

FARMER'S ADVOCATE

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THE FARMER'S ADVOCATE & HOME MAGAZINE

WILLIAM WELD, EDITOR AND PROPRIETOR.

THE LEADING AGRICULTURAL JOURNAL PUBLISHED IN THE DOMINION.

The FARMER'S ADVOCATE is published on or about the 1st of each month. It is impartial and independent of all cliques or parties, handsomely illustrated with original engravings, and furnishes the most profitable, practical and reliable information for farmers, dairymen, gardeners and stockmen, of any publication in Canada.

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Our Monthly Prize Essays.

CONDITIONS OF COMPETITION.

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

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

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

Our prize of \$5.00 for the best original essay on the following subject: *Can a Provincial Exhibition, purely Agricultural, be made Successful and Self-supporting?* has been awarded to John S. Pearce, London, Ont. The essay appears in this issue.

A prize of \$5.00 will be given for the best original essay on *Winter Care of Cattle*. Essays to be handed in not later than Nov. 15.

A prize of \$5.00 will be given for the best original essay on *The Condition of the Canadian Farmer*. Essays to be handed in not later than December 15th.

Enclosed please find one dollar for my subscription to your valuable paper, the FARMER'S ADVOCATE. We all prize your paper as an interesting addition to our family literature, and look eagerly forward to its arrival every month. Wishing its editor every success.—ROBERT T. FERGUSON, Smith's Falls, Ont.

Editorial.

On the Wing.

We left the Provincial Exhibition, Ottawa, on Wednesday night, 21st Sept., to fill accepted invitations from J. E. Perley, M. P., of Assiniboia, and from the Agricultural Society of Regina.

We arrived at Winnipeg on Saturday. We were considerably surprised to find peace and tranquility reigning, and that this city had made such rapid strides in improvement, having block roads far wider than any in Ontario, flag sidewalks, and the place presenting an appearance of real thrift, happiness and prosperity, and the spirits of the people hopeful for the future.

From many of the accounts we had read and heard, we really thought the inhabitants were fighting mad, and that it would be necessary to be very guarded in our words, if we dared express an opinion that might not coincide with their views; that the mortgaged places were tumbling down, and that a financial wreck existed. This is our third visit to this city. We had thought on the first visit to invest a few dollars if we found a promising way to do so, but returned rather chagrined and disappointed with the country, between the grasshopper plagues and the floods we saw, the returning, tired, disappointed land seekers, and our ardor was checked. Our second visit was made five years ago, when our hopes of the country were somewhat reversed, but the erroneous statements made to us by some paid officials, caused us to doubt real facts when stated, and being of a sceptical nature, would only believe what we could see about the country.

Having now reached the Pacific coast, and having visited ten agricultural exhibitions in Assiniboia—having met so many of the subscribers to this publication who are prospering, happy, hopeful and satisfied with the change, many of whom have no desire to return to the east except to visit—when we see their farms, their stock, their progress, we are pleased, and feel a stronger hope and confidence of this becoming a mighty, powerful and prosperous nation of contented people, if properly managed. We have now been on the farms, have driven many hundreds of miles over the country, and have seen the threshings and the granaries filled to overflowing. Observing the infinitesimal part of the land yet occupied, finding seven or eight million bushels of wheat to be exported, cattle thriving and fattening in such a manner as in no other country we have yet seen, the hope of large cities and towns being destined to occupy these plains where the buffalo formerly roved, is in our estimation almost a certainty. There are drawbacks, and new settlers have much to undergo

and much to learn; in fact the oldest are yet but learners. There have been and will be hardships and privations, disappointments and failures, particularly for those who have all to learn—but such there are in every country and in every walk of life. Yet for the young, energetic, industrious, steady and persevering tiller of the soil, there is every promise, as there have been many instances of grand success here.

(To be continued.)

Some Collapsed Booms.

Business crashes sweep over our land periodically, and the main reason assigned for their periodical occurrence is that new generations of business men spring up, who have not had the opportunity of taking practical lessons from the pains and sorrows of previous crises.

Not so, however, with agricultural booms. These we have always with us, and the dearly bought lesson learned by the perpetration of one fraud is forgotten simultaneously with the next change of wind. Never speak seriously of removing the burdens from our farmers' shoulders so long as such a condition of affairs is permitted to exist.

The ensilage boom is still green on our memories. Amongst agricultural writers, we stood alone in urging objections against it for our conditions in this country, but many practical farmers followed the breeze. No agricultural authority of distinction has now a kind word for ensilage, and the silos are being rapidly converted into root cellars and receptacles for other farm products. Many farmers were even led to believe that valuable nutrients could be manufactured in the silo, thereby enabling them to support larger flocks and herds. The breeze wafted the bubble over our Model Farm, and much time and money were squandered in fruitless investigations.

One of the latest and emptiest of all is the "record" boom. We were the first to point out the depths of degradation to which we were descending by our credulity. We did not believe, no matter how apparently convincing was the proof, that any healthy cow could produce milk containing 15 percent of butter fat and 60 percent of total solids, which record was said to have been performed by a Jersey cow in this Province, the details of which were described in a previous issue of the ADVOCATE, and even this bubble increased in size, weight, and density while sweeping over the heads of our neighbors on the other side of the line. When we see cows giving cream instead of milk, then we will also ride the bubble astride, all danger of explosion then being out of the question. Scientific authorities have

recently been making investigations, and not a man of them has been able to discover a cow which produced cream. Is this the fault of science? No; the practical men have been frauds—that's all. There is not a dairy authority in the world to-day who favors the boom system of making butter records. Because we refuse to straddle these bubbles, endangering our life by hasty precipitation, we are dubbed the advocate of "serub" stock. Perish, ADVOCATE, rather than sink into such depths of degradation!

The latest of all is the oil test boom. Costly instruments have been manufactured for testing milk and cream, which have been thrust upon our dairymen as the last thing required to perfect our co-operative systems of cheese and butter making, and large numbers of these instruments have been sold. In our July issue, we pointed out some scientific objections to the oil-test, and since we wrote, scientific authorities have found the system to be a delusion, if not exactly a fraud. Our Model Farm experts were probably the first to introduce the oil-tests into Canada and a bulletin has recently been issued from that institution in which the comparative merits of the leading milking breeds have been investigated on the basis of the oil-tests. This bulletin has also been published by leading weekly papers, and the misleading results have therefore had a wide circulation amongst our farmers.

We have pointed out some other agricultural booms, some of which appear to be on the verge of collapse. We hope our readers will take warning, and spend their time in the study of those principles by means of which the existence of the boom will become a relic of the dark ages of agriculture.

Over-Stocking Cows at Exhibitions.

Amongst the many vicious practices which we see creeping into our leading exhibitions may be mentioned the growing habit of permitting cows to remain unmilked for 24 to 36 hours before leading them into the ring to be judged. Under all circumstances, the objects are mercenary, and the agony inflicted upon the victims is often intense. It is one of the basest forms of cruelty to animals, predisposing the sufferers to many forms of disease, and condign punishment should be meted out to the owners. If the cow is for sale, the object is either to give her the appearance of being a good milker, or, if she has not recently calved, to make her appear to maintain her flow for a considerable length of time. If a prize or an award is the object, then the exhibitor hopes to influence those judges who are really sensible enough to think that the yield of milk has something to do with the merits of the animal. Some judges are somewhat squeamish about the contour of the udder, and the over-stocking iniquity is a sort of cheap bribe for them.

If this obnoxious practice is not speedily brought to a halt, it will give rise to deleterious consequences not yet dreamed of. Many of the most disastrous iniquities of our day have had smaller beginnings than this. Special methods of feeding, drenching and drugging have been discovered, which unnaturally and abnormally increase the milk secretion for such vile purposes, and in some instances the innocent sufferers have been known to remain for weeks under such treatment without milking, thereby causing serious and permanent injury to the udder.

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

NO. III.

Before entering the scientific phase of the question, the word *fertility*, so broadly used by the theorists, requires definition. When they assert that the manure made from the produce raised on the farm is capable of maintaining and even increasing the fertility of the soil, the exact meaning attached to this word is very relevant to an intelligent understanding of the question. A short time ago we asked one of the exponents of the new theory if he and his school did not mean *productiveness* instead of *fertility*. He replied that the words were exactly synonymous. This explanation may be quite satisfactory to the disciples of the new school, but it will not do for the intelligent public. We do not wish to wage war upon words, but will draw attention to two distinct conditions which may exist, one of which we call fertility and the other productiveness, and if we do not use the proper words, we desire to be corrected; any quibbling, however, on this point cannot alter the facts or conditions involved in the issue.

