipped dairy school, with a strong staff, was carried on at St. Hyacinth during the past winter, when no less than 238 students took a course in cheese and buttermaking, milk testing and the practical management of dairy farms. There was also a special course for the inspectors of dairy syndicates. Buttermaking will be carried on at the St. Hyacinth station this summer. Quebec has now some 800 cheese factories and about 130 creameries. The quality of the output of dairy products has greatly improved.

**ONTARIO.**

Operations in the Province are now confined mainly to developing winter dairying. Ontario has some 50 creameries and over 850 cheese factories in operation.

When, in addition to the above, the splendid work carried on by various Provincial Governments, through their Dairy Associations, with their travelling dairies, cheese instructors, etc., and such institutions as the Dairy School at Guelph, Ont., is all taken into consideration, that Canada should take front rank as a great dairy country is not to be wondered at.

### Annual Report of the Dairymen's and Creameries Associations of Ontario.

BY SECRETARY WHEATON.

[No other publication of the Department of Agriculture for Ontario is more widely read or more highly appreciated by the farming community than the annual reports of the Dairymen's and Creameries Associations of the Province of Ontario. This report for 1893 has lately been issued, and is now being distributed to those entitled to copies. It includes a verbal report of the addresses delivered at the Annual Convention of the Dairymen's Association of Eastern Ontario, the Dairymen's Association of Western Ontario, and the Ontario Creameries Association, and a synopsis of the work carried on by these organizations during the year. It contains 240 pages of spicy and interesting reading matter, filled with the latest thoughts and the newest ideas on all the important and necessary features of dairying in Ontario.]

Owing to the increased interest in dairy matters in the Province, these reports will be of more value to the farming community. The reports for 1893 are, on the whole, more valuable than many previous ones, from the fact that at one or two of the annual conventions more enthusiasm was aroused, more interest taken in the proceedings, and more beneficial discussion brought out than at any former gathering. The proceedings of the Western Association alone continued for three days, and comprised seven sessions of from 2½ to 3½ hours each, thus affording time for the discussion of all the varied phases of dairying. There is no better means of getting into a small compass practical information on many subjects than a convention of this kind. Speakers are always prepared to do their best and give information in the best form and in the smallest space, while the discussion is always terse and to the point.

Among the prominent agriculturists, dairymen and scientists who delivered addresses at these conventions are Hon. Jno. Dryden, Hon. Thos. Ballantyne; Jno. Gould, Esq., Ohio; Dr. Van Slyke, Geneva, N. Y.; John Boyd, Chicago; Professors Robertson, Fletcher and Shutt, of the Central Experimental Farm, Ottawa; Prof. Dean, O. A. C., Guelph; C. C. James, M. A., Deputy Minister of Agriculture, Toronto; D. Derbyshire, Brockville; D. M. MacPherson, Lancaster; J. S. Pearce, London, and a number of other practical men.

The addresses of these men, who are skilled in their own particular lines, serve to make this report of special value to every dairy farmer as a practical text-book on all branches of dairying, and also as a book of reference to which he can refer for information on any particular portion of dairy farming.

#### PAYING FOR MILK BY THE PERCENTAGE OF BUTTERFAT.

The system of paying for milk at cheese factories by the percentage of butterfat is taken up in all its bearings, and conclusive evidence furnished to prove that it is the only correct and just method of paying for milk supplied to a cheese or butter factory. The following are a few extracts bearing on this subject:—

Dr. Van Slyke—"All cheese factories have, until recently, paid for milk according to weight alone, and at present this is the almost universal method. Each patron receives, by this method, the same amount of money for each hundred pounds of milk delivered at the factory at any given time. This method is based upon the assumption that, for the purpose of cheesemaking, milk is milk; that all kinds of normal milk are of equal value for cheese production; that one hundred pounds of one patron's milk will make just the same amount of cheese as one hundred pounds of every other patron's milk. The old method can be fair only in case the foregoing assumption be true. Now, is it true that one hundred pounds of one herd's milk will make just the same amount of cheese as one hundred pounds of the milk of every other herd? We can answer the question by saying that in our investigation we have found normal milk, one hundred pounds of which made 8.25 pounds of cheese; and, again, we have found normal milk, one hundred pounds of which made 14.25 pounds of cheese. Here is a difference of six pounds of green cheese for one hundred pounds of milk, and between these extreme limits we have found all gradations. No more figures need be presented to show that milk varies greatly in its cheese-producing value, and, hence, it is not true that one hundred pounds of one patron's milk will make just the same amount of cheese as one hundred pounds of every other patron's milk. The old method of paying for milk is, therefore, founded on a false basis, and it is eminently unfair to pay the same price for one hundred pounds of milk, regardless of the amount of cheese that can be made from the milk."

Prof. Robertson—"I am glad, indeed, to know that the work of Dr. Van Slyke agrees almost mathematically with the work we have been carrying on for the past two years. The work we have been carrying on is not so thorough, from a chemist's standpoint, but it is almost as large, from a cheese-maker's standpoint, and the results agree almost identically in establishing that the cheese-making quality of milk is in proportion to the butterfat."

Prof. Dean—"The last argument is that, paying by this test, patrons are not likely to be accused wrongfully of tampering with their milk. If the new system did nothing more than this, it would

be well worth all the trouble and expense. If a man is once accused of skimming or watering his milk, that accusation stands as an everlasting disgrace upon him and his family. To avoid any chance of accusing an innocent man wrongfully would be worth all the trouble and expense of the new method."

D. M. MacPherson—"This Babcock test is one of the greatest improvements in our factories. It enables us to make better cheese and more cheese for a given quantity of milk."

A. T. Bell, Tavistock—"I am satisfied that what we want now more than any one thing is to have the milk well cared for, so that it will arrive at the factory in the best possible condition; not that we have arrived at perfection in the art of making cheese, by any means, but I believe we are nearer that goal than the patrons are in caring for their milk; and I do not know of any surer way of reaching that desired point than by adopting the system of paying according to quality. It is the testimony of all cheesemakers where this system has been adopted."

Inspector Millar—"When I inspected the cheese I found a vast improvement in the quality. I attribute a good deal of this improvement in the quality of the cheese to the introduction of this system of paying for milk. It also has a tendency to induce the patrons to feed their cows more liberally, give them better care, and in return they will receive larger profits."

#### WINTER DAIRYING.

This subject is treated in a systematic and practical manner by a number of speakers.

Prof. Robertson—"This winter dairying embraces the whole round of farm activity. From May to the beginning of the following October, cheese and buttermaking, and then from the end of October till the following May, buttermaking exclusively,—winter dairying and summer dairying; these include the whole round of dairy farming; and if the farmer will look after these things, keep his cows well, and then make a product of the very best kind, co-operating with his neighbors, he will find himself, through dairying, a richer man, a stronger man and a better man. Winter dairying will do more for the material welfare of the farmers than anything of which I have knowledge. It will result in making a people socially happy, and so well up in making money out of their business that they can leave their children better equipped to fight life's battles than they themselves were left. When we have winter dairying generally adopted, and through corn ensilage, horse beans and sunflowers, are getting the largest possible yield of the richest milk per acre as well as per cow, we will have harnessed the very sun of the heavens as the chief workman in our business, with ourselves as competent managers. Without the winter dairy, the farmer feeds one-third more stock for the same return. By sending the milk to the winter dairy, therefore, you not only receive more money for the cows you keep, but you are able to keep more cows. Doing the work at home, if the farmer attempts to increase the number of his cows, he imposes more work on the women folk than they can well take care of. The men on our farms work too hard in the summer and not hard enough in the winter. Our women work too hard in the summer, and then try to get rested by doubling the work in the winter."

Mr. James Whitton, Wellman's Corners—"Now, I claim it is the extra care that the cow gets which accounts for this; and we want to go on with winter dairying. I received last year from Prof. Robertson a cheque, for my share, of \$193 for eight cows, besides their skimmed milk, which I claim netted me \$75. I had eight pigs in the pens. Say they were gaining about one pound a day, as pork sold for \$6 per cwt. last winter. My cows last winter just cost me eight and a-half cents per day to feed. Consequently, I had a pound of butter for two and a-half cents. Now, if one of you can make cheese cheaper than that, I would like to hear it. I can give you a rough idea of what we took from these eight cows in 1892: Cash from cheese factory, \$505; by products, \$80—that is the sale of calves and the profit and whey; cash from creamery, \$193; by products, \$75—in all, \$855; cost of feeding these cows, \$294. That leaves a net profit of \$70.75 per cow."

J. A. Ruddick—"But now, when they find that by feeding a little extra and keeping the cow in good condition by proper care and attention, they can get from 95c. to \$1.10 a hundred for the milk, and have skim milk besides, and get ready cash for it instead of taking their butter to the store to be mixed with other makes, they are giving fuller attention to winter buttermaking. One of our patrons thought that the skim milk returned to him from the creamery paid him for the extra amount of feed which he gave to his cows for the winter time, and, if so, then he had his butter for the trouble of milking his cows and taking the milk to the factory."

D. M. MacPherson—"It makes a big difference in the profit of dairying whether you are working for the cows or the cows are working for you. We find in the best experience that the cows are working for us six or eight months in the year, and for the rest of the year we are working for them. We must harness the cows and use them every day. The cow can produce for ten months of the year. I make them work even when they are not producing milk, for I feed them so that they are improving their condition and thus preparing themselves to produce better results than they otherwise would do."

#### SELECTION, FEEDING AND CARING FOR DAIRY COWS.

The experience of a number of practical men is given on the selection, feeding and caring for dairy cows, so as to realize the most profit:—

Jno. Gould, Ohio—"Without trenching on what I am to say this evening, I may say that our winter dairy is becoming even more profitable than our summer dairy, because of our success with the silo. I am convinced that a man can keep his cows cheaper in the winter than in the summer. I figure it out this way: We can raise eighteen tons of good ensilage to the acre; it costs \$8 for the labor of raising an acre of corn, and \$4 to put it into the silo. Each acre will keep two and a-half cows seven months, or \$12 for the roughage for 2½ cattle, outside of the cost of the land. Let us say that interest on land and the taxes are \$2.70 an acre, a total of \$15 for the roughage for 2½ cows for seven months. If that is not cheaper than pasturing on grass, my mathematics are at fault. A cow eats more with her feet than she does with her mouth in our summer pastures. Our ration for our winter milkers is 50 pounds of ensilage a day, 5 pounds of wheat shorts, and 5 pounds of mixed hay. We have not succeeded in getting cows to eat much more than that. What does this cost us? Fifty pounds of ensilage will cost a little less than three cents. You may say I figure at cost. How else are you going to figure? What is the market price of ensilage? If there is no market, I have no right to charge it to my cattle at more than cost of production. Five pounds of wheat and shorts costs me four cents. But I must qualify that. We raise oats and swap them for the mill feed. Why? Because I find that with ensilage a hundred pounds of wheat shorts is worth as much to me as a hundred pounds of oats, and a hundred pounds of oats will buy a hundred and fifty pounds of mill feed, and so I have one-half more fertility to go back on the land. Five pounds of clover hay costs with us two cents. Call it 8½ or even 9 cents in round numbers for the ration of each cow. What are these cows doing on this ration? All the cows that we had milking last Monday had been in milk since last September or October. The average yield for the whole dairy was 28 pounds of milk per head per day. I sell that milk for \$1.40 net per 100 pounds at the door. That comes very close to 40 cents each for the cows, as against a daily cost for feed of 8½ cents. Then there is the fertility that goes back to the farm. I get all mixed up when I come to charging for crop, and then for fertility which is used to raise another crop. But the fertility is there, let it be worth more or less. That is my experience with the silo, and I thank you for your kind attention."

"It is now conceded, we believe, that the environments that we place about a cow in the way that we feed her, and care for her, are equal in importance to the breeding, for breed as we may, if there is not feeding and care to correspond, there will be a failure of the other; for, look at the matter as we may, the food is the source of all profitable returns from the dairy, and even food must have an ally in the form of stables and sanitary conditions of high order, or there will be a wastage of food material, or demand for extra supplies of nutriment to make good a demand that could have been met quite as well and far more inexpensively with well-appointed stable environments."

Prof. Shutt—"Of all the coarse, bulky fodders, corn gives us the largest amount of real cattle food per acre. The figures to prove this you will find in the report of this Association for 1891. They were deduced from the careful field experiments and analysis made at the Central Experimental Farm. Moreover, the corn crop is one that can be produced cheaply; it is more or less a sure crop; it is one that cleans the land—all very important matters. These are among the chief reasons why I so warmly recommend the growth of Indian corn to all who keep cows."

#### POINTS IN DAIRY AND FARM PRACTICE.

Hon. John Dryden—"What was the reason for this falling off? Undoubtedly, it was the tremendous drought which affected the whole Province, but more especially the Western section. Mr. Gould has told us of his friend whose cows never knew there was a drought. That is what is wanted: we must make provision for such unfavorable seasons. The dairyman, more than any other farmer, can provide for these special circumstances. There is no doubt he has his business more directly under control than any others of us. The man growing a crop of grain may work hard and exercise the greatest skill, and bring his crop nearly to the point of perfection, only to have it swept away by a storm. But the dairyman is not thus affected, and our people ought to be taught how to provide in advance for difficulties which may arise."

Prof. Fletcher—"The horn-fly is a new insect, which was introduced into the Eastern States five or six years ago. This is only the second year since it first appeared in Canada, but it has increased and spread so quickly that it has produced great consternation among cattle owners. The prevalent assertion that the flies or the maggots have caused the death of cattle by boring into the horns, head or body, is entirely inaccurate: the whole injury is due to the bites of the fly. However, the infection from this cause is in many cases so great that animals fall off rapidly, both in flesh and blood of milk."

D. M. MacPherson—"Farming can be made to pay, some who are called the best young men of our country—brilliant, talented men, with strong

ambitions—looking into the future, see no prospect for them on the farm, and they leave us for a foreign land, and there, very often, they make their mark. But if there was a prospect of a good return for labor employed on the farm, these young men would remain on the farm, and would assist in the development of our country as a whole. Farming can be made to pay even with hired help. In fact, the farmers of our country are working too hard—that is, they work too much with their hands and not enough with their brains. Competition today has its best rewards for brain-work, not for hand-work. In the days when the forest had to be felled, the strong man was the great man. But today the great man is the man of intellect, the man who understands nature's laws, and can so apply those laws as to benefit himself and those about him, and the country at large.

In addition to these subjects, there is also abundance of good, practical, definite information on the best practices in modern cheesemaking, the handling and caring for milk for cheese factories, the best methods of making fine butter, and of operating summer creameries. In fact, a comprehensive and systematic reading of the report will furnish every dairyman with the means of carrying on any branch of dairying in the most intelligent, skillful and systematic manner, and by putting into practice the valuable hints and information received, he will be better able to make the greatest amount of profit out of the business. If time and space permitted, extracts from the addresses of other prominent speakers might be given here with profit and advantage. But as space will not permit, we can only impress upon every dairy farmer and agriculturist in the Province the necessity of a careful perusal of these reports. These reports are mailed free to the members of the associations named in them, and other kindred organizations. It will pay every farmer to identify himself with some of these associations, in order to ensure getting this report, or in some way put himself in a position to receive one.