By fertility we mean the store of plant food in the soil, and as the soil contains many constituents of plant food, each must be considered separately. However, as those chiefly lacking are ammonia, phosphoric acid and potash, these constituents may be taken as illustrative of the whole. By applying these in about the same quantities as those removed by the crops, the fertility and productiveness of the soil may be maintained; but it must be distinctly understood that the *fertility* cannot be maintained without supplying those constituents removed by the crop, whereas the *productiveness* may be maintained, and the fertility at the same time reduced. By applying an excess of the requirements of the crops, the fertility will be increased. The productiveness may be increased at the expense of fertility. Now it is plain that fertility and productiveness can only be synonymous terms when the productiveness is caused by the application of those constituents removed by the crops.

Let us illustrate: Farmer A may maintain or increase the productiveness of his soil by the application of manures or fertilizers, while Farmer B may accomplish exactly the same results by other means, viz., drainage, summer-fallowing, thorough cultivation, a judicious rotation of crops, etc., and such applications as lime, plaster and salt, which may have little or no direct effect, so far as the direct requirements of the crops are concerned, but they aid in making the plant food already in the soil more available, thus *increasing* the productiveness, and *reducing* the fertility. The difference between these two methods is, that Farmer A and his successors maintain the productiveness of the land for ever, while Farmer B can only maintain it for a greater or less period of time, depending upon the natural resources of his soil. When B's farm comes to that stage in which its productive capacity, whether in this generation or in the next, is reduced below the profitable basis, then it may be laid down as a general rule that, in countries where land is moderately cheap, it will be wiser for him to leave the farm and purchase land in a newer section than to restore its fertility.

It is now in place to ascertain the respective influences which stock-raising and grain-growing

have, (1) upon the fertility of the soil, and (2) upon its productiveness. The main point in which we clash with the views entertained by the manure hobbyists is this, that we regard the loss of fertility as being based entirely upon the quantity of plant food sold off the farm, other conditions being equal, the form of the sales—beef, grain, or milk—having nothing whatever to do with the problem. On the other hand, the position of our opponents is this, that the state of fertility is based upon the quantity of stock kept on the farm; or, in other words, the quantity of manure supplied by the stock. One stockman, a leader in this new school of practical theory, holds that he doubled the fertility of his farm in eight years, using no foods or manures other than those made on the farm, from which we take the liberty of drawing the inference that purchased foods or fertilizers are not profitable investments on stock farms from a fertility standpoint. If they are profitable, the professors of the new school should have said so, instead of leaving farmers in the dark as to whether an exhausted farm could be brought up to its highest state of fertility by stock-raising in a sufficiently short period of time. We have it on the authority of another genius that stock-raisers are permitted to purchase foods, but not fertilizers, none but grain-growers requiring the latter. The professors should hold a conclave and settle these points.

Succinctly, then, their motto is this: More stock, more manure; more manure, more grass; more grass, more stock. While our motto is: More manure, more grass; more grass, more stock. In other words, they commenced their first book of lessons at the wrong end. In this proverb sense, manure simply means plant food, and their theory would be perfectly sound if this plant food came out of other people's land instead of their own. It is downright stupidity and absurdity to talk about increasing the store of plant food by drawing it out of one's own soil—especially when only one-fourth of the quantity is returned.

We stated that the exhaustion of fertility was based exclusively upon the quantity of plant food sold off the farm, the form of the sales having nothing to do with the question. However, the following questions are pertinent to the issue: In our ordinary system of husbandry, in what form—grain, beef, or milk—is the greatest quantity of plant food sold off? In an intensive system of husbandry, the soil being raised to its maximum capacity of fertility and productiveness, in what form would the greatest quantity of plant food then be sold? These questions require a scientific solution, and with the aid of a balance-sheet, we undertake to put the question to rest. The balance-sheet, when not manipulated as is done by the manure theorists, is the great settler of all agricultural problems.

If we can now show in which of the above forms the most plant food is sold off the farms, it can be decided, beyond any possibility of cavil, who is the greatest land robber, the stock-raiser, the dairyman, or the grain-grower. Of course, it is desirable, which some of the theorists will not deny, to sell off as much plant food as possible, provided always that the business is profitable and that due returns are made to the soil. This is not the point at issue; the trouble lies in the sufficiency of the returns, and the calculations which prove the quantity of plant food in the total sales can, by striking a difference, prove what remains—or settle the sufficiency of the returns.

(To be continued.)

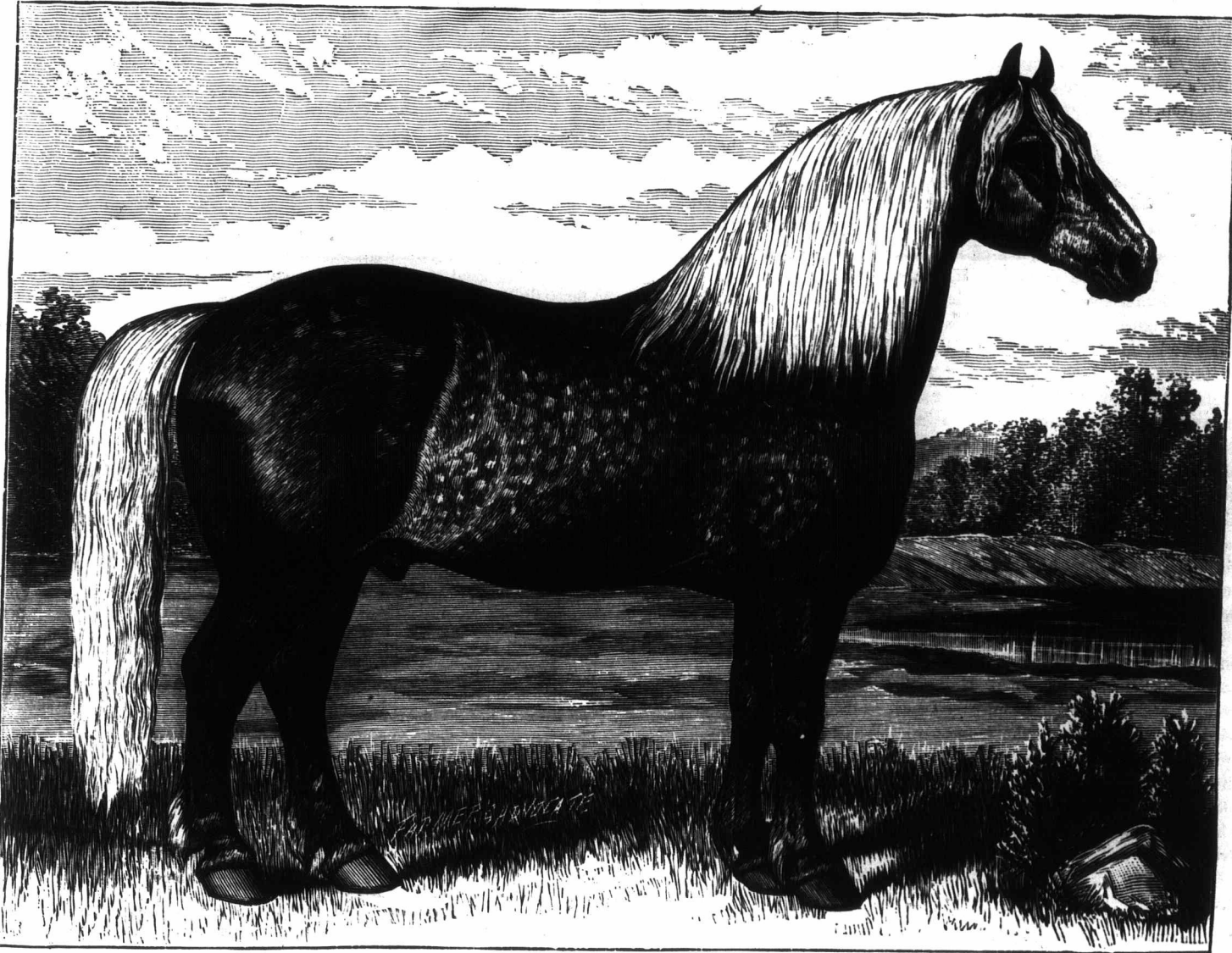
A Famous Percheron Stallion.

The accompanying cut is a good representation of that famous Percheron stallion, *Producteur*, 4280 (68). He is a handsome dapple grey; 16½ hands; weighs 2000 lbs.; was foaled February 19, 1881; imported 1885. Bred by M. Leguedre, of Cerisier, commune of Vaunoise, canton of Bellesme, department of Orne; got by *Madeira*, 1546 (770); dam, *Gentille* (4062), by *Porthos*. *Madeira*, 1546 (770), by *Vidocq*, 483 (732), out of *Icanne*, by *Favori I.* (711). *Vidocq*, 483 (732), by *Coco II.* (714), out of a daughter of *Cheri*, he by *Rustique*. *Coco II.* (714) by *Vieux-Chaslin* (713), out of *La Grise*, by *Vieux-Pierre* (883). *Vieux-Chaslin* (713) by *Coco* (712). *Coco* (712) by *Mignon* (715), out of

position, still showing the ambition of a thoroughbred, with style and action possessed by few of the lighter class of horses. After seeing this horse, we are not surprised to learn that men who took much interest in horses flocked to Mr. Brickman's stables to see this stallion when he arrived, and for many weeks after.

Mr. Brickman's farm, which consists of 200 acres of the choicest land to be found in Canada, lies in the first concession of the township of *Ameliasburg*, in *Prince Edward Co.*, facing the waters of that beautiful Bay of *Quinte*, which is recognised by travellers to be equal, if not superior, in scenery to the celebrated *Hudson River* of N. Y. His buildings, which were not calculated altogether for a stock-raising farm, will no

has yearly been adding to his herd, which now consists of some of the choicest horses to be found in any herd of Percherons in America. Beside the subject of this sketch, of which the accompanying cut is a good likeness, he has a famous black stallion, *Madrid*, five years of age, imported one year ago from M. W. Dunham, of *Wayne, Ill.* This horse wins friends wherever he goes, and is likely to be almost as popular as *Producteur*. For breeding purposes he has that celebrated mare, *Pelotte*, which without doubt is one of the worthiest mares that ever crossed the Atlantic. She has taken first prizes wherever she has been shown in Canada, and her colt first prize at the great *Percheron Fair* in *Chicago* in 1886. Beside this noble animal, he has *Fannie*,



PERCHERON STALLION "PRODUCTEUR," THE PROPERTY OF MR. E. A. BRICKMAN, REDNERSVILLE P. O., PRINCE EDWARD CO., ONT.

Pauline, by *Vieux-Coco*. *Mignon* (715) by *Jean-le-Blanc* (739), a direct descendant of the famous *Arab*, *Gallipoli*.

Producteur was winner of the first prize and gold medal in the three-year class at the great *Percheron Exhibition* held at *Nogent-le-Rotrou*; winner of first prize and gold medal for best three-year-old at the *Government Concourse* held at *Rouen*, in competition with all the draft breeds of France; also winner of first prize in five-year-old-and-over class at the great *Percheron Exhibition* held in *Chicago*, Sept., 1886.

Producteur was purchased from Mr. M. W. Dunham, of *Wayne, Ill.*, last March, by Mr. Brickman, and is without doubt one of the finest specimens of the *Percheron* breed of horses ever imported into America. He has a very kind dis-

doubt in the near future be replaced by larger buildings, with better accommodation, when we will be safe in saying then that a more beautifully situated stock farm would be hard to find anywhere, being abundantly supplied with the best of pasture and good water. While his stock have free access to the pure waters of the bay, they have an advantage at the rear that few if any farms in Canada possess, that is the waters of a mineral spring which flow at the rate of over 100 gallons per minute. This great advantage will of itself be of inestimable value to his stock during the dry and hot season of the year, when stock, as well as man, appreciate pure cold water to drink.

Six years ago Mr. Brickman imported his first *Percheron* stallion, *Romulus*, and since that time

Maud, and *Princess Louise*, which already promise to be valuable brooding mares. His young stock, of which we have not space to write about, are an ornament to any man's farm and a credit to the county in which they have been raised.

That the farmers of *Prince Edward* and adjoining counties appreciate Mr. Brickman's enterprise in introducing such a class of valuable stock is plainly manifest from the numbers of first class horses and colts that are yearly exhibited at the principal fairs and are being sold at substantial prices to foreign buyers.

The time can not be far distant when numbers of fine horses of various ages will be for sale at Mr. Brickman's farm, and we wish him all the success his enterprise demands.

Gather in your tools and implements; don't leave them exposed all winter.

Farmers' Clubs.

Dominion Farmers' Council.

[The Dominion Farmers' Council meets in the city of London, Ont., on the third Thursday of every month, at 2 o'clock p. m. All communications should be addressed to the Secretary, W. A. MACDONALD, LONDON, ONT. This Council has now on hand pamphlets containing its Constitution and By-laws, with an account of its origin, objects, etc., also a form of Constitution and By-laws suitable for Farmers' Clubs, which will, on application to the Secretary, be distributed free to all parties having in contemplation the organization of clubs. Clubs amalgamated with this Council are entitled to instruments for testing milk.]

After the summer vacation, the DOMINION FARMERS' COUNCIL held the first of its winter meetings on 22nd ult. The meeting was chiefly occupied in discussing plans for the winter campaign.

After the reading of communications, the Secretary stated that the plans for the coming winter's work could not be fully discussed until reports from the amalgamated clubs were received, when it could be ascertained how effectually they performed the work already placed into their hands. He was aware that one of the clubs at least had continued its session through the summer months, viz., the Granton Farmers' Club, and he expected a good report of its doings, the club being large and its members intelligent and enthusiastic farmers. All the clubs expressed their willingness to conduct the tests placed in their hands, and it would be well to ask the secretaries to report the results, and state what progress they had been making generally. The funds of the Council were accumulating, and if the amalgamated clubs could not report satisfactory progress with the tests placed in their hands, the funds of the Council should be spent for other purposes. He considered that the Council was making a grand test of the ability and willingness of farmers to make simple tests which would be of great practical benefit to our farmers and which would cost very little time or trouble.

After some discussion as to the disposal of the surplus funds of the Council, it was decided to postpone the discussion until after the reports from the amalgamated clubs were received, and the resolution also embodied the request to ask the opinions of the amalgamated clubs as to how these funds could be most advantageously employed in the interests of Canadian agriculture. The Treasurer stated that there was a surplus of over \$200 in the treasury.

OUR BUTTER INDUSTRY.

The following paper, received from the Secretary of the Granton Farmers' Club, was read. The paper was written by Mr. Wiltse, and was read and discussed at the July meeting of the above club before being sent to the Council:

MR. CHAIRMAN AND GENTLEMEN.—The advantages of dairying is a subject which should have fallen into abler hands, especially as I know that those who will criticise this paper to-night follow a different system of farming, and I have no doubt that, did they consider there were advantages in favor of dairying over any other system of farming, they would turn their attention thereto. The advantages of dairying are, to my mind, of a two-fold nature; first, cash returns; secondly, improving the condition of a soil already exhausted by continual grain growing. I think you will all agree with me that in order to do this it is necessary that a large share of our land must be given a rest in the shape of pasture, and all the coarse grains grown on the farm fed thereon. Having thus easily established my second advantage, I will now attempt the more difficult task of establishing my first. Money making I suppose to be the chief aim in farming

as in every other business, and dairying, I believe, is destined to become the most profitable mode of farming.

Of the two modes of dairying, cheese and butter making, I consider the latter to be the most profitable, on account of the high value to be placed on the skimmed milk; therefore, it will be butter making that I will discuss to-night. I was reading not long since a report of a speech delivered by Prof. Robertson, of the Agricultural College, who had charge of the dairy department of the Canadian exhibit at the Colonial Exhibition, and he gave it as his opinion that there was an almost unlimited market for all the butter and cheese we could produce at higher prices than had hitherto been paid, providing, of course, that we maintain the excellent reputation we have already established by producing a first class article. Assuming Prof. Robertson to be right, and I think he is, let us look at what has already been done. I noticed in the papers last fall that quite a number of the patrons of Seaforth and Londesboro creameries had received over thirty dollars per cow for the season of about six months. If this can be done with cows not especially selected for the dairy, we would be justified in assuming that a great deal more might be realized by taking the pains to secure cows of the best milk and butter producing strains. At a test in London not long since, the first prize for the best milk and butter cow was awarded to a grade Durham, and I would recommend them as the best suited for the purpose, for the reason that their calves would be more valuable than those of the smaller breeds. Assuming, then, that with cows of this kind, we can count on from thirty to forty dollars, according to the market, for the creamery season, we may safely assume that ten or fifteen dollars may be made from them during the three or four months of milking season in which the creameries are closed. To sum up, then, we will have as the returns from each cow, say from thirty to forty dollars from creamery, ten to fifteen from butter made at home, and at least ten from sale of calf, making an average of from fifty to sixty-five dollars, which, although it seems large, I believe is no more than may be obtained by giving this system careful attention, and which I also believe to be more than can be safely counted on from any other system of farming.

DISCUSSION.

J. K. LITTLE—I tried the creamery business on the milk gathering system, but did not make it a success, although I believe that, with the most modern inventions and appliances, it could be made more successful now. It takes 25 lbs. of milk to make a pound of butter, which quantity will make over 2 lbs. of cheese, and I think that under average prices the cheese-factory is more profitable than the creamery. The great drawback in the creamery business is that it is very difficult to get the milk or cream in good enough condition for making butter. I consider \$30 per cow to be a very small profit during the dairy season. I have obtained receipts of \$45 per cow in the cheese factory, and it is very common for me to receive \$35 per season. My cows are Shorthorn grades.