QUESTIONS AND ANSWERS.

[In order to make this department as useful as possible, parties enclosing stamped envelopes will receive answers by mail, in cases where early replies appear to us advisable; all enquiries, when of general interest, will be published in next succeeding issue, if received at this office in sufficient time. Enquirers must in all cases attach their name and address in full, though not necessarily for publication.]

Legal.

SUBSCRIBER, Deloraine, Man.:—"1. Under the Exemption Act three horses are allowed; must these all be working horses or would two work horses and a year-old colt be allowed? 2. Does the Exemption Act include a buggy?"

1. Three horses are allowed only in case they are used by the judgment debtor in earning his living. If the colt is not used it would not be exempt. 2. The tools, agricultural implements and necessities used by the judgment debtor in the practice of his trade, profession, or occupation, to the value of \$500, are exempt. This would not include a buggy, unless under such circumstances as would render the buggy a necessary for the judgment debtor in the practice of his trade, profession or occupation.

A SUBSCRIBER, Moosomin:—"A has a permit for hay on a section of H. B. C. Can A stop B's cattle from grazing on it?"

Yes.

SUBSCRIBER, Portage la Prairie:—"A friend of mine in 1890 bought of the Bell Organ Company, through one of their agents, an organ for \$135, giving six straight notes for the amount. Five of the notes were taken up, the last maturing in April, 1892. A payment was made on this last fall, 1893. Since then the company have demanded security for the balance, or in default have hinted that they would take the organ from her. My friend does not remember signing any agreement or lease whatever—only the notes. 1. Is this note still collectable? If so, what can they do? Can they take back the organ? 2. What terms do these companies usually sell upon?"

1. It is very likely that the notes given were the ordinary lien notes, and therefore the company can take back the organ if default is made in payment of any one of them. The note is still collectable. 2. The company takes every precaution to secure payment of the whole of the purchase price to themselves, and lien notes are a most effectual way of doing so.

MINNEDOSA:—"A owes B for wages and cannot get wages paid. A removed from the district two years ago and left a colt in charge of a neighbor to keep for him. Can B claim the colt without taking legal steps? B has written A several times, offering to take the colt as part payment, but cannot get an answer."

No; legal proceedings must be taken.

E. WIGREEN, Sidney, Man.:—"A lets B break 100 acres of prairie for the first year's crop. B, in consideration for a sum of money, gives C the right to put in the crop. C tries to let the breaking, but fails to do so, consequently the breaking has not been put into crop after the lapse of a year. When is A entitled to take possession of the said breaking; i. e., when does the privilege given to B expire, so as to enable A to get said breaking into condition for a crop for himself? As B and C have failed to crop said breaking, can B or C legally hold breaking over for another year?"

So far as we can see from the statement of facts, A has nothing whatever to do with C. As to the

lease to B, we presume that it is a proper lease, and that it is for more than one year. If so, then B can hold the land for the term provided for in the lease, subject to the terms of the lease as to re-entry by A, etc. If B's term has expired, of course A can at once enter on the land. In any event A will have an action against B for damages if he fails to keep his contract.

NEMO:—"I rent a house and two acres in Kildonan for one year, rent payable monthly, agreement verbal. After being on place short time, landlord informs me that he is going to build cottage on land for his own occupancy. I protest and object to his building at all, as I rented house and land. 1. Can he build a house under these circumstances? 2. Can I force him to remove building? 3. Can he force me to pay rent, and does his action break agreement? 4. Can he compel me to pay rent for a year, or can I leave at my pleasure?"

1. No; you can prevent him. He has no right to enter upon the land for such a purpose. 2. No; if he has got it built. 3. No; the rent is suspended and he cannot recover it, but his action does not break the agreement in other respects. You must keep the place and keep it in repair. 4. No; he cannot compel you to pay any rent since the time he first began to build, but you have no right to leave. Besides not paying rent, you have another remedy, however. You can bring an action against him for damages if you have actually suffered any.

Veterinary.

STOMACH STAGGERS IN PIGS.

G. C. PATON:—"Can you give me any information as to the cause of death in my young pigs? Two days ago I lost three—two about six months old, the other about two. When first I noticed them they appeared to turn slowly in a circle, with unsteady gait; an inclination when near a fence or other obstacle to force their way, and press their heads against any obstacle; heads pendant; very difficult and quick breathing toward the end; in a state of partial coma. They had been pastured on grass, and fed liberally on crushed wheat, cooked in water. They were not in the least costive, nor the reverse."

Stomach staggers, or gorged stomach, is a disease when we get an impaction of the stomach with solid food, and, in consequence of this, the muscular coat of the stomach ceases to contract on its contents, causing death from apoplexy. It is caused by over-feeding in young animals or too stimulating food. The actual congestion results from imperfect mastication, and the bolting of bulky food, more especially food liable to undergo fermentation, such as cooked food, musty hay, ripe vetch, clover, or any green food. Wheat and barley in young animals very often leads to a fatal result. The disease is not contagious, and a *post mortem* examination would reveal the stomach and intestines filled with partially digested food.

GARGET.

JOHN CARTER:—"I have a Holstein cow, three years old, calved one week. I cannot get any milk from front teats. I have tried different things for taking down swelling, but the lumps, about the size of peas, are still there, preventing the milk from flowing. What can be done to remove these lumps?"

Mammitis—Inflammation of the Udder.—This disease is known as Garget, Long Plough and a variety of others—is inflammation of the udder. Sometimes it comes on immediately after calving, caused by a too plethoric state of the system at the time of calving. These glands being very large, and intended by nature to secrete a considerable amount of milk for the nourishment of the calf, renders them very liable to attack of this complaint.

The symptoms are increased heat of the udder, attended with redness of the skin, which becomes hard and nodulated or lumpy. Upon attempting to draw the teats, instead of milk, a thin yellowish fluid will be obtained in the commencement of the attack, afterward small lumps, or, as we term, flocculi, come down, showing that an acid secretion has been formed, and the milk has been separated into curds and whey.

Treatment.—Fomentations of warm water must be applied to the bag and constantly persevered with, and the udder must be kept free from milk by allowing the calf to suck, and by continually drawing with the hand. Apply some stimulating liniment with a good amount of hand rubbing. With regard to internal medicines, give one pound of Epsom salts and one ounce of ginger, dissolved in hot gruel, and give when cool.

It is needless to say that serious affection of this gland should never be treated except by a qualified veterinary surgeon, for should the above means fail to arrest the inflammation, mortification quickly ensues, and a hard scurvyous state of the udder takes place, forming a very troublesome form of this disease. DR. MOLE, M. R. C. V. S., Toronto.

CASTRATION.

SUBSCRIBER, Killarney:—"What is the best age to castrate a colt? Some say while the colt is sucking; others, at a year old; others at two years old."

If the colt is well developed, and in good health, one year old is the best time to castrate. To castrate a sucking colt may, to some extent, stunt its growth, and, at that age, the testicles, in many cases, have not descended to the scrotum. If the colt's crest is not well developed, it might be advisable not to perform the operation till it is two years old. In this country (Mantioba) the best time to castrate colts is the period between May 10 and June 10. W. A. DUNBAR, V. S., Winnipeg.

ACTINOMYCOSIS.

OLD SUBSCRIBER, Springbank:—"I have two or three steers with lump in side of jaw; noticed first one four or five months ago; was undecided what it was, as it has never appeared in any of my cattle before. Could it be cured now, and, if so, how would I treat them?"

The disease is probably *actinomycosis*, commonly called "lumpy jaw." The treatment consists in the administration of drachm doses of the iodide of potassium, morning and evening, for two or three weeks. If the animals refuse to take the medicine in bran mash, give it as a drench in a pint of water. W. A. DUNBAR, V. S.

LIVER TROUBLE.

JAS. BLACK, Woodroyd, Man.:—"I had a four-year-old heifer die a few days ago, about three weeks from calving. On opening her to try to discover the cause of death, between the hide and the flesh there was a large quantity of a yellow frothy matter; when pressed, exuded a quantity of what appeared clear water, and all the external portion of the intestines were covered with a like substance. The lungs appeared to be in quite a normal condition, but the liver seemed to be unhealthy, so tender you could with ease put your finger through it. It was of a light blue color. She never showed any sign of sickness, always eating well, but for some time appeared to be getting weaker daily until she got too weak to get up, then in about three days she died. Will you please say what the complaint and what the best treatment. I may state that for the last four years we have been flooded with water in this district, and a number of cattle have died, apparently from the same complaint."

Your description of the case, including *post mortem* appearances, is too limited to warrant us in giving a decided opinion regarding the true nature of the disease.

Diseases of the liver, both acute and chronic, are frequently met with among cattle, especially in milch cows. A superabundance of stimulating food, insufficient exercise and bad ventilation are the most common causes of liver disorders. Congestion of the liver (*hyperaemia*) may exist for some time without attracting attention, as the appetite may not be perceptibly affected, and the only signs would be a little dulness and more or less constipation. Congestion, if not relieved, results either in inflammation of the organ (*hepatitis*) or the biliary disease called jaundice. The condition of your cow's liver would indicate that it had been softened by inflammatory action. The treatment of inflammation of the liver should consist of the application of a smart cantharidine blister to the right side of the abdomen, and the bowels acted upon by the following purgative:—Sulphate of magnesia, one pound; fluid extract of taraxicum, six drachms; ginger, two drachms; dissolve in one quart of hot ale; add half a pint of syrup and give in one dose. After the purgative has freely acted, give morning and evening a quart of gruel, for a week; hydrochlorate of ammonia, four drachms; fluid extract of taraxicum, three drachms. If the bowels should become torpid after the purgative has acted, their action should be assisted by administering injections of warm water and raw linseed oil per rectum. Feed moderately on roots and sloppy, easily-digested food. W. A. DUNBAR, V. S.

FURTHER PARTICULARS REQUIRED.

ENQUIRER, Blake, Man.:—"I have a horse, six years old, that is troubled with his water, especially in spring. I gave him sweet nitre and saltpeter regularly. Is there any cure?"

There are so many ailments of the horse ascribed to "some trouble with his water," when there is really nothing wrong with the urinary apparatus, that, unless you describe the symptoms more fully, we cannot form a correct diagnosis of the case, and, therefore, would not be justified in prescribing a remedy. W. A. DUNBAR, V. S.

Miscellaneous.

The following inquiry from "Subscriber," Wawanesa, should receive the careful consideration of manufacturers of the articles for which he inquires. We would refer "Subscriber" to the stacker illustrated in the June 5th issue of the FARMER'S ADVOCATE as being cheap, simple of construction, and an extremely likely-looking arrangement. But maybe some of our readers can help him out. Question:—"Please let me know, through your paper, if any hay-forks are made in this country, or sold by agents, that will work out-doors; also the best plan for fixing up, and the probable cost of same?"

E. J. H. CARNDUFF:—"1. Should the following parts of agricultural implements be oiled while at work: The chain and cog gears of binders, the bearings of land rollers, and seeders, and plow coulters? 2. How many hens should be allowed to a rooster? 3. What is the cost of well-bred Plymouth Rock rooster, and where could I get one?"

1. It is not generally best to oil large chains and cog gears, especially where there is any sand in the soil. Regular shaft bearings should be oiled, and these are generally provided with oil-cups. On sandy soils, exposed bearings would cut out faster if oiled than if left alone, as the oil collects so much dust. Judgment must be used for individual cases. 2. From 10 to 25. 3. Consult out advertisers.

POULTRY.

Poultry Keeping as a Business.

BY JOHN J. LENTON.

In establishing any business of a commercial nature, it is of great importance that the right locality be chosen. First determine which branch of the business offers the greatest inducements, viz., the production of eggs, early chickens for broilers, or dressed poultry for market. In the vicinity of large cities and towns, the first two are by far the most profitable, as there is always a very strong demand for these. For dressed poultry for the general market, the locality is not so important. In practical poultry farming, all three branches will naturally follow in order during each season. A good locality where there is a firm market for all branches promises the best trade. The first essential requisite to success in poultry-keeping is

A GOOD HOUSE.

It should be adapted especially for the branch of the business for which it is to occupy the owner's attention. The very frequent mistake made by nearly all beginners and amateurs is that of building without regard to ventilation, or inside conveniences in caring for the fowls. In constructing our poultry houses the first point to be considered is economy in all of the details, not only in cost of the materials and the constructing of the house, but in the arrangements, so as to save both labor and time in the daily care of the flock. Too often these very essential points are lost sight of, and right here is the very place that decides the results of the net profit or loss.

Next in order is

CONVENIENCE.

Too much care cannot be paid to this particular at the very start. Practical poultry farming is a business made up of small items, which of necessity takes valuable time and skilled labor to perform; so we must be impressed with the importance of making all arrangements in and about our poultry house of the most convenient shape. We must remember, in the construction of the roosts, nests, feed boxes, etc., to have them placed beside the main walks of the house, to be readily removed and quickly replaced at the time of cleaning and lime-washing the interior, as time is money. To have an economic house we must have a convenient, labor-saving one, especially so as regards the grain bins, the vegetable pits, and the water supply, which should come from a capacious cistern and be drawn by an inside pump. Of course a commodious shed will be attached to one of the houses, to be used as a work shop, a feed room, a store house for coops, etc. A stove or range should here be set up for boiler use, to heat water and cook food, vegetables, etc.

Turkey Culture.

BY E. JOHNSTON.

The raising of turkeys on any farm within reasonable distance of a good market is a profitable side issue of farming. Turkey culture solves the problem of the wife's or daughter's pin money better than almost any other occupation open to them, with a smaller outlay and quick returns. Yet the many who begin with great expectations, through inexperience, fail, and have not the persistence necessary to work out success through failure. The object of this article is to furnish beginners a few instructions, which, sensibly applied, will save them some mistakes and consequent disappointments.

It has been my experience that the best way to start is to buy a trio of good birds of the preferred variety. The first expense is greater, but the money comes back the first year in the greater number marketed. And it pays to start with good stock. Among the several varieties, I prefer the Mammoth Bronze, on account of their disposition to pull down the scales when it comes time to fat and sell. The toms of this sort, when six months old will weigh from eighteen to twenty pounds; the hens from ten to thirteen. A three-year-old tom often tips the scales at forty-five or fifty pounds, but as the old birds grow ugly, and as turkeys deteriorate by inbreeding quicker than any other class of fowls, it is not best to keep them beyond this age. If one's neighbors raise turkeys also, to choose a distinctively different breed will be a great aid in separating the flocks when they get together, as they almost surely will if at large, and avoiding any disputes over ownership. The White Holland is good under such circumstances. If this cannot be done, there are leg bands sold for marking, which are useful but rather expensive; or a system of clipping the wing feathers slightly may be adopted, though this disqualifies the birds for exhibition purposes. Strict watch must be kept on the hens when they begin to lay, for they are very secretive, and often wander to quite a distance to hide their nests. The first eggs should be set under a hen (common fowls) not over nine days. The hen turkey will lay from thirteen to fifteen eggs, then stop a few days and begin again. The first set on the best clutch. The eggs set under a hen should be so marked as to show that about the same time, then one or other will do for two broods a season. Thirty days being the period of incubation, those that are good faithful sitters, one much more preferred as incubators.

If possible, let the hen turkey sit where she has made her nest, as she does not, generally, bear removal well. Her food must not be neglected, for she is so faithful that she will almost starve before she will leave her nest to seek it. Only one person should visit her, and that person should be very quiet and gentle in every movement, that the hen may become tame and easily handled when she "comes off." The turkey retains enough of its wild habits to always hatch best when allowed to sit on the ground, and if turkey eggs are given to common hens in nest boxes, fill the boxes half full of earth and put a little chopped straw on it.

When the little fellows are hatched trouble begins. They are very tender and require careful looking after until they are six weeks or two months old. Movable coops on sod ground are preferable, and should be surrounded by yards fenced off with boards a foot high. The coops and yards are to be changed as the soil becomes foul. The coops should be roomy and have good roofs, for the little turks are to be confined in them during wet weather. When they are strong enough to fly out of the yards, the mother may be given her liberty and allowed to lead her flock about after the dew is off, and in dry weather. Young turkeys must not get wet—nothing will thin their ranks so quickly as being out in a shower or getting drabbed in wet grass. As soon as the common hens show a disposition to discard their families it is well to put the broods all together in charge of the hen turkeys, and that the young may be accustomed to each other they should be cooped near together. Whatever provision is made for housing the young, look out for the tom, for he has a way of killing them that is very unfatherly and particularly exasperating.

The newly-hatched turks will not eat much for a couple of days. They should have a little egg custard before them (which may be made of stale eggs if they are on hand), or crackers or bread and milk—not made sloppy, however—to teach them to eat. Then the curd from sour milk comes in good, and in a few days cracked corn partly boiled is stirred into the curd, with a pinch of pepper in rainy weather. They are particularly fond of green onion tops, cut fine, and sweet milk is given for drink. They should be fed five times a day for the first two weeks, as their growth is so rapid they need constant supplies of food, but only what they will eat up clean should be given at one feed. When they are three weeks old a corn-bread moistened in milk, or a bread of mixed cornmeal, coarse flour and bran, takes the place of curd, and they are fed three times a day. Never feed raw meal, unless you want dead chicks. When a month old give wheat screenings and cracked corn scalded. As soon as they are past the danger point, or six or seven weeks old, they can be left pretty much to themselves, after their breakfast of boiled potatoes, made thick with bran or meal, but should be fed every night a grain ration to induce them to come home at night.

The first year I kept turkeys I wore out my temper and a pair of shoes chasing after them. Then I decided they roved by nature, and let them do so. By feeding at night they were prompt in coming to the roost. Always count them every night. If any are missing, hunt them up. I have always allowed mine to roost on trees, or under an open shed, as they chose, and most of them take to the trees. But I always market the flock at Thanksgiving, and after that those I keep over are caught and put in a large henhouse by themselves, which is not too tight and with high roosts. I keep over a tom and about six hens. I prefer a two-year-old tom and year-old hens, as they lay better, earlier and give more eggs, and, as I work for an early market, the quicker I can get them hatched and growing the better the results. Do not be content with an average of less than fifteen pounds. Change your male bird every other year, at the very least. This is some trouble and expense, but turkeys will not bear inbreeding to any extent. Allow not over ten hens to one male. Unless you are going into the business quite extensively, five or six hens are enough to keep over. Keep the best birds.

You can safely calculate, one year with another, on a loss of twelve per cent. of all that are hatched. Sometimes they seem to "turn up their toes" out of sheer perversity. When this is the case lice will usually prove to be the cause of the trouble, and especially on those hatched under common hens. Insect powder should be freely used on the hens and in the nests; and if lice are found on the young turks, grease their heads, under the wings and round the vent, remembering that too much will prove as bad as the lice.

One must make up his or her mind to constant care and a good deal of hard work for a couple of months. One "forgot" may undo all the labor that has gone before. And neglect is the prime factor in failure. The turks get soaked in a sudden shower, or go half a day without food at the critical age, and die off as if they had the plague. But I have raised \$125 worth of turkeys, at an expense for food of \$38; I do not count my time and the countless steps I took, because if I had not chased after turkeys I should have trotted after something else, and I felt well repaid with \$80 in my pocket—after paying the little helper, to whom I said, "Run for the turks, dear; its going to rain!" so many times, and paying for the grain fed. I had every bushel of the latter measured out to me with scrupulous exactness, because of a conviction on the part of my other half that "the damned turkeys would eat

more grain than they'd ever pay for." And aside from the cash, there was a solid satisfaction in saying "I told you so!"

Lest any one be too envious of my success, I will say it was only after four years' experience I made the above record. The first year I cleared five dollars, and never worked so hard in my life. It made me sick to hear anyone say "turkey," and I am sure I should never have tried it again but for the pitying silence of the man of the house, who meant to be very considerate, but to my disposition was peculiarly exasperating. I made up my mind I could raise turkeys "after I got the hang of it," and now find the work—not easy, by any means, but fairly remunerative; and a plump roll of greenbacks on market day makes one forget past discomforts.

GARDEN AND ORCHARD.

The Effect of Marketing Poor Fruits.

BY J. R. HOWELL.

The fruit grower of the future will appreciate fully the damage he does to himself and to other fruit growers when he sends a barrel or carload of unsightly fruit to market, or that which is of poor quality or small size.

I acknowledge that this is a difficult question to handle. Fruit growers are not so much interested in the public weal as they are in their own personal welfare. Therefore, so long as the individual can make it appear that his own personal interests are consulted by selling his grapes before they are ripe, or by selling small strawberries with the large ones, or wormy pears with the good, small and colicky apples with the perfect ones, it is possible that he may continue to do so, and yet cannot everyone see that it would be profitable if all fruit growers could consider the advantages resulting from their sending to the market only the finest specimens?

It seems to me too much cannot be said on the subject. Test the question for yourself. Go into the market and buy a basket of oranges, take them to your home and divide them among your family; if these are of fine appearance, juicy and sweet, will not every member of the family smack their lips and will you not be tempted to return to the market often for a new supply? But, on the other hand, supposing these oranges prove to be sour or almost all rind, do not you and other members of the family decide that these few oranges are more than enough? Or, supposing you are not living in a section of the country where grapes are grown, and you purchase for your family a basket of grapes that have a fine appearance, and distribute them among the different members. It is soon found that while they appear fine, they have been gathered before they were ripe, and in consequence they are extremely sour and scarcely edible. Are you tempted to enter the market again and buy more of these grapes? Not at all. Yourself and your family decide that no more grapes are wanted; they have had enough of this kind of fruit, and as they can get bananas or berries, the grapes are no longer patronized. Or, supposing you go into the market and purchase a very handsome basket of Kiefer pears—this variety is exceedingly beautiful to look at, "and being among the best varieties for canning is one of the poorest for desert"—and you anticipate great pleasure in dividing them among your friends. But when they attempt to eat them they find the quality is disappointing, hence you decide that you do not want to buy any more pears. Someway, you are not fond of pears as you once were. You are not informed about the different varieties of pears, and judge all varieties by this very poor one. This is the natural consequence of everybody who buys a poor fruit of any kind; they condemn everything from the poor specimens which they have tested. Or, supposing you buy a barrel of apples which have a fine appearance on examination at the top of the barrel, but on opening the barrel at your home you find that the good specimens are all on top and that the remainder are small, knotty and wormy. Are you not tempted to get along the rest of the season without apples? If this is the case with yourself or with one family, what would be the result if all families and all the people of the country had such an experience in similar lines of purchase? Can you not see how they will be discouraged from buying fruit after having bought these which possessed poor quality, or were poorly assorted, or not what they were represented? Is it not plain that if our fruit could be marketed in more reliable shape so that customers could be assured that the grapes they purchase would be of good quality, and that the apples would be well assorted, and that the peaches would not be bitter from yellows, would not the consumption of the country be increased ten-fold within a short time. You who are complaining of the glut in the markets think of these things and be spirited enough to attempt a reform, even though it may not appear to be largely profitable to you at the beginning. But it is profitable to the individual, for those who buy this superior fruit will sooner or later learn what manner of man he is who puts it up. On the other hand, if he sells fruit that is picked before maturity or fruit that is dishonestly packed, his customers will avoid him and he will lose his trade.



**A Curate's Temptation.**

(Continued from page 239.)

III.  
In his own room once more, Oswald took out the purse, and examined its exterior carefully. Then he opened it, and turned its contents out on the table. His head swam as he saw the unusual glitter of gold; and with amazement he counted the coins. Five sovereigns, two half-sovereigns, and a total of sixteen shillings in silver. He surveyed the treasure with startled eyes, and murmured: "It is a fortune; such a sum would tide us over our present difficulties, and with Edith strong again, I could once more try for work." Then he pushed the money from him, crying: "I will not be tempted; I will not imperil my soul; I will return it!" He half turned, as if to carry his purpose into instant execution, but suddenly remembered he had no means of tracing the owner. As the thought occurred to him, he once more examined the purse, but, despite himself, he could not help feeling relieved when he found neither name nor address. Stay! In his hurry he has overlooked the ticket pocket. What is in it? A card! He draws it out, and in astonishment reads—"Mr. George Morley, 39 Burton-crescent, W. C."

"What!" he cried. "This is indeed miraculous. My father's friend, the man who owed so much to him. Surely the hand of the Almighty is in all this! I will go to him. He will help me for my father's sake. Ah! but will he? Did I not write to him some months ago? Did I not open my soul to him, and yet he has not even deigned to reply to me. Alas! my last hope is dead. Doubtless he will take his money and let me and my darlings starve. Yet no, by Heaven it shall not be. For myself I care nothing, but they shall not suffer. Let the sin and its consequences be mine, and mine alone; I will keep what God has given into my hand." He paced the room excitedly, still dragged first this way and then that, by conflicting emotions, till he was roused by the entrance of his landlady.

She paused as she noticed the strange, stern look on the curate's face. Then, standing by the open door, said: "I'm mortal sorry to trouble you, Mr. Campion; I'm sure 't grieves me sorely to think of your good lady ill up-stairs, but I am in great straits myself, and if I don't get some money I'm sure I don't know what will become of us."

The young man looked at the woman gravely as he answered: "You have been more than kind to us, Mrs. Martin; you have helped us when you were ill able to do so, and, believe me, I am not ungrateful. Is your present need so very great?"

"Indeed it is, sir. You know I'm a widow with no one to help me, and now the baker says he won't leave any more bread without the money; and the landlord has just called for the rent, and declares he'll distrain to-morrow."

"I owe you 42," Mrs. Martin. Will that be sufficient for your wants?" said Campion quietly.

"Oh, yes, indeed, sir, more than enough," answered the woman, her face brightening.

"God be merciful to me, and pardon my sin!" said the curate to himself. "I cannot let this woman and her little ones suffer on my account—the temptation is too great."

Then aloud: "Take your money, Mrs. Martin; there is plenty on the table."

As his landlady stepped forward, he turned to the window so that she could not see his face, for he feared that his emotion would betray itself.

"Oh, thank you, sir," said Mrs. Martin, as she picked up the coins. "I'm truly glad to see you with so much—as much for you and your dear wife's sake as for my own. Then, as he did not speak, she withdrew quietly.

Campion turned from the window, trembling violently. "Thus," he cried, "are my fetters forged. Now, there is no escape!" Then he added, bitterly, "I am fit to be neither saint nor sinner. As I have fallen, at least let me face my crime like a man. If I have lost my soul, I will take its price as my reward, and behave like a man, not like a weak-minded boy."

He gathered up the money, and without waiting to give himself time for further reflection, ran up-stairs to his wife's bedroom.

The girl was awake, and received him with a look of love. She noticed at once his excited face, and, gently drawing him towards her, said:

"Have you had good fortune, dear?"

"Yes," he replied, cheerfully. "Indeed, I have. See here!" and he showed her his hand full of gold and silver.

The girl's face flushed with pleasure. Not for a moment did any possible suspicion of his honesty enter her mind. She trusted him to the fullest extent, and was too weak to question how he had become possessed of so much.

She kissed his face as he bent over her, and murmured: "I am so thankful, Oswald; now I can go to sleep comfortably; to-morrow you shall tell me all about your wonderful good luck."

Someone tapped gently at the door. The nurse came over to him, and whispered, "You are wanted, sir." He arose quietly, and with one fond glance at his sleeping wife, descended the stairs. Then he underwent a sudden revulsion of feeling. He pictured to himself that the police were waiting for him, to charge him with theft. Before his mind rose a vision of his denunciation by the owner of the lost purse, and in a state of nervous agitation he laid his hand on the handle of the sitting-room door.

IV.  
As the curate paused irresolutely at the door, Mrs. Martin handed him a card; but his head swam so much that, in the dull light, he in vain tried to read. Mastering his emotion, he flung open the door, and with the pastboard still in his hand, entered the room. He stopped, and almost staggered back, as he saw a short, stout gentleman standing with his back to the fire. Instinctively he recognized the owner of the purse, and an intense horror took possession of him. His crime had found him out full soon, and with the desperation of despair, he advanced like a culprit to his doom. But as the mists cleared from his eyes, he saw that his visitor's face did not bear the look of an avenging Nemesis. His mouth was parted with a genial smile, and the soft eyes shone with good humor.

The stranger sprang forward, as he saw the curate, and grasping the young man's hands in his, said, in a voice quivering with excitement: "My young friend, I am delighted to find you at last. Believe me, this is a happy meeting to me."

Bumfounded at his unexpected reception, Campion was silent for a moment; then he exclaimed in a stiff manner, the better to conceal his agitation: "Sir, I am at a disadvantage. I have not the pleasure of your acquaintance."

"What!" said the other, in surprise. "You have my card in your hand. Do you not recognize the name? I am George Morley, your father's friend."

"True, true," murmured the curate, absently; "but what has that to do with me?"

"Surely you are not well. What has it to do with you? I intend it shall have a great deal to do with you. Besides, did you not write and confide in me?"

"Yes, but that is long ago. You did not answer my letter."

"Now, look here, young man, don't be ready to take umbrage. Your letter only reached me two weeks ago, when I returned from the continent. You gave me your address at Middlethorpe, and a nice hunt I've had to find you. I went down there at once, but your late doctor couldn't tell me your

present place of residence. I've been looking for you ever since, and had almost given up in despair, when, not an hour ago, I luckily thought of Pearson; he knows all the parsons, and, by a curious coincidence, he said you had only left him; in fact, your card was still on his desk; so I came on at once."

"Did Mr. Pearson tell you why I had called on him, and how he received me?"