PRESIDENT LEITCH—Our butter market is too far away. Butter deteriorates in shipment to a foreign market, while cheese improves. A farmer who sends his milk to my factory has just realized \$400 for his season's milk. He has eleven cows, or rather ten, for his two heifers which came in late may be counted as one cow, thus realizing \$40 per cow. He also made butter enough to support a large family all through the season. His herd consists of common stock and Shorthorn grades. His cows received no feed except grass, and a few windfall apples in the fall. Out of his 150 acres, he has only 50 of good land, the rest being a poor sandy loam. He depends largely upon clover pastures, and has plenty good water. He raises his own calves

and feed, and his success is to be attributed to his skill in breeding and management. I consider that, for our present conditions, the cheese-factory is better than the creamery. Our reputation for cheese is up, which greatly assists us in this branch of farming. In Elgin, Illinois, they make skim-milk cheese at remunerative prices, realizing an average of about 6c. per pound, and sometimes \$1.30 per 100-lbs. is realized for milk at the creameries, which is made into butter to mix with butterine. The American cheese men lost their reputation in the British markets by making cheese from partially skimmed milk. Finding that we got a cent or two per pound more than they for our cheese, they sent over a deputation to find out where our advantages lay, and they ascertained the cause to be better pastures and less skimming.

HENRY ANDERSON made a few remarks in favor of cheese-factories in preference to creameries.

W. A. MACDONALD—The upholders of cheese-factories speak of our conditions as they are instead of what they might or should be. All the drawbacks to our creamery system can be easily overcome; all we lack is enterprising men in this branch of dairying. By adopting the European methods, we could make as much, if not more, profit in the creamery as in the cheese factory, taking all circumstances into consideration. The system should not be condemned without getting a fair trial. It is unfair to advocate the introduction of heavy, beefy grades into the creamery until it can be proved that such a class of cows produce milk at more profitable prices than other cows. The cost of production is as important as the annual receipts. Too much reliance should not be placed on the dairy tests conducted at our leading exhibitions.

At the next meeting of the Council, Mr. Waters' paper on "Commercial Union" will be discussed.

Mr. George Young, of Ekfrid township, near Appin, sowed wheat on the 12th of September; on the 13th of October the whole top was red, having been destroyed by the Hessian fly. He sowed one barrel of salt on one and a quarter acres, the size of the field. In a week it began to look green, the salt had killed the insect and the result was the wheat yielded 40 bushels to the field, one and a quarter acres of fine plump grain—the best in the neighborhood.

RULES FOR KILLING WEEDS.—Weeds are of three kinds, namely:—1. Annuals, which depend entirely on seeds for increase and growth; 2. Biennials, which bear seed the second year and then die; 3. Perennials, which continue indefinitely, and increase by seeds and by spreading and running roots. To clear the land of annuals and biennials, the seed must not be allowed to ripen, and the soil must be stirred over and overtill all the hidden seeds are started and the plants destroyed. Among annual and biennial weeds are rag-weed, pig-weed, chess or cheat, wild mustard and many more. Among perennials are ox-eye daisy, plantain, johnswort, and others which do not spread by creeping roots, and Canada thistles, quack-grass, milk-weed, and others, which have creeping roots and spread by them indefinitely. The easiest way to kill these and all perennial weeds is to smother them, either by continued clean cultivation, by summer-fallow, or by choking them by means of luxuriant shading crops.—[Country Gentleman.]

The Dairy.

Winter Dairying.

Amongst the numerous changes which must sooner or later take place in our agricultural affairs, that of winter dairying occupies a prominent place.

When speaking of farm economy, the greatest leakages are often lost sight of, and those of the keenest comprehension are listened to with the keenest attention. It requires no great mental effort to grasp the fact that butter at average summer prices, say 12½c. per pound, thus realizing about ½c. per pound for the milk, is a losing speculation. The same milk delivered at the cheese factory would yield double the money, also saving the laborious process of butter-making. On the other hand, when good butter is made and reaches winter prices, say 25c. to 30c. per pound, then butter-making probably becomes the most profitable of all branches of farming.

There is a superstition abroad that butter at almost any reasonable price is profitable, because it does not carry off any of the soil fertility. This fallacy is spread by manure cranks, who, after a struggling effort, think they have succeeded in cramming a scientific idea into their brains. "Raise calves on the skim-milk," they exclaim, "in order to get more manure to keep up the fertility of your soil." If the fertility is not sold off the farm in the form of milk, it is sold in the form of stock, so where is the difference? The dairyman who sells the milk and doesn't raise the calves, loses no fertility in the form of stock. The intelligent farmer soliloquizes thus: "If there is profit in raising calves or steers for the butcher, I shall have money to purchase foods or fertilizers to keep up the fertility of my farm." Thus we see that stock-raising, in connection with butter-making, can only be defended when there is money in stock, and the fertility craze has nothing to do with the question. These people try to make farmers believe that they must raise stock at any expense, in order to keep up the fertility of the soil.

In addition to the summer months, there are two other seasons of the year when the price of butter is below the paying margin. In early spring, a month or two before the opening of the cheese factories, there is a glut of butter in our markets—also for a month or two after the closing of these factories. The consequence is that farmers must sell their butter at any sacrifice, and the loss must be made up mainly from the profits of the cheese factory, where farmers depend upon cheese as the main source of their revenue, thus adding to the cost of production of cheese. Even if the butter was not of that miserable quality which it usually is, there would still be a loss, for our home markets can easily be glutted, even with good butter.

There are various methods of overcoming these drawbacks. Raising the standard of our butter would only be a partial relief so long as our markets are so much restricted as they are at present. We must, first of all, establish our reputation abroad, and we cannot successfully do this with a limited supply of butter. We have advantages unsurpassed in the world for the manufacture of a first-class article, and all we lack is the enterprise. We cannot establish a reputation at home or abroad so long as the farm

dairy rests upon its present footing, all classes of butter being graded alike, so that there is no encouragement for the manufacture of a first-class article. We must either improve the farm dairy or depend upon the creamery. The former can be improved by the purchase of fresh butter from our farmers and establishing factories in different localities for grading and packing. The butter could be collected from the farms by local buyers, or the purchases could be made at the local markets for cash, each mess being paid for according to its quality. Such a system would be the best dairy school in Canada. Our creamery system can only be improved by adopting European methods. In districts where all the farmers keep a large number of cows, the best system would be a union of the cheese and butter factory under one roof, so that each farmer could decide for himself whether his milk should be converted into cheese or butter, his calculations being based, at different seasons of the year, upon the relative profits in butter and cheese under his own special conditions. Such a factory would, of course, run all the year round.

Nothing but a strong prejudice could induce farmers to continue our ruinous system of summer dairying, forcing their wives and daughters to toil their lives away at profitless work during the busiest months of the year, and then again driving the young folks from the farm in winter for want of something to do. Indeed, they are also too often driven away in summer on account of having too much to do. But these are evils which farmers in their individual capacity cannot remedy. Let the question be first discussed at local clubs, the agitation then being forced upon the attention of central clubs.

There is nothing really unpleasant about winter work in the dairy, providing the management is as it should be. Dirty, cold, disagreeable stables are a serious drawback to the pleasure and profit of the work. In suitable stables and milk cellars, the work is quite agreeable either for the boys or the girls; and the cleanliness with which the cows should be kept adds to the pleasure and profit of the business. A cow which calves in October or November will, with proper care, give more milk in a year than when she drops her calf in April or May, the milking season being prolonged on account of the drying off taking place on the rich June pastures when the season is most favorable for an abundant flow of milk, leaving the busy months of July, August, and September free for the performance of the more pressing work on the farm.

Probably one of the prolific causes of poor butter (says T. D. Curtis in Rural New Yorker) results from the common use of tobacco and other stimulants, which blunt the tastes of dairymen and render them incapable of enjoying or even perceiving the delicate and delicious aroma of fine butter. It also accounts for the use of poor, strongly-flavored salt, because it is cheap, the users asserting—probably honestly—that they can distinguish no difference between such salt and the finer brands. Dairymen with tastes thus blunted send poor butter to market, expecting to get top prices for it, and are ready to swear that the quality of their butter is as good as that of anybody's. They put on exhibition at fairs, to compete for premiums, stuff that no one with acute taste would think of eating. There is no way of accounting for such stupidity, except through the blunted tastes of dairymen, resulting from the use of deadening stimulants, like tobacco, whiskey, beer, and, perhaps, highly seasoned foods. A dairyman should be a clean man, with all his natural tastes and sensibilities in a healthy and active condition.

Why I Left the Creamery Business.

BY M. MOYER.

From the repeated inquiries why I left the creamery business, I have reason to believe that my retirement, as one of its first promoters, more or less affects those who may have intended to go into the business, and that an explanation through the press will be doing justice to the industry as well as to myself. A good many of your readers know how ardently I advocated the importance of a change in our system of butter-making long before there was such a thing as a creamery in existence, and that I proved my sincerity by starting one of the first butter factories in the country, and the first one on the cream gathering system. Although I have left the business, I have as much faith in it as ever, and as long as the farmers do not realize the fact that if they want to make butter at all, the creamery is an indispensable necessity, so long are they not acting to their own best interests. If our country will ever gain a high reputation for its butter, it will have to get it through the creamery. During the time it takes a farmer to fill a keg of butter, the weather or pasture may change so that it is almost impossible to fill a keg with the same quality of butter from so many different churning, and the poorest churning will decide the quality of the keg of butter.