"I don't remember that he said anything special; but he mentioned that you were looking for work, though I don't know whether that's quite a correct word to use with respect to a clergyman's duties."

"And why have you sought me out now?" asked Campion, huskily, his intense feeling making him brusque and almost discourteous.

"Oh, look here, Campion," said Morley, rising, "your whys and wherefores are getting too much for me. Don't you know your father helped me very materially in my early days, and now I want to do something to repay the debt."

"And how can you tell that his son deserves your assistance?" Then, springing to his feet, he cried: "I cannot, dare not tell you why, but you shall not help me; I am unworthy of it!" Then he sank down on a chair and buried his face in his hands and groaned in anguish. "If I had but waited!" he thought. "Had I but resisted temptation for one short hour, all would have been well, and I should have been an honest man. Now, I can never hold up my head again."

Morley stood looking at the young man for a moment in silence, then he gently approached him, and laying his hand on his shoulder, said kindly:

"Campion, for your father's sake, you must let me help you. Whatever wrong you have done, or think you have done, need not affect the question. You are overwrought, and doubtless exaggerate matters. But, be that as it may, whether your fault is real or imaginary, it is not against me. Campion once more sprang from his chair, and facing his visitor, cried out, as though the words were rung from him by torture:

"You! Yes, it is against you and God, that I have sinned. Did you not lose your purse to-day?"

"Yes, I did; but how do you know that?"

"I saw you drop it. I picked it up. I, that you imagined honest and upright, have stolen your money and paid my debts with it."

"But you did not know whom it belonged to?"

"I did. Your card was in the purse."

"Ah!"

"I see," said the curate, almost with relief. Now you appreciate the true character of the man you offer to assist. Go, call in the police, and give me up to justice."

Morley's face became overcast, and a look of deep sorrow settled upon it. He sat in silence for a few moments, that seemed an age to the man cowering before him. Then he said, in an authoritative, yet kind voice: "Campion, I am an old man, and your father's friend. I beseech of you to look on me as standing in his place, and tell me all about this sad affair. Do not seek either to condemn or excuse yourself, but tell me as simply and as straightforwardly as though you were speaking of another."

Thus assured, the young man described in detail the doings of the day, in a voice often broken by his agitation. He did not seek to palliate his offence, but his narrative showed how circumstances had combined to urge him to dishonesty.

The elder man listened to him attentively, but in silence. Then, as he concluded, he took his hand in his and said: "My poor friend, your tale has greatly moved me. Believe me, the money is of no importance to me, but I dare not ask you to look lightly on your sin. You use the hard term theft for your act, but I do not think it is that. I am not a lawyer, but I imagine that the law has a milder term for such offences. However that may be, now, more than ever, I claim my right to help you. If you accept my assistance, a useful career is before you, and your error will serve as an incentive to future work. Then I ask you to think of your young wife and helpless child. Surely they appeal strongly to you to take the help I offer you."

"You heap coals of fire on my head," murmured the young man, in broken accents.

The two men sat talking far into the evening, and when Morley rose to leave, he had gained his point. The curate had learnt the lesson, that oftentimes appears so hard to believe, that if God is willing to forgive, it is meet that man should not condemn himself too severely, and should accept human forgiveness, if fully and freely offered.

The Rev. Oswald Campion is now a well-known preacher. He holds an important living in the south of England, and his preaching has drawn a large congregation around him. It is not his eloquence or rhetorical display that effects his hearers, for he speaks in simple language, as an erring man to fellow-men liable to fall into temptation, and the sincerity of his words none can dispute. His early error has impressed his soul, and he never tires of preaching the doctrines of mercy and forgiveness.

**Nobody Else.**

Two little hands so careful and brisk,  
Putting the tea things away,  
While mother is resting awhile in her chair,  
For she has been busy all day.  
And the dear little fingers are working for love,  
Although they are tender and wee—  
"I'll do it so nice," she says to herself—  
"There's nobody else, you see."

Two little feet just scampered up-stairs,  
For papa will quickly be here;  
And his shoes must be ready and warm by the fire  
That is burning so bright and so clear.  
Then she must climb on a chair to keep watch—  
"He cannot come in without me."  
When mother is tired, I open the door—  
There's nobody else, you see."

Two little arms around papa's dear neck,  
And a soft downy cheek against his own;  
For out of the nest, so cosy and bright,  
The little one's mother has flown.  
She brushes the tear drops away, as she thinks:  
"Now he has no one but me."  
I mustn't give way; that would make him so sad—  
And there's nobody else, you see."

Two little tears on the pillow, unshed,  
Dropped from the two pretty eyes;  
Two little arms stretching out in the dark,  
Two little faint sobbing cries.  
"Papa forgot I was always waked up  
When he whispered good-night to me;  
O, mother come back, just to kiss me in bed—  
There's nobody else, you see."

Little true heart, if mother can look  
Ow from her home in the skies,  
She will not pass to her haven of rest,  
While the tears dim her little one's eyes.  
If God has shed sorrow around us just now,  
Yet His sunshine is ever to be!  
And He is the comfort for every one's pain  
There's nobody else, you see.

—Mary Hodges.

**Well Put.**

A woman is like the pins she uses. She generally has a head of her own and a point to carry, and she will make herself useful and shine wherever you put her. But get her crooked, and somebody is going to get hurt; and if she loses her head, she is worthless.

**THE QUIET HOUR.**

**God's Appointments.**

This thing on which thy heart was set, this thing that cannot be,  
This weary, disappointing day, that dawns, my friend, for thee,  
Be comforted; God knoweth best, the God whose name is love,  
Whose tender care is evermore our passing lives above.  
He sends thee disappointment? Well, then, take it from His hand,  
Shall God's appointment seem less good than what thyself had planned?

'Twas in thy mind to go abroad. He bids thee stay at home!  
Oh! happy home; thrice happy if to thy guest He come.  
'Twas in thy mind thy friend to see. The Lord says, "Nay, not yet."  
Be confident; the meeting time thy Lord will not forget.

'Twas in thy mind to work for Him. His will is, "Child! sit still."  
And surely 'tis thy blessedness to mind the Master's will.  
Accept thy disappointment, friend, thy gift from God's own hand;  
Shall God's appointment seem less good than what thyself had planned?

So day by day, and step by step, sustain thy failing strength  
From strength to strength, indeed, go on through all the length  
of thy journey's length.  
God bids thee tarry now and then, forbear the weak complaint;  
God's leisure brings the weary rest, and cordial gives the faint.

God bids thee labor, and the place is thick with thorn and briar;  
But He will share the hardest task until He calls thee higher.  
So take each disappointment, friend; 'tis at thy Lord's command!  
Shall God's appointment seem less good than what thyself had planned?

—Margaret E. Sangster.

"The truth comes to us more and more the longer we live, that on what field or in what uniform, or with what aims we do our duty, matters very little, or even what our duty is, great or small, splendid or obscure. Only to find our duty certainly and somewhere, somehow to do it faithfully, makes us good, strong, happy and useful men, and tunes our lives into some feeble echo of the life of God."

**Relaxation.**

Work when you work, but when the measure of one's duty is done, then thoroughly relax. There is as much virtue in refreshing soul and body by yielding up all responsibility and care as there is in the courageous meeting of active obligations. When we have done our best, and worked to the limit of our capabilities, then we should rest upon the law of life, and, with the faith of a little child, feel assured the Father is all good, and what is, or must be, is best.

If we faithfully do our duty, and repose in peace upon the will of the Father for results, we may have the freedom from anxiety that gives each moment of rest thorough relaxation and pleasure. New strength then flows to us abundantly for the sustaining of the next obligation duty places in our path. It is thus we conserve our energies and are faithful servants in the required hours of service. One can exhaust more force in an hour's unnecessary fretting than would enable him to do a day's work. It is the useless worrying that ages, and robs mature life of its beauty and power.

Fretting and worrying never turned a wheel or brought sustaining help to any crisis. We are but children in the arms of the Infinite Father, and rebellion breaks our powers upon the wheel of the law, but does not change the turning of the wheel. In harmony with the law, we are carried onward and upward. Resistance is our own destruction.

That which we cannot make or break is not our care. When our daily duty is done to the best of our cheerful ability, we must rest in heart and brain, in soul and body, and feel that the wisdom that produced the marvel of life has a crown for its brave fulfillment. Thus petty trials are forgotten, and great ones dignified.

**Mites.**

There are some people who get weary of life's work and become disheartened because they are kept all the time doing little things. They see here and there a man or woman doing great things, and their lives seem very unimportant in comparison. They long to be doing great deeds. They think God does not care much for the little they do. To all such the blessed Master says: "He that is faithful in that which is least," is the faithful man. Whoever does his lowly, humble work well and faithfully, day by day, and hour by hour, is pleasing God just as well as he who does great things. And nothing is small in God's sight which is done for love of Him.

Great men came far with their wealthy offerings for the temple treasury. There were gifts of gold and gifts of silver. The very smallest offering that day was the gift of the poor widow who came, sandal-shod, wearing tattered garments, and bearing on her face the stamp of hard, grinding poverty. Her gift was so small that it would hardly be counted among the great gold and silver coins that were poured into the treasury.

But Jesus sat by and watched how men cast in, and He said that she had done more than they all. Her gift pleased Him most.

MINNIE MAY'S DEPARTMENT.

Chats Upon the Porch—1.

"You women who live in the city have so much:—lectures and concerts, theatres and parties, books and people, and—chances. We have nothing."

Bella uttered the plaint as we sat upon the porch, after the early tea.

"Nothing?" queried the city woman.

"Oh, well," we have food and clothing, shelter, and a certain amount of kindly family affection, of course—but we haven't opportunities."

"For what?" asked her listener.

"For culture, and daintiness, and the cultivation of friendship."

There was silence for a few moments while the evening sounds drifted toward them:—of cluckings in the poultry-yard, a faint 'moo' from the barn, the shrill, full chirp of the field cricket, and the slow creaking of a wagon along the road.

"Are you sure that you have nothing beyond the essentials you have mentioned?" inquired the city woman.

Belle opened her eyes widely. "You see for yourself," she said. "In the morning we are busy with housework and the dairy; after dinner we sew, or tend the garden; after tea, there is the milking,—and then we are tired, and there is nothing left but bed. It is our daily round."

The city woman looked toward the sunset. "You have that," she said, with a gesture sweeping out toward the horizon. "You have those hills and woods, and that great stretch of fields, for your outlook every hour of your day."

"But they are always the same," protested Belle.

"They are never the same," answered her friend. Their beauty varies with every hour, and every passing cloud. From your doorway and window you behold fairer pictures than any art gallery can give. Oh! you want to live in a city house, having doors that open upon stone pavements, and windows that look upon dead brick walls or back sheds, before you can properly appreciate the full sweep of sky and hill and field that is about here."

"But an outlook is not a means of culture," protested Belle, gloomily.

"Isn't it?" queried the city woman, laughingly. "We who are of the city, coming into view of such a landscape, deem it a mighty means of grace. It is the easiest thing in the world to grow irritable and nervous and worn, shut between brick walls. But out here—why, one can send all one's weaknesses and irritations tossing over those green fields or among the hill tops, and grow rested and stilled in the sunshine and sweetness."

"And, then, for music," she continued. "You have the birds, singing as they never sing in the city; and the frogs,—now don't laugh, for we city folks really like to hear their evening chorus—the field cricket and all the hum of insect life; and softer still is the rustle of the tree boughs, the whispering of the grain, and the little, low stir of the pasture greenness. Your days and nights are filled with a music that we never hear. Your concerts are held in pure atmosphere, your singers are ever in tune—and the admission is free."

"Which is why we do not appreciate them," asserted Belle's brother, in undertone.

"Again, you have a leisure that we have not," pursued the city woman. "Perhaps not in the busiest seasons, but certainly during many months of the year. Time to sew, to make neighborly visitings, to take long hours of sleep; and leisure is also a means of grace to a woman; for we need time in which to pay attention to little daintinesses of person and dress, of manners and ways. It takes a woman time to be dainty and gracious, fresh and sweet. A tired woman is always an irritable and ungracious woman. We who are of the city are often driven from one duty to another, from one engagement to another. We are at the mercy of a city full of people, and between postman and agent, home duties and social life, we are often utterly unable to withdraw into the stillness and repose so necessary for spiritual growth; and that may be yours every day, if you choose."

"But we want something to fill the leisure," said Belle.

"Yes," answered her friend. "You want thoughts, high thoughts and these will come chiefly from observation and from books, carefully read. You women of the country do not read enough."

"Books give new views to life And teach us how to live."

"You want books to teach you to see, and books to teach you to hear; you want your eyes opened to this beauty of field and hill, and ears made attentive to nature's sweet sounds. You starve yourselves in the midst of plenty; you remain dwarfs when you might be giants."

Belle looked up from her seat upon the porch steps.

"If we were to read and study, if we took books and papers, and tried to do you really think we could grow as contented as city folks?" she asked.

"A cultured city folks!" corrected the woman, smiling. "A city contains rougher classes than even the country possesses. Yes, I am quite certain

that country life should be an aid rather than a bar to growth of spirit, as we know it is to the body. Strong bodies and generous souls are born of country living. We recruit the city ranks from the country. Our nation's foremost men come from the fields and hills—for only there can they take time and find pure air in which to grow."

"My little friend,"—and the woman of the city turned with tender look towards the brown-eyed girl—"believe this above all else, that growth must be from within; that neither city opportunities nor country freedom can give to us that knowledge that we are not ready to receive. Let none say, 'Lo here or lo there, for the kingdom of God is within us.'"

"But how shall we cultivate the kingdom?" queried Belle, timidly.

"Live always up to the best that is in you—don't poke too much at the roots; keep in the sunshine; keep clear of drought, and you'll grow," answered the city woman, with her gentle smile.

MINNIE MAY.

DEAR MINNIE MAY:—

"Seeing that article in the ADVOCATE, regarding 'How to Cook Husbands,' I think it would be a good thing for you to offer a prize for 'How to Cook Wives,' as many of the male tribe don't seem to know the proper way to go about it.

I remain,

Yours truly,

A VERY MUCH INTERESTED READER." Beverley, Man.

The article referred to appeared in April 15th issue, and as the question raised by our correspondent is an interesting one, we will be pleased to hear from any of our readers, on the subject of "How to Cook Wives." Those holding old and tried recipes for the same will be conferring a benefit upon inexperienced cooks by sending in these recipes for publication. Address:—

MINNIE MAY,

Office of the FARMER'S ADVOCATE.

Recipes.

BEEF LOAF.

Take 3½ pounds of beef, chopped very fine—round steak is best; 2 well-beaten eggs, 6 small crackers rolled fine, 1 cup sweet milk, a piece of butter size of an egg; salt, pepper and sage to taste. Mix well, press into a bread tin, cover with a tin, and bake 2½ hours, occasionally basting with butter and hot water.

SCALLOPED POTATOES.

Four large, cold, boiled potatoes, peeled and sliced; 2 tablespoons butter, 1 pint hot milk, 2 tablespoons flour. Melt butter and add hot milk and flour; when thick, add salt, pepper and parsley. Put a layer of mixture in bottom of baking dish, then a layer of potato, and so on, milk coming last. Cover with cracker crumbs and bake 15 minutes.

LAYER CAKE.

One cup sugar, 2 eggs well beaten, ½ cup butter, ½ small cup milk, 1½ cups flour, 2 tablespoons baking powder. Bake in three tins.

CHOCOLATE CREAM FILLING.

Five tablespoons of grated chocolate, enough cream or milk to wet it, 1 cup sugar, 1 egg, 1 teaspoon vanilla flavoring. Stir the ingredients over the fire until thoroughly mixed, having beaten the egg well before adding; then add the flavoring after it is removed from the fire.

STRAWBERRY SHORTCAKE.

For this dish use 1½ quarts of strawberries, 1 cupful sugar, 1 pint flour, 1½ teaspoonfuls of baking powder, ½ teaspoonful salt, 2 tablespoonfuls of sugar, ¼ of a cupful of butter and a scant ½ cupful of milk. Slightly mash the berries and sprinkle over them 1 cupful of sugar. Measure 1 pint of flour after it is sifted. Add to it 1½ teaspoonfuls of baking powder, 2 tablespoonfuls of sugar and ½ teaspoonful of salt; then sift again. Rub into the flour ¼ of a cupful of butter. Mix it with a scant ½ cupful of milk. Butter well a Washington pie plate, place the dough upon it, smooth, and press it evenly into the plate with a spoon. Should the dough stick to the spoon, dip a clean spoon in flour and smooth with it. Bake in a quick oven until done—about twelve or fifteen minutes. Remove it to a china plate. Split the cake carefully with a sharp knife. Butter the lower half well and cover with a part of the mashed berries. Place the upper half of the cake on this, the crust side on the berries. Butter this and cover it with the remainder of the fruit. Before serving, heap whipped cream over it, and you have a dish fit for a king.

In the frequent enumeration in our literary journals of striking short poems, it is strange that no one has included Charles Henry Webb's "Revenge":

Revenge is a naked sword— It has neither hill nor guard. Wouldst thou wield this brand of the Lord? Is thy grasp, then, firm and hard?"

But the closer thy clutch of the blade, The deadlier blow thou wouldst deal: Deeper wound in thy hand is made— It is thy blood red as the steel.

And when thou hast dealt the blow— When the blade from thy hand is flown— Instead of the heart of the foe, Thou mayest find it sheathed in thine own!

Sound philosophy, as well as good poetry, in the above!

UNCLE TOM'S DEPARTMENT.

Puzzles.

PRIZE PUZZLE.

1—RIDDLE.

Never straight you see me. Yet I'm not awry; My favorite habitation is Up in the sunny sky. Soft and sweet my nature Unto you may seem, Yet the fondest words I turn Into weapons keen.

ADA ARMAND.

2—SQUARE WORD.

My FIRST is "a play," in verse or in prose, My SECOND is "taxes," as everyone knows, My THIRD is a book we all study at school, My FOURTH is "a measure of fish from a pool," My FIFTH is "an item in any man's favor." I can't find a rhyme, so I'll cease from my labor.

H. D. PICKETT.

3—CHARADE.

I've got a feeling within my heart For to do a puzzle great. But strive as I may this feeling to meet, I feel I'm FIRST SECOND to perform the feat.

Now, if I was clever and TOTAL like F. B., I should be LAST to do it; But FIRST being built in that style, I'll quit, before I rue it.

HENRY REEVE.

4—RIDDLE.

A title have I, and good education— More than some people—no overation; I'm a medium of teaching good manners and art, And in the schoolboy's studies I play a great part. Philosophers, poets, principals, teachers and youths, All delight to emerge in the midst of my truths; But the queerest thing about me, and absurd, Is that, though I tell many things, I can't speak a word.

THOS. W. BANKS.

5—ENIGMA.

A circle I am—you'll think then I'm nought; You ne'er in your life were more out in a thought, For whether I'm made of wood, iron or gold, A circle more precious man's eyes can't behold. Yet those best informed are said to declare I am but a name for vexation and care; Yet let not this knowledge, dear friends, much distress ye; I think I can promise you'll never possess me.

Answers to May 15th Puzzles.

1—Sin.

2—

P U L P  
O T A L G I A  
L E A S E R  
T I D S O R L I  
I O M P E N D I U M  
I N G A R I D A T I O N  
S U R E P T I T I O N S  
Politicians. Parliaments.

3—There-in.

Corpulency and Its Treatment—How to Get Thin.

The Vegetarian says:—"It is very foolish for persons to live on lean beef and water to reduce obesity, because this is merely starvation; and though they will certainly reduce their obesity by this method, they will also reduce their strength and bring down their constitution. A simple diet of brown bread and fruits will reduce obesity far better than any nostrum, and the good of this diet is that it will invigorate the body and keep up the strength. Of course the diet should be accompanied with proper exercise—walking is the most suitable for fat people, because in it the whole body is exercised, and not one set of muscles at the expense of another. When the dishes are not unduly elaborate, people do not eat too much; when the diet is plain and simple, they will take what they want. Rich and elaborate cookery causes persons to eat more than is good for them, and brings on undue obesity and many other disorders. Of course all fat people tell you they are small eaters, but whatever they do eat they eat more than is necessary to keep them in health and strength, and the extra is packed on as fat that they do not want. Persons should not try to reduce themselves to emaciation; they should have sufficient fat on their bodies to round off their angles and prevent their bones staring people in the face. Fat persons have always a better time of it when they take ill, because if they cannot eat for a day or two their system is supported by their fat, and they will often live through an illness that would kill a thin person. So, although persons should not be so fat that they would be unwieldy or unable to perform their daily duties, they should not use unnatural methods to make themselves thin. If any person finds himself getting too stout he has only to reduce his meals, to eat less at each meal, and to let himself be always hungry for his meals, and to take regular daily exercise."—The Journal of Hygiene.

Wise Knowledge and Wise Ignorance.

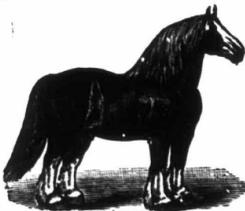
As the mind of man is so limited in its ability to receive and retain, there must be a continual selection going on between what to know and what to refrain from knowing. The wise man has discovered that of the vast amount of truths and facts and wonders and ideas with which the universe is teeming, only a small fraction can by any possibility be his; and his intelligence has no more important task to perform than that of deciding not only what to choose, but what to refuse. Thus, wherever there is a wise knowledge there is also a wise and necessary ignorance.

**HORACE N. CROSSLEY,**  
PROPRIETOR OF THE  
**SANDY BAY STOCK FARM,**  
Importer and breeder of  
**SHIRES, HACKNEYS, AND COLLIE DOGS.**



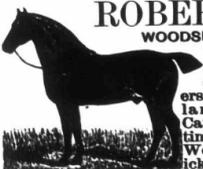
The above stud, though only commenced in 1890, has achieved unparalleled success at all the leading Canadian shows, such as Montreal, Toronto and London, also at the CHICAGO WORLD'S FAIR. The most notable in this stud are, the Shire horse Bravo II, 12835, winner of first at Toronto, Montreal and London, and also beating all Clydes at the latter show in the sweepstakes. Hackney Fireworks No. 3602, winner at Chicago, Toronto and London. Shires and Hackneys always on hand for sale. For further particulars apply to the Proprietor, ROSSEAU, Muskoka. 10-a-om

**CLYDESDALES & HACKNEYS**



We have a few choice, young stallions that will be sold away down. Also a number of superior fillies bred in the most popular lines, in foal to our sweepstakes winner, Grandeur. We will make prices right. Come and see us or write for particulars to **D. & O. SORBY, - GUELPH, ONT.** 6-2-y-om

**ROBERT NESS,**  
WOODSIDE FARM,  
Importer and Breeder of Yorkshire Coachers, French Coachers, Clydesdales, Shetlands and Ayrshire Cattle. Prices to suit the times. **ROBERT NESS,** Woodside Farm, Howick P.O., P.Q. 5-y-om



**ARTHUR JOHNSTON,**  
Greenwood, Ont.



**GRAND YOUNG BULLS.**

Offers for sale at very moderate prices, a number of exceedingly good young bulls fit for immediate service, and a number of excellent young cows and heifers, all fit to show at leading exhibitions. Send for Catalogue, Greenwood P. O. and Telegraph Office, Claremont Station on the C. P. R., or Pickering Station on the G. T. R. Parties met at either station on shortest notice. Come and see my cattle. 4-2-v-om

**A. J. C. SHAW & SONS,** Thamesville  
Breeder of Shorthorn Cattle (Daisy Chief - 13674 - Heads the Herd), Cleveland Bay Horses, Berkshire Pigs and Cotswold Sheep. Young stock for sale at low prices. Farm near Thamesville. 12-2-y-om

**CARGILL HERD OF SHORTHORNS.**



Stock from imp. bulls and imp. and home-bred cows. Catalogue now in printer's hands. Send for one. **H. CARGILL & SON,** CARGILL, ONT. 11-y-om



**SHORTHORNS.**  
I have FOR SALE two Shorthorn heifers and two bull calves of fine breeding, fine colors, fine form and carriage, in fine condition, at fine cut prices. Also one or two cows.  
**D. ALEXANDER, BRIGDEN, Lambton Co., Ont.** 11-y-om

**Deep Milking Shorthorns**

**WM. GRANGER,** London, Ont., offers for sale some exceedingly good cows and heifers. Fair Maid of Hullett 2nd, now at test at Chicago, is only a fair specimen. Dams made thirty pounds of butter in seven days. Come and see them: they are good ones. 14-2-y-om

**ADVERTISE IN THE ADVOCATE**

**Grand Dispersion Sale**  
OF  
**JERSEYS, HOLSTEINS, SHROPSHIRE & DORSET HORN SHEEP**  
AND  
**CHESTER WHITE PIGS.**  
**JOSEPH STRATFORD, Brantford, Ont.,**

INTENDS OFFERING FOR SALE DURING THE MONTH OF JUNE OR JULY, DATE NOT YET POSITIVELY SET, ABOUT TWO HUNDRED THOROUGHbred SHROPSHIRE SHEEP AND FIFTY LAMBS, DORSET HORN EWES AND LAMBS, INCLUDING SHEARLING EWES AND RAM LAMBS OF BOTH BREEDS. ALSO A LARGE HERD OF REGISTERED JERSEY AND HOLSTEIN CATTLE, ALL AGES. . . .

This Sale will offer an opportunity for Canadian farmers to put in a foundation stock of any of the above, at prices they have never been sold for or offered in this country before. Mr. Stratford's business for years past has rested with the Americans, and he is fully determined now to see if it is not possible to bring about a revival action with our Canadian farmers in the matter of handling these different breeds of cattle and sheep. The Jerseys are from the original stock of Valancey Fuller, at Waterdown. The Holsteins are of the Royal Aeggie family, while the Shropshires and Dorsets are from the best flocks in the United Kingdom. Watch for date later on, and don't miss the first grand opportunity of buying, at farmer's prices, the best kind, and from the best flocks ever sold in Canada. 10-c-o

**ISALEIGH GRANGE FARM, DANVILLE, P. Q.**

**SOLD AGAIN!** Three of the four Guernsey bulls advertised by us are sold and delivered. We still have one more, the 3rd prize calf at the World's Fair, now fourteen months old—a dandy. Lowest price, \$200.

**IMPROVED YORKSHIRES.**—We claim to have the longest, deepest and most typical LARGE YORKSHIRES in AMERICA, and the reason is we have paid more money and imported more pigs from the best herds in England than any two Yorkshire breeders on the continent. Orders booked now for spring pigs. Two very handsome COLLIE BITCHES, seven months old, \$10 each. Address, **J. Y. ORMSBY, Manager.** 9-y-om

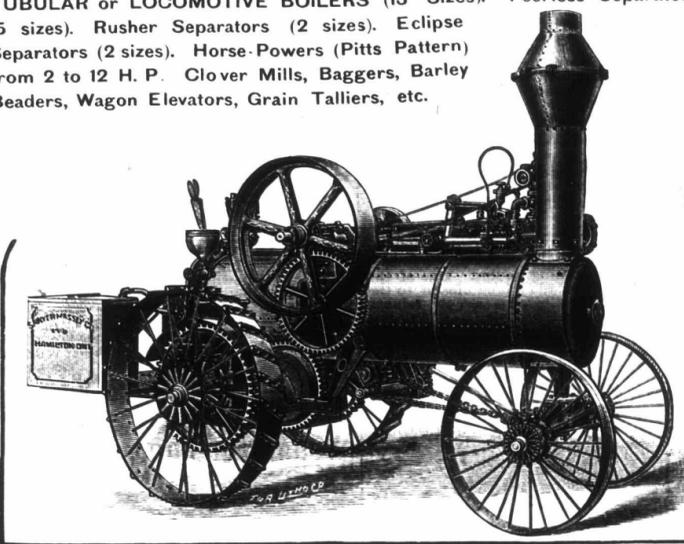
**JERSEY CATTLE FOR SALE**

Bred for butter. G. sons and g. daughters of "Massena," the greatest cow of her age in the world,—8,000 lbs. milk and 654 lbs. butter in her 16th year; also stock from "Signal of Belvedere," whose dam made 20 lbs. 6 ozs. butter in one week on second calf. Also stock from the greatest living prize bull, Canada's Sir George, whose dam made 26 1/2 lbs. butter a week and 57 lbs. milk a day. Splendid bulls, six months old and registered, \$100 each.

**MRS. E. M. JONES, Brockville, Ont., Can.**  
Mrs. Jones' great book, Dairying for Profit, 30c. by mail. Address, **ROBT. Y. BROWN, Agent,** Box 324, Brockville, Ontario, Canada. 8-y-om

**HAMILTON ENGINE AND THRESHER WORKS,**  
Established 1836.

Manufacturers of Portable and Traction Engines, with either RETURN TUBULAR or LOCOMOTIVE BOILERS (13 Sizes). Peerless Separators (5 sizes). Rusher Separators (2 sizes). Eclipse Separators (2 sizes). Horse-Powers (Pitts Pattern) from 2 to 12 H. P. Clover Mills, Baggers, Barley Beaders, Wagon Elevators, Grain Talliers, etc.



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**Central Prison Binder Twine**  
OF PURE MANILLA ONLY.

Each Bale (of 12 balls) contains 50 lbs. net weight of Twine, running from 600 to 650 feet per pound.  
A FULL POUND OF TWINE DELIVERED FOR EVERY POUND PAID FOR.

**It will Bind More Grain for Less Money than any other Twine in the Market.**

PRICE, \$8.65, IN LOTS OF NOT LESS THAN 100 LBS.  
DELIVERED AT NEAREST STATION. CASH TO ACCOMPANY THE ORDER.