Like all new enterprises, the creamery had its many difficulties. I foresaw the natural difficulties, and calculated to overcome them in several years of hard work, but I did not count on all the difficulties and obstacles which would be put in the way through all sorts of misleading and deceptive influences. The first difficulty was to get the farmers to treat their milk in such a way as to give us the cream in a fit condition to make a superior quality of butter. In order to do this a uniform system of setting the milk had to be adopted, and instead of getting the cream raised in open shallow pans, flavored with the delicacies of cellar and barn-yard perfumes, deep submerged setting, I found, by careful experimenting, to be the most suitable, and therefore recommended all my patrons to use what is known as the Cooley submerged cans. This required a sacrifice on the part of the farmers so great that comparatively a few would invest. The cost of the new apparatus did not seem to be such a trial as to part with the stock of favorite milk pans, in which there was so much money invested. The next difficulty was to enable the farmers, who wished to do so, to make a perfect skimming, so that cream only could be sold and yet no waste. By dipping off the cream from the milk, I found serious objections. Farmers during warm weather very often wanted to use some milk before it was ready to skim, and could not get at it without first taking off the cream, and by taking it off with the dipper more or less of the cream was lost in getting it mixed with the milk, or else some milk was taken with the cream. Any ordinary tap would cause suction, and cream would draw through before the milk was all out, and much cream was also lost in forgetting to shut the tap the moment the milk had all run out. After much time and experience the peculiar tap now in use on the Cooley can was found to answer the purpose, and the difficulty successfully overcome. Here it required a great deal of schooling to get them to understand how to work this tap properly. A glass was put in the upper part of the can, through which the cream is measured, and the tap is so constructed

that the mouth was set to correspond with the depth of cream. By the mouth of the tap being level with the top of the cream, when the milk was all out, and that distance from the bottom of the can, it took away the suction and also stopped of itself when the milk was all out, thus saving the waste of other taps, and also enabled them to get milk when they wanted it without disturbing the cream.

I also insisted strongly, and do so still, that to get the best results as to quantity and quality the patrons of creameries must set their milk, completely covered over with water, by what is known as the Cooley process. This process keeps the milk and cream free from the dangerous influences of the air, gives it the uniform cooling most effective to raise the cream, and the most perfect ventilation. The air under the cover keeps the water from going into the milk, and if fastened down so that the water does not lift it off, and yet allow the cover to tilt, will give plenty of space for the steam off the milk to escape into the water, and also to give it a slant for the condensed steam to run out into the water, instead of dropping back into the milk.

To enable the farmers to use the skim milk to best advantage to raise calves, I saw that it was necessary that they must do the skimming themselves. With the most perfect contrived apparatus in their hands, a great many did their work well; others, through want of experience, knowledge and care, did it very incorrectly; and others, through greed, meanness and dishonesty, did shameful work. This caused a great deal of work and trouble, and forced the necessity of a system of testing. This, at first, caused quite a rumpus, as some were found wrong who were considered above suspicion, and who, in consequence, found fault with the incorrectness of the test. Time and patience, however, brought the conviction that milk can only be sold for cream at the risk of one's reputation, and the system is now universally adopted, and the cream paid according to its test value.

These, among many other difficulties, made the business very unpleasant, and took a great deal of patience and perseverance to overcome, and very trying to a man who knew that he was working up an industry in the success of which they should all be interested, and to which they could look hopefully for profit.

Another great drawback and difficulty is the unpardonable fact that farmers, as a rule, will not provide anything to feed their cows during a drouth. The factory starts up with fair prospects in the spring. The teams come in with paying quantities. The weather is getting dry, the pastures go, the cows break off, the teams come in with less every day, and the season is crippled. At best the creameries run only about five months in the year, and if three months of that is spoiled through poor pastures, who could expect a man to remain in a business with only two months of a paying business in the year? Neglect on the part of the farmers in this matter does not only hurt the factory, but it leads to the erroneous idea that cows don't pay. No business under the sun pays if run as our cows are. They are machines capable of turning out as much as 20,000 lbs. of milk in a year, but through miscalculated, or, let me say, stupid economy, the average is only about 2,500 lbs.—eight cows doing the work of one. This is an extreme case, but in all fairness, four should average what it is possible for one to do. In course of time, when farmers will feed their cows with the same prudence as they do their steers for beef, and keep not only one-half the number they should keep, then the creamery can be operated with profit and satisfaction. This we

may hope for, and the sooner the farmers make up their minds to that effect, the better for them.

Taking every possible view of our situation, I cannot see anything open for our farmers to do, to make their farms remunerative, except dairying properly managed. The question may be asked: "If the business is sure of success in time, why does it take so long to bring it about?" Differences of opinion emanating from selfish motives, is perhaps the principal cause. It does not matter what one is trying to build up, another will pull it down, if he can make money by it, or gratify, in some way, his selfish interests, regardless of the consequences to others. As soon as the Cooley system of setting milk became popular, men in all parts spring up with cans to sell, and although not one of them had ever made a pound of butter, or had any experience whatever, they were quite competent to lead the farmers in the direction of how to handle this milk, and explain the superiority of their cans. As long as experience is worth nothing, and farmers will be led by all sorts of frauds, it will take long to make any improvements. In consequence of this, farmers have now all kinds of worthless apparatuses, many of them not fit to be used by creamery patrons. Perhaps the most objectionable one is what is called the "Excelsior." This one has a funnel shaped bottom, with a spout from the centre to the outside, to which is attached a clumsy tap. This spout is about four inches in length, and so put in that it is impossible to touch with a cloth, and, therefore, from one year to the other that part of the can cannot be cleaned more than by running water through it. This same genius also puts a strainer in the lid of the can. Just imagine, with a part of the can never cleaned and the strainer never aired, what the cream will be like to send to the factory. Another tap, the shape of an ordinary molasses gate, was brought out, and the farmers bought it because it was cheap. Now, I give this as a fact, that nobody is using that tap without a loss of \$5 each year in wasting cream. If anyone is not satisfied with this statement, I can prove it to him to his entire satisfaction. This is what is called penny wise and pound foolish. With great care, judgment and experience, the Cooley tap is so constructed that the lock is ridged at the can, and if the tap would not be kept quite clean, it is on the outside and does not interfere with the milk. The sourness which will gather in the spout of the can above referred to, acts on the milk like yeast does in bread, and stops the rising of the cream. A perfectly clean can will always raise more cream than one that is not, and very often when I hear of people complaining that they don't get all the cream by deep setting, I make up my mind that they either don't keep their cans clean through carelessness, or because it is impossible to do so through a badly constructed can, or it may be owing to an insufficiency of cold water, or ice.

As we were struggling amidst all these difficulties, and by this time there were about half a dozen creameries in the country, the Government undertook to start the one on the Model Farm. Perfectly ignoring us who were in the business, an out-and-out cheese man was sent to the States to import American ideas. Their plan was different from ours, and being adopted by the Government authorities, our patrons naturally concluded that we poor mortals were all wrong, and consequently were loud in finding fault with our system. Being afraid to start, or some other cause, they did not get started the first year till late in September, and only run for a few weeks. Happening to strike a good market with their few tubs, which sold as a novelty, and butter-milk at 10c. a gallon, they issued circulars and spread them all over, showing what profits would result for creameries run for five months in the year. They based their calculations on the profits of the few weeks and applied it on the whole season. The calculation is as unreasonable as if a storekeeper sold \$500 worth of goods on a special day in the year, and then based his amount of business on that for the whole year. This confirmed the idea that we either did not understand our business, or else did not give the farmers value for their cream. Professor Brown, now considering himself quite an authority as a

creamery man, with an experience of about twenty days, and feeling the responsibility of his duty to his fellow men, gave them the benefit through his public lectures. He then strongly condemned the submerged process of setting milk, claiming that milk must have air, and also that the tin-lined tubs which we were using were no use, showing the people that these Canadians don't know anything. We had to grin and bear it. A Frenchman from Quebec was imported to take charge of the institution the second year. At the end of that year things were very quiet; the circulars were not so plentiful, for I did not hear of any one having seen them at all; but what I did hear was, that they were gradually changing into our system, and the profits did not pan out as well. The third year we hear from Professor Robinson, who had charge of it, writing to a farmer, "I think the submerged process of setting milk is preferable," and Professor Brown says, "we are thoroughly converted to the tin-lined tubs." In a few other things they are yet behind. The brakes applied to the wheels by all these influences, was more than I could bear any longer.

The most of the difficulties, however, are overcome, and those in the business have every reason to hope for fair success; and if the farmers take the interest they should, and do their part to make the creamery profitable, I predict a bright success in the near future; and when this is accomplished, your humble servant will have the satisfaction of knowing that he has been one of its earliest promoters, and one whose labors resulted in much good to his fellow men.