FOR SALE BY  
**JOHN HALLAM,**  
Highest Cash Prices Paid for WOOL. 85 Front St. East, TORONTO.



correspondence promptly answered. 2-2-y-om

**IMPORTED SHORTHORNS.**

**D. D. WILSON,** SEAFORTH, Ont.  
INGLESIDE FARM, IMPORTER AND BREEDER OF SCOTCH SHORTHORNS.

Imported stock from the herds of Wm. Duthie and W. S. Marr for sale; also Canadian-bred from imported bulls and out of imported dams. Farm one mile from G. T. R. station. 7-f-om

**SHORTHORNS.**

We have seven bulls from twelve to fourteen months old, from our best sires and dams, of choicest Scotch breeding, that, for hair, color, size, feeding qualities, constitution, general style and character, cannot be equalled, and we will sell them low. Also some show heifers for sale.  
**JOHN MILLER & SONS,** Brougham, 12-2-y Ontario.

**SHORTHORNS, SHROPSHIRE AND BERKSHIRES**

Choice young stock of all the above breeds always on hand, and for sale at reasonable prices.

**W. G. PETTIT,** 13-y-om Freeman P. O., Burlington Stn., G. T. R.

**WESTRUTHER PARK**

Herd of Bates Shorthorns, consisting of Oxford Barrington, Waterloo, Gwynne, Darlington, and other families, has outgrown the place and must be reduced in numbers. Four yearling bulls and a number of females for sale, at lowest prices and on liberal terms. Farm a mile from the station.

**JOHN IDINGTON,** Stratford. 24-y-om

**MAPLE LODGE STOCK FARM.**

We have a few excellent young Shorthorn Bulls for sale yet, and some nice young Berkshire ready to ship.  
**JAS. S. SMITH,** Maple Lodge P. O., Ont. 5-2-y-om

**SHORTHORNS, BERKSHIRES,**

Shropshires, Plymouth Rocks & Bronze Turkeys. Write me for prices on the above. I have a grand litter of Berkshire Pigs now ready for sale. **H. CHISHOLM,** Montrose Farm, Paris, Ont. 18-2-y

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Sired by imp. Prince Royal, and from dams with all imported crosses, also cows and heifers. **J. & G. TAYLOR,** Rockwood P.O. & Station. 6-2-y-om Farm close to station.

**CRUICKSHANK SHORTHORNS**

of the Duchess of Gloster family. A few straight-bred young bulls and heifers by imp. Duke of Lavender. **THOS. ALLEN & BROS.,** OSHAWA, ONT. 8-2-y-om

**SCOTCH-BRED SHORTHORNS FOR SALE**

**6 Choice Young Bulls**  
And the Imported Cruickshank Bull  
**ABERDEEN HERO,** Their sire. Also some nice  
**Young Heifers,** From one year old up. Prices to suit times.  
**SHORE BROS., White Oak.** 20-2-y-om

**GUERNSEYS**

This is the Dairy breed for ordinary farmers. Large, vigorous and hardy, giving plenty of rich milk. Imported Bull Benett, son of Vice-Pres. Morton's famous butter cow Bienfaitrice 4th, heads the herd.  
Address: **SYDNEY FISHER,** Alva Farm, Knowlton, P.Q. 16-2-y-om

**WANTED TO PURCHASE.**

**PURE BRED KERRY BULLS AND HEIFERS**  
ADDRESS—**D. McEachran,** Montreal, Que., Canada. 10-c-om

**CHOICE HOLSTEINS FOR SALE**

I have a few very nice pure-bred registered Bulls and Heifers for sale at very reasonable figures. Write, or come and see me.  
**JOHN A. LINE,** Sherwood, Ont. 6-2-y-om Richmond Hill Station.

**HOLSTEIN BULLS FOR SALE.**

Three extra fine bulls from 12 to 14 months old, sired by McMaster, whose dam had a record of 86 lbs. of milk per day; write for prices.  
**WM. SEEBRING,** Seebingville, Ont. 10-2-y-om

**SUNNYSIDE HOLSTEIN-FRIESIANS**



Choice animals, either sex, all ages, for sale at any time. Correspondence solicited. Address: **McDUFFEE & BUTTERS, Stanstead, P.Q.** 16-y-om

**HOLSTEIN BULL CALVES**

Dropped in February and March, if taken before three weeks old.

**AT \$15 EACH.**

If required to register them, purchaser to pay registration fee.

**F. A. FOLGER,**  
Box 578, Rideau Stock Farm,  
**KINGSTON, 4-2-f-om ONTARIO**

**HOLSTEIN-FRIESIANS AND TAMWORTH PIGS.**

Four very superior young bulls for sale, ready for service. Prize winners at the Industrial. Sired by our prize-winning bulls and out of rich-bred dams. Other stock of all ages for sale. Bargains to quick buyers. Please order with us for choice Tamworth imp. and Canadian bred pigs of best quality, bred of prize-winning stock.

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New Dundee, Waterloo Co., Ont.  
Shipping Stations, Petersburg, G. T. R. and Ayr. C. P. R. Send for catalogue. 12-3-y-om

**THE GREAT MILK AND BUTTER HERD OF HOLSTEIN-FRIESIANS.**

**SMITH BROS., Credit Valley Stock Farm,**  
CHURCHVILLE, PEEL COUNTY, ONT.,  
(24 miles west of Toronto).



This is the place to get stock of best quality at reasonable prices. We have seventy-five head, including prize-takers; best strains, cows and heifers, with large milk and butter records young bulls of superior quality. Send for catalogue. 8-2-y-om

**MAPLE HILL HOLSTEIN-FRIESIANS.**

The fine yearling bull Netherland Consul, a son of the silver medal bull Netherland Statesman's Cornelius, and the great cow Polianthus imp., that gave 1316 lbs. milk in a year at two years old, now for sale. He should go to head a herd. **G. W. CLEMONS,** ST. GEORGE, ONT. 12-y-om

**PURE-BRED HOLSTEIN BULLS FOR SALE**

A few choice, one-year-old Holstein Bulls for sale, at reasonable prices.

**CROIL & McCULLOUGH,**  
12-b-om **Aultsville.**

**DOMINION PRIZE HERD OF AYRSHIRES**



We have the oldest established, largest and best herd of Ayrshires in Canada. Choice young stock for sale at liberal prices. Satisfaction guaranteed. **JAMES DRUMMOND & SONS,** Petite Cote, Montreal, P.Q. 8-2-y-om

**Prize-Winning AYRSHIRES FOR SALE.**

I have at present one of the largest and best herds in Ontario, which have won many prizes in the various exhibitions. I have a few choice young bulls for sale, also a few cows and heifers. Write for catalogue. **MAGGIE OF ROCKFORD**

**JAS. McGOVICK & SON,**  
ROCKFORD, ONT. 2-2-y-om

ADVISE IN THE ADVOCATE

**FOR SALE**

**2 EXTRA GOOD AYRSHIRE BULL**

Calves, nearly ready for service; one out of Second Prize Cow at World's Fair, the other out of Cow that took two Second Prizes at Montreal; sire Hamilton Chief out of one of Messrs. D. Morton & Sons' best Imported Cows, by Imported Bull Royal Chief; also some Poland-China Boar Pigs.

2-2-y-om **W. M. & J. C. SMITH, FAIRFIELD PLAINS, ONT.**

**THE GLEN STOCK FARM**

**AYRSHIRES**

—AND—  
**BERKSHIRES.**

A few good Ayrshire bull calves and heifers, Berkshire boars and sows. For particulars write

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7-y-om **INNERKIP, ONT.**

**J. YULL & SONS,**  
Meadowside Farm,  
Carleton Place, Ontario

Our herd is composed of seventy-five head. Leonard Meadowside—142—, first prize at World's Fair, heads the herd. Cows of the deepest milking strain, having won several medals at provincial tests. Shropshire sheep and Berkshire pigs. Young stock of both sexes for sale. Visitors welcome met at train. Give us a call. 7-y-om

**A. McCALLUM & SON,**  
Sprucehill Farm, Danville, Que.

**Pure-Bred Ayrshires & 6-f-om Berkshire Pigs.**



Champion Dairy Herd of Ayrshires at various government tests. Prize winners at the World's Columbian Exposition, Chicago. Write **MESSRS. ROBERTSON & NESS, Mowick, Que.** 19-y-om

**JERSEYHURST FARM, LOCUST HILL, Ont.**

**ROBERT REESOR,** importer and breeder of A. J. C. C. Jerseys of the choicest breeding, with the bull Jay St. Lambert 32813 at the head of the herd. Stock of all ages on hand and for sale. 16-2-y-om

**GLEN ROUGE JERSEYS**

**WILLIAM ROLPH,** Markham, Ont., offers twelve Jersey Bulls and Heifers (pure St. Lamberts), out of tested cows. Grand individuals. Prices right. 19-y-om

**JERSEY-CATTLE**

Of the heaviest milking strains. One of the largest herds in Canada; bred closely to the great dairy cow at Chicago, also the famous two-year-old. Sires of both were sold from this herd. Also Welsh Blood Ponies for ladies' and children's driving. Stock for sale always on hand. **Geo. Smith & Son, Grimsby, Ontario.** 3-y-om



Jersey Cows, Heifers and Calves, registered and High Grades, rich breeding and good colors. Our motto: "Individual merit by inheritance." Economy of production and value of product. Pedigrees written in butter. Come and see our address.

**J. C. SNELL,**  
3-y-om **EDMONTON, ONT.**

**FOR HEREFORDS**

WRITE TO

**F. A. FLEMING,** 3-y-om **Weston, Ont.**

**Ingleside :- Herefords.**

ANXIETY 4th, and THE GROVE 3rd Strains.

**Prize Winners for '94**

SPECIAL OFFERING OF

**CHOICE YOUNG BULLS.**

English and American, of all strains, for sale at a very low price. Write for catalogue. Address: **H. D. SMITH,** English Farm, COMPTON, Que. 18-2-y-om

**1881—SHROPSHIRE—1881**

My flock is established since 1881. All my ewes are imported and selected in person from the most noted English flocks. A choice lot of shearlings and lambs sired by a Bradburn ram. Write for prices to

**JAMES COOPER,**  
14-2-y-om **Kippen, Ont.**

**FOR SALE.**

**SHROPSHIRE RAMS (Registered)**

—AND—  
**SHORTHORN BULLS (Registered)**

Also a few females. Apply to

**C. HARLESTON IRVING,**  
"Bonshaw Farm," NEWMARKET.  
P.O. Box 288 10-2-y-om

**SHROPSHIRE.**

Foreign buyers are invited to visit the Wolf's Head Flock, as there is always a good selection of ewes and rams for sale, and we handle none but the best, and can supply selected specimens for breeding or exhibition purposes, and residing in the centre of the Shropshire Sheep Breeding District buyers are assisted in selecting from other flocks. Write for prices or visit us before going elsewhere. Visitors met by appointment at Baschurch Station, G. W. R. Address—**J. & T. THONGER, Wolf's Head Farm, Nesscliff, Baschurch, Shrewsbury, Eng.** Telegram: Thonger Nesscliff. 2-2-y-om

**SHROPSHIRE - FOR - SALE**

My whole flock of 50 head of Imported Rams and Ewes, a few home-bred Shearling Rams, and a choice lot of lambs of both sexes. Also a choice lot of young Yorkshire Pigs.

**T. H. MCDRAFT,** Sparta, Ont. 19-y-om

**BEAM - HOUSE - SHROPSHIRE**

**This is the Home of the Blue Bloods.**

**WM. THOMAS** offers for sale Rams and Ewes from his famous flock, which has sent so many winners to our leading shows, and here also was bred Mr. A. O. Fox's noted ram "Blue Blood Yet," which so ably piloted Mr. Fox's flock of Shropshires at the World's Fair. Wm. Thomas will have several grand shearling rams for sale this next season, sired by his grand old sheep "Blue Blood," and also a grand lot of shearling rams by other noted sires; also about 150 splendid shearling ewes to select from. Foreign buyers always welcome. If not able to come and select for yourselves, write and obtain prices from **WM. THOMAS, The Beam House, Montford Bridge, Salop, Railway Station: Baschurch, G. W. R.** 2-2-y-om

**HENRY ARKELL,**  
Arkell P. O., Ont.

Importer and breeder of Oxford down sheep, winner of nine prizes out of ten entries at World's Fair. Fifty rams and ewes for sale, both imported and Canadian-bred; 100 ram and ewe lambs for 1894, from Royal and World's Fair winning rams. Prices reasonable. Write and obtain prices from **WM. THOMAS, P. R.; Telegraph, Guelph; Telephone, Arkell.** 7-1-y-om

**Imported OXFORD AND SUFFOLK SHEEP**

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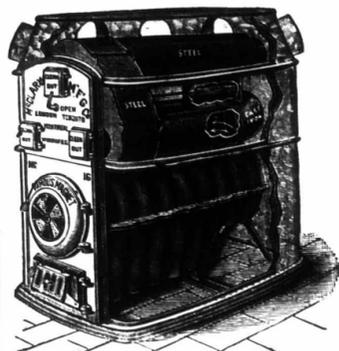
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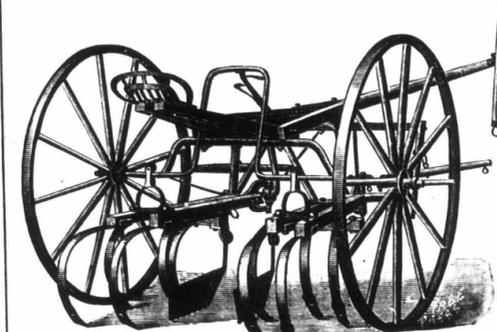
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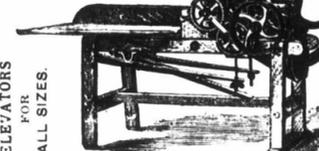
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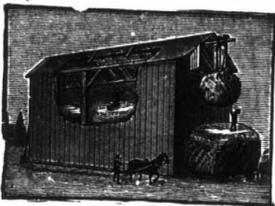
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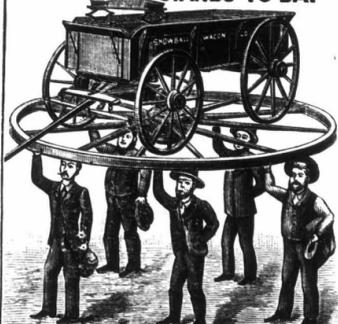
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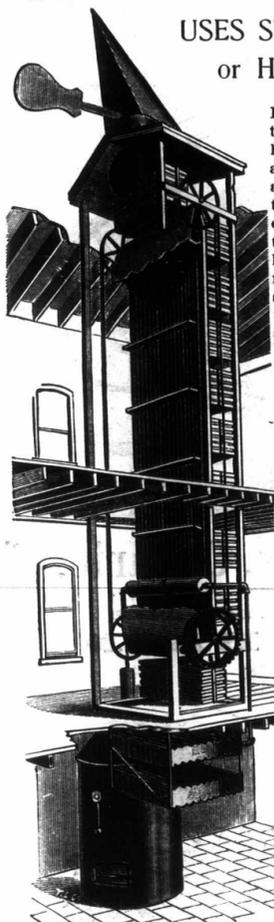
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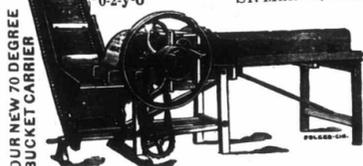
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**We Guarantee every pound of Twine we make.** 10-f-co

**Many Old Farms** require so much fertilizing **Won't Produce a Profit.** The rich, loamy soil of Michigan Farms produces a fine crop without this expense. The near markets, general healthfulness of climate and freedom from cyclones, blizzards, together with good society, churches, etc., make Michigan Farms the best in the world. Write to me and I will tell you how to get the best farms on long time; low rate of interest. **O. M. BARNES, Land Commissioner, Lansing, Mich.** 23-L-o

**NOTICES.**

In writing to advertisers please mention the Farmer's Advocate.