Of the details in the dairy to be attended to this month, it is very important that the cows should be milked regularly and as completely as possible. This rule applies with special force when the cows are drying off, and especially when they are subjected to extremes in temperature and changes of feed.

Overdoing has received its fatal reward. The depression in fancy stock still continues. At the Boad sales of Polled Angus cattle, 29 head, mostly cows and heifers, only totalled £434 3s. 6d., or less than £15 per head—just about butchers' prices. In Shorthorns, however, there is a more confident feeling. The Underley herd, 45 head, averaged £73 19s. 8d. But fancy prices appeared to be at an end, fancy stock selling at less than one-fifth of their former price.

To find the number of cubic feet in a mow multiply the length, depth, and width together. Five hundred cubic feet of ordinary clover and timothy hay, packed under ordinary circumstances, will make a ton. It is difficult to calculate precisely, owing to the existence of so many modifying circumstances. Fine new-cut hay, such as red-top and bluegrass, will probably require a little less than 500 cubic feet to the ton. Timothy alone requires 550; clover, 650; coarse meadow hay, 700 or over. After lying in the stack for a month, the bulk decreases 5 to 10 percent.

The weight of milk can be ascertained from the volume sufficiently accurate for all practical purposes. With an accurate lactometer the exact weight can be obtained. Let it be supposed that the specific gravity is taken and is found to be 1.031, which is about the average, then a vessel which would contain 1000 lbs. of water would, if filled with milk, weigh 1031 pounds; that is, the milk would be 3.1 percent heavier than the water ($1000 \times .031 + 1000 = 1031$). A gallon of water weighs 10 lbs., and as milk weighs 3.1 percent more, a gallon would weigh $10 \times .031 + 10 = 10.31$ lbs., and so on with any other quantity. Even if the specific gravity is not taken, these figures will not be far astray, for the specific gravity ranges only between 1.029 and 1.033.

The Farm.

How to Evade the Effects of Drought.

The past season's drought has been very injurious, not only in reducing our stock of winter food, but also by causing dry and bare pastures, much to the detriment of the stock grazing upon them. But in many districts the want of water was felt even more seriously than that of food. Numerous herds had to be driven many miles to reach water, while others were compelled to drink out of foul and stagnant pools. This lack of wholesome water was especially felt in some dairy districts, where there was not only a decline in the quantity, but also a much reduced quality of the milk, which, if continued, will seriously injure the rising fame of our dairy products.

Animals, especially milch cows, suffer more from the want of good drinking water than from a lack of wholesome food. Our farmers should, therefore, if alive to their interests, make strenuous efforts to have good water for their stock all the year round. If this cannot be accomplished by wells, never-failing springs, creeks, or other natural sources of water, cisterns to catch the rain water must be depended upon. These could be so constructed on the average farm that they could supply the stock with water, not only during the summer, but throughout the entire year.

The live stock on an average 100-acre farm would consist of about 5 horses, 10 cows, 1 bull, 18 young cattle, and 25 sheep and pigs, which would be about equal to 30 cows. The farm buildings necessary to house this stock, their fodder, and the implements, machinery, etc., used on the farm, would cover an area of about 8,200 square feet. The yearly rain-fall, including snow, on this surface, based upon the average rain-fall of the Dominion for the past ten years, which is 28.39 inches yearly, would amount to nearly 20,000 cubic feet. A large percentage of this amount will, however, drift from the roofs or be otherwise lost; but even allowing one-half the rain-fall to be lost, it will leave 10,000 cubic feet to be collected in a cistern. It has been found that fattening steers drink about 40 pounds of water daily during the winter months; but cows, especially in summer, would consume more than this amount. Allowing them 60 pounds daily, the entire stock would drink 657,000 pounds yearly, or about 10,000 cubic feet, an amount equal to that supplied by the rain.

As all the basement of the barn is not required for the housing of the cattle, the cistern in which the rain water is to be collected might, with advantage, be placed in the unoccupied portion of that part of the building. Let the bottom of the cistern be three feet above the level of the stable floor. This will allow the water to be let before the stock in their manger by simply opening a tap attached to the reservoir. Cover the cistern, leaving a trap door just large enough to admit a man, cement all its walls on the inside, keep it as much as possible buried in the earth, and specially collect the cool rains.

The advantages of such a cistern are:—1. That the stock is supplied with soft water, free from objectionable mineral constituents, such as carbonate of lime. 2. They can be watered, especially on stormy days in winter, in the stall. 3. There is a large saving of labor in the pump-

ing of water. 4. The stock need never, if properly managed, suffer from the want of good drinking water. In such districts where the average rain-fall is below that of the Dominion, or on farms where more live stock is kept, in comparison to the area covered by buildings, than calculated upon as above, an additional supply of water will have to be obtained, either by collecting rain in conically shaped, cemented pits, or from wells, creeks, &c.

Influence of Soil and Season upon the Quality of Foods.

We are constantly receiving communications, especially during the winter months, about the making up of feeding rations for stock, the nutritive value of certain foods, how to feed them, etc., and we have recently been asked to give the analyses of the different foods commonly used by farmers, with instructions as to how the "nutritive ratio" is calculated.

Our readers will have observed that we have said very little about nutritive ratios, and we have not gone extensively into the analysis of feeding-stuffs, which omissions are an indication that we have not placed much reliance on the scientific methods of stock feeding. We never fail to teach our readers science when we realize that such instruction could be profitably turned into practical use by them. We invariably stick to practical methods until we are convinced that science has fully demonstrated that a change is desirable. On the other hand, science has done a great deal for agriculture and dairying, and we have not failed to point out the progress in these directions. For half a century scientists have worked very hard at feeding rations, and have made less progress than in any other branch of farming.

We would say little or nothing about the subject, believing that good practical farmers are not yet behind the scientists in the most important particulars, were it not for the fact that agricultural professors, at Farmers' Institutes, have been ventilating the subject, and we believe that they go much too far in their appreciation of what has been accomplished. They seem to have implicit confidence in "nutritive ratios." If farmers could analyze their feeding stuffs, they might place greater confidence in scientific feeding; but our professors calculate on the basis of average chemical analyses of foods in Germany, where the subject has been more thoroughly investigated than in all other countries combined. This fact of itself is almost sufficient to condemn the scientific system of feeding; for the variations from the average analyses are very wide, and, besides, in Germany, where a high state of fertility is maintained, the foods are likely to be much richer than in Canada.

There are two main factors in considering the feeding value of a food or ration, viz.: (1) its chemical composition, and (2) its digestibility, and in this article we shall confine our remarks to the former. We are convinced that if the farmers would study the influences which affect the composition and digestibility of foods, they would make much greater headway in cattle feeding than by figuring on nutritive ratios, although, in skilful hands, the latter is also pretty useful. Farmers may be led into great blunders by following the rules of our professors too closely. The following embraces the leading conditions which influence the chemical composition of feeding stuffs:

The length of the growing season exercises considerable influence over the composition of the plant. In the earlier stages of its growth, it contains a higher percentage of protein (albuminoids, or flesh-forming constituents) and less crude fibre than when cut nearer maturity. These changes up to the commencement of blossoming are less rapid than during the blossom period and afterwards, which applies more specially to clovers, while grasses turn woody less suddenly and regularly.

At the same period of growth and calculated with the same percentage of water, the leaves of the plant often contain two or three times more protein than the stems, the reverse being the case with the woody fibre, so that any influence which promotes the growth of leaves produces a richer plant, and when many of the leaves are allowed to fall off by neglectful harvesting, or unfavorable weather during this period, the quality of the food will be correspondingly reduced.

A greater influence is exercised by the character of the soil, which also effects a relative difference in the weight of the ear, stem, and leaf. A light sandy soil usually produces a plant containing a less percentage of protein than a heavy clay, although the palatability may sometimes be greater. A wet, sour, and marshy soil produces a poor quality of food deficient in aroma.

The quantity and quality of the manure applied, also the climate and season, affect the quality of the food very materially. The effects of a fertilizer rich in ammonia and phosphoric acid are sometimes more powerful than the character of the soil. Ammonia fertilizers produce crops rich in protein. Equally powerful are the effects of the weather upon the quality as well as the quantity of the crop. A warm and sufficiently moist season often produces the same results as the richness of the soil or a liberal manuring in less favorable seasons.

The state of the weather during the harvesting of the crop influences the quality to a considerable extent. Under heavy and frequent rains, the food deteriorates greatly in quality and palatability, aftermath and clover more than hay. Such food is much worse, and often even dangerous, if it gets muddy and covered with mold.

There are also many other minor influences affecting the quality of the food, the exact effects of which cannot be so accurately ascertained—such as a sunny or a shady location in the field or meadow, the lightness or heaviness of the crop, chiefly the whole system of cultivation, the variety (especially with root crops), the methods of harvesting, and preserving, etc.

Of course it is impossible to take all these conditions into practical account in calculating nutritive ratios; but the intelligent farmer can use these rules as a very valuable guide in his estimates, as he will be able to determine with tolerable accuracy how much he should vary from the average analyses. Even if we had feeding standards of our own, it is doubtful if many farmers could make much practical use of them, as there are yet many important points to be decided, especially in the digestibility of feeding stuffs.

In our next issue we shall explain the digestibility of foods, and give rules for calculating feeding rations, accompanied by tables giving the average and variable chemical compositions of the feeding stuffs used on the farm.

Advocating what is Called the Herd Law.

BY HENRY IVES, BATAVIA, N. Y.

I am not posted as to whether you have in Canada a law similar to our herd law, forbidding citizens from allowing their live stock to roam and pasture at will on the public roads. If you have, it is unnecessary for me to write or you to publish in its favor, because all under such a law are so entirely satisfied with it, and would not willingly submit to live again under the old and arbitrary rule requiring every one under the penalty of having his crops destroyed by what are called road cattle, to put himself to the expense and often great inconvenience of building a barrier of prescribed strength and stature for the proper fencing out of somebody else's cattle. He may have no cattle himself, or wish to have his land on the front of his premises thus cumbered with a fence; but, for the want of a proper herd law to protect him, his crops, or his lawn, or his garden, may be destroyed by a neighbor's cow, without redress, unless, forsooth, he can prove that he had provided a good legal fence for that neighbor's cow, and used proper precaution to keep her out. These at least were the requirements here in New York State until some 16 years ago, when our State laws were so revised that each person having live stock should be accountable if they trespassed on any public or private lands except his own, or as he should provide for them, requiring us to fence in instead of fencing out, and only (so far as the public roads are concerned) requiring us to fence for our own cattle, instead of for other people's. The old law requiring us to fence public roads and public lands against other people's stock, was, I think, only tolerated by custom and long practice, teaching us to think it was all right. But now, seeing how well we do under our present herd law and how much every one is pleased with it, there is not a York State man who would willingly submit to the expense, care and vexation of guarding his premises against road cattle. The way this absurd old practice came to be handed down to us was like this: The first settlers, whether in the woods or on the prairie, would fence around their first clearing or improvement, but let the stock run at large. This continuing until about all the land came under improvement, left what stock was running at large to be on the public roads, and every farmer was obliged to fence against them to save his crops. It was well known, too, that these road cattle learned to be very shrewd in opening gates, or in slyly slipping through gaps, or in jumping fences, to feed on and destroy gardens and crops.

After adopting the new herd law here, a few farmers who would dare to do it threw open their gates and let down their bars and fence gaps, and finding this to be perfectly safe, as there were no cattle or hogs in the streets, they finally, as occasion required, would remove their street fences altogether, and withal, would be very agreeably surprised to find that their garden, crops or premises would all rest much more secure, even thrown open to the roads, than they formerly could with the best of fencing. This is coming to be so well understood now throughout the country, towns and cities, that the front and road fences are being removed to a great extent throughout the State. Many costly and good ones are taken away, others that were old and poor are cleared off, and the ground made available for mowing or for crops, and the premises look much the better for it; for, in fact, all fencing that is not needed is only a nuisance that should not be tolerated or allowed to encumber one's premises. The face of nature or the landscape looks the better if unobstructed by a fence, and can better take care of itself, too; for any fence is a harbor for foul growths and for vermin, and causes drifts to obstruct travel or

smother crops, so much so that for all the fencing needed on the farm, as far as possible I would use portable fences, which could be removed when not needed and either put under shelter until wanted another season, or used for fencing another lot in the rotation course.

Before adopting our present cattle law, it was only a few of the most enterprising farmers that would dress and keep the road sides along the farm front free of foul growths and in good trim, or would have the courage to plant shade trees along the highways, when, after much staking and guarding, they were so liable to be destroyed by these street cattle. But with our present law all this is changed, and for the better, and now many farmers, after first removing a road fence, extend the field tillage and crops out to the centre of the road or to the wagon tracks, and these, whatever they be, are seldom disturbed in the least, but harvested with the rest; the ground seeded to grass and clover, to be mowed by machine the following year. As most of the road fronts become thus seeded, by common consent their product belongs to the farm bordering on them, and prove quite as valuable for this purpose as any mowing on the farm. The common way for tilling, dressing and seeding down the road sides where the fence is not removed, is to plow well in the fall and in spring plant to early potatoes. These, well tilled, will come off early, when a little more tilling and some grading when needed, will prepare it for being seeded to grass by the middle of Aug. or first of Sept.; then for years after it will pay the farmer as well as an equal amount of his meadow land, and in fact not cost him much more work than the law would require him to do on the same ground in subduing the foul growth, if it had been left to itself. The law also encourages the planting of trees along the sides (some 9 to 12 feet from the farm line), by allowing the planter 25 cents a tree in every 40 feet along his front, this to be deducted from his road tax. This commutation is seldom called for, because the farmer is shrewd enough to see how much to his own advantage it is to thus have the use of his land (for the trees will be his under a heavy penalty on any one disturbing them). He is shrewd enough also to know that good work on his public roads pays about as well in the long run as any work he can do. As to trees for road planting, the maple and the white American elm are the favorite forest trees, and the apple is quite extensively planted for fruit, some good Samaritan farmers using all the varieties of early and late ones, with which the traveller may refresh himself; but more commonly a hardy winter apple only is planted. For single rows a rod apart is far enough, and this alone will allow of quite extensive fruit planting on many farms. Finally, the result will be, with these well mown road sides, bordered by their fine rows of trees, to the traveller, as of having his driveway through an extended lawn; and to the farmer, a relief from the losses and anxiety caused by the "street cattle," and the enhanced value and attractiveness of his farm premises.

Clay as a Component Part of the Soil.

In our last issue we pointed out the advantages of vegetable matter or humus as a component part of every fertile soil. We now turn our attention to clay, which also plays an important part in its chemical composition and mechanical condition.

Clay has its origin in the decomposition of silicious crystalline rocks, chiefly granite, containing large percentages of felspar, and are consequently rich in potash, with varying percentages of lime and soda.

Clay possesses, when wet, on account of the delicateness and fineness of its particles, which pack closely together, a tough, plastic character; but when dried out, it forms a stiff, hard mass. It is the chief cause of the cohesiveness of the soil. When it contains a large percentage of clay, it is called a *heavy* soil, because a great expenditure of power is required in tilling it. It

can only be worked to advantage when in a medium condition of moisture; when too wet, it puddles, and is not then in a fit condition for producing a profitable crop; when quite dry, it will scarcely yield to deep cultivation. Such a soil is locked up, as it were, and resists deep penetration of the roots of the growing crop. During a drought it also suffers contraction, producing gaps and fissures, which break the roots asunder, whereby the vegetation may become greatly impeded in its growth. The freezing of a plowed clay soil in winter exercises a beneficial influence, lessening the coherence of the particles, and promoting the growth of the succeeding crop. Therefore the stiffer the soil the more it is benefited by a deep plowing in the fall.

Moreover, a clay soil is cold and inactive; it admits the warm rays of the sun with difficulty, and prevents them, as well as the air, from penetrating the deeper layers. Even when the soil is rich in plant food, the latter cannot produce its effects rapidly enough. A heavy clay must be liberally manured, if a profitable crop is expected, and fresh, strawy manure is preferable to a brittle, strongly decomposed quality, for the former aids materially in loosening up the soil. Commercial fertilizers, owing to their uncertain action, seldom produce paying results on such soils.

Besides, clay produces a wet soil; it is more or less impervious to water, retaining much moisture which evaporates very slowly, while it exercises also, during dry weather, very little capillary power, by which little moisture is raised to the surface from the lower strata. A heavy clay may, therefore, be quite dried out to the depth of an inch or so, while the deeper layers may contain a surplus of water. These extremes, both of which act prejudicially to the growing crop, are caused by insufficient capillary power. In a clay, the absorptive power is very much less than that in a loam, and especially that in a vegetable soil. Indeed, clay can absorb and retain a much greater quantity of water when thoroughly stirred and puddled, but this can only take place in the surface soil; on the other hand, slightly below the surface and in the natural state of the soil, the cohesiveness is so much greater that not so much water can penetrate the pores as in a soil of lighter texture. These conditions can, indeed, be improved by efficient drainage; but when the clay is very heavy, even this method of improvement operates slowly and imperfectly.