The annual meeting of the American South-down Breeders' Association, without transaction of business, adjourned from May 30, 1894, to July 4, 1894, at 2 o'clock p. m., in the Illinois National Bank, Springfield, Illinois.

When passing Messrs. Geo. White & Sons' office a few days ago, we observed six portable engines ready for shipment. They informed us that their shipments at the present time were averaging from three to six carloads a week. This speaks well for the popularity of the "White" Engines.

**THE SAWYER-MASSEY CO.**

A few days ago one of our staff had the pleasure of going through the extensive works of the Sawyer-Massey Co., Hamilton, Ont. This firm make a specialty of manufacturing portable and traction engines for burning either coal, wood or straw. What is called the "Locomotive Traction Engine," very simple in construction and strongly built, is, as might be expected, attracting a great deal of attention. All the boilers for Manitoba and the Northwest are covered with asbestos, hair, wood and Russian iron, in order to retain the heat in extreme cold weather. Leaving the engine store-houses, the visitor finds of special interest the buildings in which separators are stored. A large number of their standard Peerless Separators of various sizes were noticed, also Monitor separators and clover mills, for which we may say there was a very great demand last season. As the ideas, and in fact the requirements of threshermen, vary in different parts of the country, the output has to be varied accordingly. What may be a satisfactory threshing outfit in Ontario or Eastern Canada, for example, would not "fill the bill" in the Prairie Province. Hence, the Sawyer-Massey Co. do not confine their attention to the threshers above mentioned. A new machine, embracing several special features of excellence, said to be very popular, is the Russer. There are also the Eclipse and Columbian separators, both of which are especially adapted for farmers' own use, or those who only require small, light running machines. Where engines are not required, the firm are prepared to supply their customers with horse-powers of the Pitts pattern, varying in size from two to twelve horse-power. A complete line of attachments, both for engines and separators, are always kept in stock. The attention of our readers is directed to the new advertisement of the firm in this issue.

**LIVE STOCK REPORT—WORLD'S COLUMBIAN EXPOSITION.**

This office is in receipt of the final report of the National Live Stock Association, by its executive committee of eighteen. This committee was appointed by the various live stock and agricultural associations of the United States to represent the live stock industry before the World's Columbian Commission. The report makes a very handsome volume, and will be greatly prized by all having exhibits of live stock at the World's Columbian Exposition. The report contains handsome portraits of Director-General Davis, Chief Buchanan and Chief Clerk Mills and other prominent officials connected with the live stock exhibit to the number of twenty. About forty illustrations of the sweepstakes and first prize winners add much to the attraction of the volume. The volume contains handsome views of the grand Gateway to the Live Stock Exhibit of the World's Columbian Exposition, the exterior and interior views of the Live Stock Pavilion, ground plan of the show ring in the Live Stock Pavilion and the elevation of one of the barns provided for the Columbian Live Stock Show. The first six Columbian awards in each ring are given in the classes for horses, cattle, sheep and swine. In addition to the above items of general interest to the Columbian exhibitors of live stock, the report contains the full proceedings of the several meetings of the committee of eighteen, at which the classification of prizes, the rules, etc., were adopted by the live stock organization prior to their presentation to the Columbian Commission. The report was compiled by Col. Charles F. Mills, the Chief Clerk of the Live Stock Department of the World's Columbian Exposition, and is published by the National Live Stock Association. Hon. J. H. Pickrell, 510 East Monroe street, Springfield, Ill., the Treasurer of the National Live Stock Association, has the distribution of the very limited edition of this valuable report, which should find its way into the home of every live stock breeder in the United States and Canada.

The American Clydesdale Association has reason for congratulations on the continued liberal patronage that has been given this progressive organization. The breeders of Clydesdale horses have always been noted for their enthusiasm, which was fused into a white heat by the incomparable exhibit of Clydesdale stallions and mares made at the World's Columbian Exposition. The general depression in business, that has so nearly paralyzed the trade in improved stock, has evidently not had the effect of discouraging the breeders of Clydesdale horses. Volume eight of the American Clydesdale Stud Book, we learn, will close early in June, with the full number of pedigrees, which announcement will doubtless be a surprise to some breeders who expected that the usual number of registrations would not be filed for months after the regular time. Breeders of Clydesdale horses have had little or no competition from importers during the past few years, and from present prospects, the home demand for stallions of this breed is likely to be supplied by the proprietors of the studs residing in Canada and United States.

The sentiment prevails quite generally among leading breeders of Clydesdale horses, that an improvement in the demand for stallions and mares may soon be expected. It is predicted that the breeders who retain their best bred and most promising colts can confidently count on better prices and a more active demand when the next season opens. Clydesdale breeders confidently assert that there is no more staple product of the farm than the Clydesdale horse, and that the demand for the same will be active with the first indication of the upward tendency in the general business of the country. Breeders who desire to have their stock recorded in volume eight of the American Clydesdale Stud Book will serve their interest by filing applications for entry without delay, with the Secretary, Col. Charles F. Mills, Springfield, Illinois.

**STOCK GOSSIP.**

*In writing to advertisers please mention the Farmer's Advocate.*

Mr. T. H. Medcraft, Sparta, Ont., called at our office June 13th, and reported his Shropshire sheep and Large Improved Yorkshire swine as doing well. He claims to have the best lot of yearling rams and lambs he ever had. His yearling rams number thirteen, his lambs twenty-four. Mr. Medcraft has a very good flock of sheep and a fine herd of Yorkshires. He reports the demand good, but says he has now a number of very fine Yorkshires for sale.

Messrs. John Morgan & Sons, Kerwood, in a recent letter write:—"I sold the bull calf, Goldfinder, which we exhibited at the Chicago World's Fair," to Thomas Carrol, of Wilksport. He is a very superior youngster, and will doubtless grow to be an excellent animal. We have a few good things for the fall shows. Our animals will appear in the show rings of 1894."

A. W. Young, Tupperville, has found advertising in the FARMER'S ADVOCATE a profitable investment. He writes under date of June 11th:—"I have only four fall pigs left, but I have a splendid lot of youngsters now ready to ship; they are all got by that King of Poland-China sires, Canada Wilkes. I have thirteen select sows yet to farrow, and can supply customers at any season with pigs of any desired age. Send for my free catalogue."

On June 8th, Mr. James Thompson, Mildmay, sent us the following:—"I have been breeding Leicesters for thirty-five years; they are considered good sheep, but the little experience I have had with the latest introduction, viz., the Suffolks, leads me to conclude they surpass the Leicesters as dams and milkers. For the production of early lambs, I doubt if there is and bred to excel them. The lambs grow any fatter very quickly. Below I give the age and weight of three of my Suffolk lambs: The first, a twin, 150 days old, weighs 103 lbs.; second, 97 days old, weighs 102 lbs.; third, 86 days old, weighs 84 lbs. At the present time their average daily gain in one pound per day. Who can beat this?"

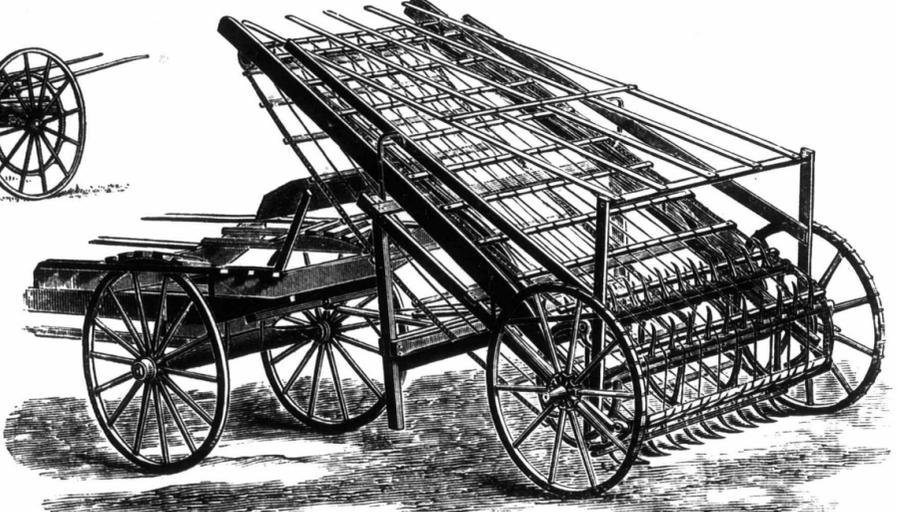
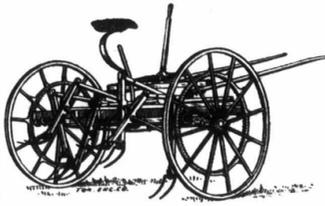
Mr. Jonas Webb, of the English firm of Messrs. John Thompson & Co., auctioneers, etc., under a recent date, writes as follows:—"The improvement in the result of the Short-horn sales in England is well maintained since the high prices at the Kenwick sale, and that of Mr. Edmunds' herd in Gloucestershire, where 265 gs. and 210 gs. were respectively made for young bulls—one for Ireland and the other for South America. On May 22nd, at Mr. James Howell's sale, in South Wales, a bull calf of the old Gwynne family (from the branch bred many years in Cumberland) made 100 gs., the purchaser being Mr. F. W. Bond. The recent death of Mr. Hugh Aylmer, the noted Norfolk agriculturist, will bring this entire herd suddenly into the market on the Friday of the R. A. S. C. show week, June 29th next, the day after the sale of H. R. H. the Prince of Wales' Hackneys in the same county."

H. Bollert, of Cassel, reports that the Maple Grove Holsteins are doing very finely since going to grass. The heifer, Jennie, E. 4th, which was two years old March 26th last dropped a beautiful heifer on April 8th, and commenced her milk record on the 13th, and gave in thirty days 1,275 lbs. 10 ozs., or an average of 42 lbs. per day. She is now on grass alone, and, under very unfavorable circumstances, milking from 45 to 48 lbs. daily. Under similar circumstances, I believe that she stands without an equal in Canada. The most gratifying part of it is that she is one of my own breeding, which proves that I am working on the right principle. The calves from Colanthus Abbekerk (all heifers this season) are a grand lot. An enterprising dairyman from Waterloo Co., who looked them over lately, pronounced them the best he had ever seen. He said: "If you look at them you can see the word milk written in large letters at every point. They certainly are of the true dairy form."

Messrs. W. & J. Menzies, of Kirkwall P. O., Ont., have recently bought from Mr. Arthur Johnston, of Greenwood, the beautifully-bred red bull, Indian Lancaster, sired by Indian Chief, and out of Mary Anne of Lancaster 15th, by imp. Warfare 667 1/2, G. D. imp. Mary Anne of Lancaster 11th, of the famous old Lancaster, or Lavender family, so very popular at Sittytton, and at Keval. Indian Lancaster is a big growthy calf, of March 27th, 1893. He is stylish, full of quality, and exceedingly well-fleshed. He is one of the right good ones of the old Chief's get. On his dam's side, he is descended from an extraordinary milking kind. His granddam, though in her eleventh year, made three pounds of butter per week—with the calf running at her foot, and sucking all it could take the present season. She continued this for four weeks, and then dropped to her two pounds per week, under the same circumstances, only that her calf was able to take more. The Messrs. Menzies have a nice select little herd of shorthorns, and this young bull ought to leave his mark.

Mr. R. H. Harding, of Thorndale, a prominent and successful breeder of Improved Chester White hogs, has recently added to his already select herd an imported boar and sow from the noted herd of S. H. Todd & Son, of Wakeman, Ohio. Their pigs were each premium-winners at the World's Fair, Chicago. The sow was reserved by Messrs. Todd & Son for the sweep-stake premium as best sow at any age, and formed part of the first premium herd of boar and three sows over one year; she was again in the herd that won first premium as boar and three sows over one year, bred by exhibitor. This sow weighed, when twelve months old, over 400 pounds. She has great length and depth; she is of the type so much in demand at the present time. The boar took second premium in a very strong class in the section of boar six months and under one year; he was at the head of the herd that won first premium in section of boar and three sows under one year, he again took the same position in the first premium herd of boar and three sows over one year, bred by exhibitor. These animals were imported by Mr. T. E. Brethour, of Thorndale, Ont., the very successful breeder of Improved Yorkshires, and sold by him to Mr.

**HAY-MAKING MADE EASY!**



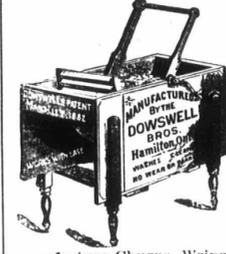
FULL LINES OF  
**LOADERS**  
—AND—  
**TEDDERS**

**DAVID MAXWELL & SONS, - St. Marys, Ontario.**

MAY WE SEND YOU **FREE** OUR CATALOGUE OF **HARNESS AND SADDLES**

It contains cuts, descriptions and prices. We have a larger trade in these goods than any other firm in Canada. We sell them in every Province and Territory. We guarantee prices lower than any local dealer can possibly give. We ship them with privilege of examination before paying for them. We have every style of harness, from dog, goat or pony to heavy and extra heavy, double and single; also gents', boys' and ladies' saddles. Address: **THE SUPPLY CO., NIAGARA FALLS, ONTARIO**

**DOWSWELL WASHERS**

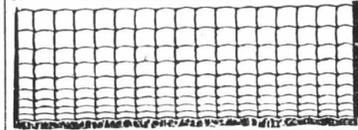


ASK YOUR HARDWARE FOR THE **DOWSWELL WASHER**

Best Washing Machine in the Market,  
10,000 IN USE.

Or write to manufacturer for catalogue and prices. We also manufacture Churns, Wringers, Mangles and other household specialties, and want good agents in every county.

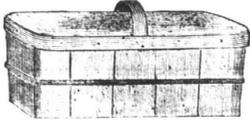
**DOWSWELL BROS.,**  
Hamilton, Ontario. 122 y o



**A NEW BROOM SWEEPS CLEAN!**  
Any kind of wire fence looks nicely when first put up, and it will usually turn-stock when new and tight. Whether it will continue to look well and do good service for any length of time, depends almost wholly on its ELASTICITY. The Page is practically the only elastic fence on the market; the only MASTER of contraction and expansion; therefore, the safest to buy and use.

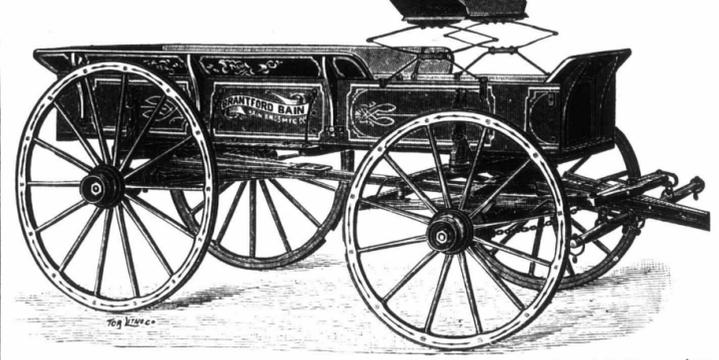
**The Page Wire Fence Co. of Ontario, Ltd.**  
WALKERVILLE, ONT. 1011

ALL KINDS OF **FRUIT PACKAGES AND BASKETS.**



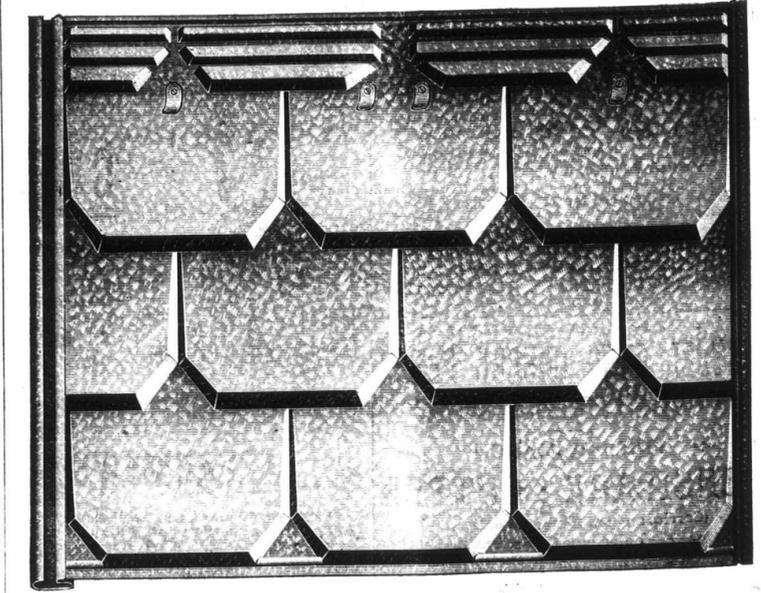
APPLY TO **OAKVILLE BASKET CO.,** Oakville, Ont. 11 L o

**WE INVITE YOU TO INSPECT THE "BRANTFORD BAIN"**



Because it will pay you to buy it. It is finely finished, well proportioned, light running, durable, superior quality. There are thousands of farmers who are well pleased with their BRANTFORD BAIN WAGON. Write us for prices, or call on our agents.  
**BAIN BROS.' MANUFACTURING CO., - 7-a om - BRANTFORD.**

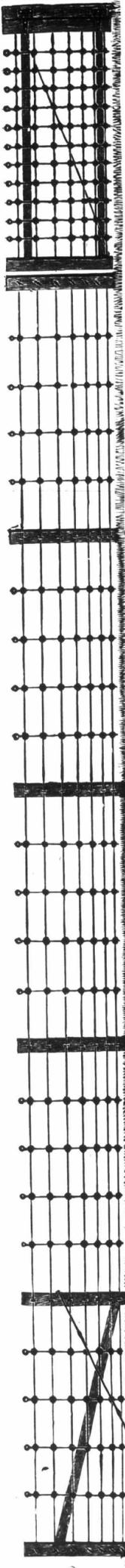
**"EASTLAKE" STEEL SHINGLES.**



GALVANIZED OR PAINTED. THE SHINGLE OTHERS TRY TO IMITATE. HAS NO EQUAL. CAN BE LAID BY ANYONE. FULLY GUARANTEED. FIRE-PROOF. DURABLE, ORNAMENTAL AND CHEAP.

Sole Manufacturers: **METALLIC ROOFING COMPANY (Limited),**  
10 y o 82, 84, 86, 88 and 90 YONGE ST., TORONTO, ONT.

**ADVERTISE in the ADVOCATE.**



**THE LOCKED-WIRE FENCE CO., INGERSOLL, ONT.**

The accompanying cut represents five panels of fence and gate of the LOCKED-WIRE FENCE which is now built with improved corrugated hardened steel stay and Bessemer steel clamp, a combination which is proof against the most unruly stock or designing men. The crimp in the wire, in combination with steel clamp, when locked acts as a spring, adjusting the fence to heat or cold.

—PERFECTLY—  
**Safe, Stronger, Better AND CHEAPER**

than any other fence, and without doubt the best fence on the American continent.

All persons having wire fences erected in the past, should use the stays and steel clamps of the Locked-Wire Fence Co. on them. The crimp consumes all the slack, makes the fence tight, and adds over 100 per cent. to its value, at a very small cost.

We desire to inform the farmers and public generally that we are prepared to supply the material or erect this fence throughout the Dominion of Canada.

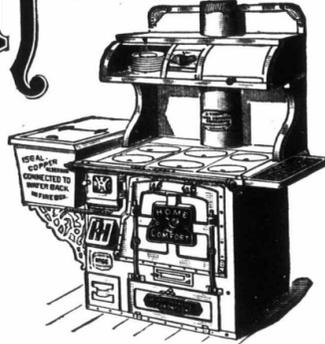
Recollect, we are the only firm that is furnishing the genuine material in the form of the corrugated hardened steel stay and Bessemer steel clamp.

**THE BEST FENCE MADE FOR Farms and Railroads.**

Agents Wanted In every Township. Send for circulars and particulars. Address —THE— LOCKED-WIRE FENCE CO., INGERSOLL, ONT.

**THE HIGHEST AWARDS**  
Were received at  
**WORLD'S COLUMBIAN EXPOSITION,**  
BY THE **WROUGHT IRON RANGE CO., ON**

**HOME COMFORT STEEL HOTEL AND FAMILY RANGES.**  
CARVING AND STEAM TABLES,  
BROILERS, MALLEABLE WATERBACKS,  
ETC., ETC.



This Style Family Range is sold only by our Traveling Salesmen from our own wagons at one uniform price throughout Canada and the United States.

Made of MALLEABLE IRON and WROUGHT STEEL and will LAST A LIFETIME if properly used.

SALES TO JANUARY 1st, 1894, 277,188.

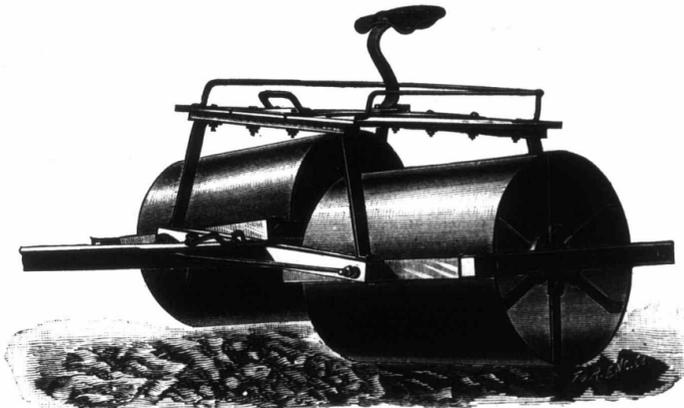
MADE ONLY BY **WROUGHT IRON RANGE CO.,** MANUFACTURERS OF Hotel Steel Ranges, Kitchen Outfittings and "Home Comfort" Hot-Air Steel Furnaces.  
OFFICE, SALESROOM AND FACTORY,  
70 to 76 PEARL STREET, TORONTO, ONTARIO,  
and Washington Avenue, 19th to 20th Streets, ST. LOUIS, MO., U. S. A.  
Founded 1864. Paid up Capital, \$1,000,000.

We have received the following goods and have them in our warehouses at the following prices, at which they cannot be secured again. Our stock is very limited. Cash has to accompany all orders for these goods. We guarantee them first-class goods in every respect. So don't delay your order if you want any of them.

- A good, large Bell, suitable for school, worth \$16, we will send you for \$12
  - A Thomas Organ, Woodstock, worth \$110 dollars, for 50
  - A Karn Organ, Woodstock, worth \$150 " " " " 75
  - A Mercer Grain Binder, complete, for 85
  - A 14-inch Ensilage Cutter, with 10 feet of carriers, for 50
  - A Large Ensilage Cutter, without carriers " " " " 45
  - A Trenton Fanning Mill, No. 1, only 12
- We want you to distinctly understand these are a job lot bought for much less than manufacturers' prices, and will be sold to the first buyer.

**THE GRANGE WHOLESALE SUPPLY CO. (Ltd.)**  
126 King Street East, TORONTO.

**The DALE PIVOTED LAND ROLLER (Patented)**  
A Steel Roller, the drums of which oscillate on pivots and adapt themselves to the unevenness of the ground.



The bearings are the only wearing parts, and are guaranteed to last from Ten to Fifteen Years, and can be replaced at a nominal cost. It rolls all the ground, no matter how rough. There is no axle shaft, no strain, and consequently no wear. It is easily oiled between the drums.  
If your local agent does not supply you, write direct to **T. T. COLEMAN,** SOLE MANUFACTURER, SEAFORTH, ONT. Mention this paper. 2 om

**CREAM SEPARATOR BELTS**  
**ANTHON CHRISTENSEN & CO.,**  
Niagara Falls, Ont., Canada; Suspension Bridge, N. Y., U. S. A., and Dursley, Eng.,  
MANUFACTURERS OF HIGH-CLASS BELTS FOR DRIVING CREAM SEPARATORS.  
Our belts are used successfully all over the world. It is settled they have no equal in price, quality, durability and workmanship. 10-y-om

**THE : NICHOLS : CHEMICAL : CO.,**  
**CAPELTON, P. Q.,**  
**Manufacturers of Complete Fertilizers**  
HIGHEST AWARD AT THE WORLD'S FAIR, CHICAGO.

**For All Crops, All Soils, Canadian Climate.**  
Send for 1894 Catalogue, containing full particulars and testimonials from many reliable farmers. 22-f-om

**400—Helderleigh Fruit Farms Nurseries—400**  
(Four Hundred Acres in Extent.)  
Established 1882.

There is no place in Canada where the season is longer than here. Hence we get trees brought to the fullest maturity, capable of withstanding the severest cold. Having one hundred acres in fruit, from which cuttings, buds, scions, etc., are taken, I can safely guarantee the purity of my stock to be equal, if not superior, to any other nursery. The soil is specially adapted to produce vigorous, hardy trees, a grand lot of which are now growing and for sale. All the leading sorts of both old and new varieties deemed worthy of propagation. Catalogues free on application. Agents wanted in every township. 13-y-om E. D. SMITH, Winona, Ontario.

**ULCERURE**

A new Chemical Compound discovered by Dr. Warnock, Member of Royal College of Veterinary Surgeons, England; Fellow of the Glasgow Veterinary Medical Society.

**A NEW DISCOVERY,**  
With a specific chemical action, for the immediate cure of wounds and ulcerated sores on Horses, Cattle, Dogs, etc., such as Barb Wire Cuts, Collar and Saddle Galls, Cracked Heels, Frost Bites, Foot Rot, Rope Burns, Malenders, Sallenders, Broken Knees, Ring Worm, Scratches, Scalds, Cuts, Burns, and all foul and putrid sores of all descriptions. Recommended by the largest stock owners in Canada.

**A. E. WALDON & CO.,** Chemist, Calgary, Alta. 5-y-om

**THE SYMMES PATENT**



**HAY AND GRAIN CAP.**  
THOROUGHLY WATERPROOF.  
The most practical, cheap and efficient hay and grain cap yet introduced. Not necessary to fasten down. Almost indispensable on grain when using a self-binder.

**VEGETABLE AND FLOWER COVERS**  
For Transplanted Plants.  
**Stack Covers,**  
Built in sections. Diam. at bottom, 8 feet, by about 5 feet deep.  
Send for circular to  
**SYMMES HAY CAP CO.,**  
7-h-om Sawyerville, P. Q.



**The FAVORITE CHURN**

The most simple. The most durable. The most effective. The easiest to keep clean.  
Water tanks a specialty, and shipped to all points. Correspondence and shipments promptly attended to. All kinds of cooperage.  
**ST. MARYS COOPERAGE**  
42-y-om F. E. BUTCHER, St. Marys, Ont.

**The High Speed Family Knitter**

Will knit 10 pairs socks per day. Will do all work any plain circular knitting machine will do, from homespun or factory yarn. The most practical family knitter on the market. A child can operate it. Strong, Durable. Simple. Rapid. We guarantee every machine to do good work. Beware of imitations. Agents wanted. Write for particulars.  
**Dundas Knitting Machine Co., Dundas, Ontario.**  
17-y-om

**GODERICH ORGAN**

High grade, fine tone. Send for Catalogue. Made at Goderich, Ontario. 1-y-om  
**Advertise in the Advocate.**

BREEDERS' DIRECTORY.

Cards up to six line space inserted under this heading, one issue a month, \$3 per line per annum: every issue, \$5 per line. Payable in advance.

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W. H. BEATTIE, Wilton Grove, Importer and breeder of Shropshire Sheep. A choice lot of Collie Dogs and White Holland Turkeys. 319-y

W. M. SMITH, M.P., Columbus, Ont., breeder and Importer of Clydesdale Horses, Shorthorn Cattle, and Cotswold Sheep. Stock for sale. Terms and prices liberal. 325-2-y

GRATEFUL-COMFORTING. EPPS'S COCOA BREAKFAST-SUPPER

"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and a careful application of the fine properties of well-selected Cocoa, Mr. Epps has provided for our breakfast and supper a delicately-flavored beverage which may save us many heavy doctors' bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever there is a weak point. We may escape many a fatal shaft by keeping ourselves well fortified with pure blood and a properly nourished frame." CIVIL SERVICE GAZETTE.

Made simply with boiling water and milk; sold only in packets by grocers, labelled thus: JAMES EPPS & CO. (LTD.), Homoeopathic Chemists, London, England. 6-2-f-o

THE NEW Chatham and Chautauqua Giant Wagon

With Unbreakable Axles and Unbreakable Arms.

THE BEST MADE ON EARTH. So said the Judges on Vehicles at the

WORLD'S FAIR, Who awarded us a

GOLD MEDAL AND DIPLOMA

Over the heads of numerous old and extensive builders in the United States and Canada. The axles are unbreakable, because

Van Allen's Patent Giant Arms

Throw all the load directly on the arms, and the arms are also unbreakable, because they are the best refined

MALLEABLE IRON,

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