These conditions are, therefore, such that a stiff clay offers great difficulties to profitable cultivation. The case, however, is quite different with that class of soils which is termed *loam*. A loam is a soil which is made up of a thorough admixture of fine (but not dust-fine) sand and clayey substances—a mixture which is of much rarer occurrence in soils formed from decomposed rocks than in alluvial soils. Such a loam soil, if sufficiently deep, is better adapted for profitable cultivation than that of any other quality; it has nearly always a much greater fertility, so constitutes a rich source for available plant food, and admits of the most thorough utilization of both farm-yard manures and commercial fertilizers. Loam has, in every respect, a medium physical quality, best favoring the growth of mostly all agricultural plants, and offering the least obstruction to tillage operations; it receives the heat sufficiently rapid, permits the warmth

to penetrate deep into the subsoil, and retains it for a proportionately long time. Besides, a good loam has great capillary action; the water rises as absorbed moisture through the particles of soil, thereby leaving the spaces between the particles open for the free circulation of air, bringing up the moisture from the lower layers to the surface with sufficient rapidity. This action causes the roots of the growing plants to spread and flourish in all directions, a great reservoir of moisture being constantly at their disposal, and they cannot, therefore, be easily disturbed in their development by continued droughts. A genuine loam is specially adapted to extensive agriculture, but for garden purposes, or the cultivation of vegetables, a sandier soil is preferred.

There is another class of loamy soil, however, which is dreaded by the farmer. It is, indeed, composed of clay and sand, but these substances are imperfectly mixed. The sand separates easily from the clay, and the soil swims together after every heavy rain-fall, forming a crust on the surface, which admits air and water with difficulty. Such soils are usually poor, raw, and dead, and can only be ameliorated by diligent cultivation, the application of large quantities of vegetable manures, lime and marl.

In our next issue we shall describe sandy and calcareous soils.

Potato Tests on Our Experiment Grounds—Fertilizers and Methods of Planting Tested.

Our objects in conducting these experiments were: (1) To investigate inquiries overlooked by other experimenters; (2) to determine what plant food or foods our grounds were most deficient in; (3) to educate our readers in this important branch of agriculture; (4) to confirm or disprove other experiments made in the same line of investigation.

The tests were conducted on a light sandy loam mixed with abundance of vegetable matter to an average depth of nine inches. The soil is of a uniform nature, and is admirably adapted for these experiments. The grounds had been cropped the previous year with potatoes to which a liberal dressing of farm-yard manure had been applied in a practical manner. Before this time it had been lying idle for a number of years.

In order to obtain reliable results, we found it necessary to drain our grounds, as described in a previous issue. The potatoes for the fertilizer experiments were planted on the 13th of May in trenches four inches deep. The seed was cut into pieces weighing an average of 1.65 oz., and dropped exactly one foot apart in the row, so that each plot being of the same size, as well as having the same number of seed pieces, had the same weight of seed, viz., 30 bushels per acre. The fertilizers, excepting in two cases where it was top-dressed, were distributed in the bottom of the trenches before planting the potatoes.

Instead of applying the same weight of the different fertilizers, as done by some experimenters, we applied them in such weights that each one, of the same class, contained as much plant food as the other. For instance, in the phosphoric acid group, each fertilizer—mineral superphosphate, bone superphosphate, bone black (bone char), ground bone, and ground apatite—was applied in such quantities that the phosphoric acid it contained was equal to that found in 300 lbs. of chemically pure apatite, or pure

phosphate of lime. The potash and nitrogen fertilizers were applied on the same basis. When combined fertilizers were applied, such as apatite and ashes, the phosphoric acid found in the ashes (a potash fertilizer) was deducted from the quantity of phosphoric acid to be furnished by the apatite.

The general fertilizer was a mixture of various fertilizers compounded in such a manner as to supply all the constituents of plant food. With this the bran, also a general fertilizer, was compared. The quantity applied had the same market value as the fertilizer with which it was compared.

The following table shows the analysis of the principal fertilizers employed:

TABLE SHOWING ANALYSIS OF FERTILIZERS.

Name of Fertilizer.	Total Lime, %	Phosphoric Acid, %	Total Phosphoric Acid, %	Percent of Phosphoric Acid Soluble.	Nitrogen, %	Potash K ₂ O, %	Lime Ca O, %
Mineral Superphosphate	70	32	12	.....	.....	.....	.....
Bone Superphosphate	35	16	15	2.2	.....	.....	.....
Apatite	75	34.3	.....	.....	.....	.....	.....
Ground Bone	45	20.6	.....	.....	.....	.....	.....
Bone Black	62.2	28.5	.....	.....	.....	.....	.....
Wheat Bran	.....	2.8	.....	.....	2.7	1.6	0.14
General Fertilizers	50	22.9	9.0	3.4	6.6	.....	.....
Muriate of Potash	.....	.....	.....	.....	53.2	.....	.....
Sulphate of Potash	.....	.....	.....	.....	41.7	.....	.....
Ashes	3.9	1.8	.....	.....	6.76	37.3	.....
Nitrate of Soda	.....	.....	.....	.....	16	.....	.....
Sulphate of Ammonia	.....	.....	.....	.....	21	.....	.....

In our next issue we shall give the results of our experiments with the above fertilizers; also the results of the different methods of planting, different quantities of seed per acre, etc., and shall make the necessary comments thereon.

We are indebted to Messrs. Peter Lamb & Co., Toronto, for furnishing us with the ground bone and bone superphosphate free of charge.

Farming in the Northwest.

BY A FARMER'S WIFE.

It has been a vexed question for some years as to whether the Northwest will ever be a farming country or not. Now that we have had one fairly good year, the question to many will have received a favorable answer, and no doubt down in Ontario, people will hear fabulous accounts of enormous crops without stopping to consider the vast extent of land on which these same crops were grown, will jump at once to the conclusion that without much trouble we can in the space of a few years grow grain enough to make us wealthy.

Another thing that will help these ideas is the visits just paid by some of the leading press men of Ontario (the editor of the FARMER'S ADVOCATE, amongst others,) to our fairs. These gentlemen have seen the country at its very best; they have seen our enormous vegetables, bags of splendid grain, etc., everything being of its kind good, and they also will think that if we only continue to have favorable seasons our troubles will be all over, and we are on the straight road to fortune.

In order to show that this is not exactly the case, I am writing this. No doubt, if the seasons are good, we can grow good grain out here, but there are difficulties as yet in the way, and very great ones. Manuring here so far is purely experimental; no one really knows yet what the

land wants. They know it is good, first rate soil, but one thinks summer fallow, and another breaking, gives the best crop, etc., none knowing exactly what to do to ensure a good crop. Still farmers are finding out that where the land is hard and firm enough to retain moisture for a long time, they are sure of a crop, and this is shown by seed falling on the hard road, the wheat from which is always tall, strong, and fresh looking, when the adjacent fields are burnt up; also volunteer crops are sure to be good. When the Experimental Farms are in running order, they will try all these various ways, and will in time be able to decide the right thing for the land, and help the farmers out of some of their present troubles.

Then, "the gophers," and no one who has not had dealings with gophers has any sort of idea what pests they are. One farmer here has devoted all his time this summer to killing gophers, and he calculates that on his crop of thirty or forty acres he has killed no less than four thousand gophers, and saved his crop. Now, no ordinary farmer has time to kill four thousand gophers and attend to his other work—and it is a stubborn fact, that unless gophers are killed daily, from early spring until the grain is harvested, they will come in and mow down a crop as though some one with a scythe had been through it. As the country gets settled, no doubt, gophers will be exterminated, for every farmer must in self defence wage war against them; but until there are no gophers, no farmer in the gopher regions can ever be quite sure of a full crop.

Vegetables—such as roots of all kinds, potatoes and cabbages, can easily be grown where there is some shelter from the wind, and plenty of manure used, and there are certainly some grand vegetables grown here by people who devote their time to them.

It is also a fine country for stock, the grass being so very nourishing that cattle fatten in a very short time.

Gopher Lodge, Indian Head, N. W. T., Oct. 13, 1887.

PRIZE ESSAY.

Can a Provincial Exhibition, Purely Agricultural, be Made Successful and Self-Supporting?

BY JOHN S. PEARCE, LONDON, ONT.

In reply to this question I would say that it should; but to do this would require a great deal of close and careful attention on the part of a board of live, competent men, who would have to elicit the sympathy and hearty support of the farming, mechanical, stock, poultry, horticultural and dairy interests of the country. How to elicit this sympathy and support is the question, and with a view to give your readers some idea of what a real agricultural show should be, I will go over a few of the leading points.

To be successful it must be self-supporting, and to be self-supporting it must have a large attendance, and to draw this large attendance is what would tax the members of the board. The day for an ordinary agricultural show has gone by, and the public demands a variety of sights and subjects, and we notice that many of our staid farmers are being carried away with these new side shows and other attractions that infest our agricultural fairs, and instead of making the horses, cattle, sheep, etc., a study, they spend a large share of their time looking at some fellow talking himself hoarse and trying to draw from

their pockets the coveted dime or possibly more.

Now, my idea of an agricultural exhibition is that it should be a place where the farmer, mechanic, stockman, poultry man, horticulturist or the dairyman can come and see and learn something and go home and profit by that knowledge. To do this would require a good deal more than the mere display of the various lines of goods or stock, as is now usually done at our fairs. Some special effort should be made to make each department as interesting and instructive as possible, and introduce some new features that would both be instructive, interesting and entertaining. To do this would require at least one thoroughly competent man at the head of each department, and he in turn would have to be ably and strongly assisted by others drawn from some of the other committees or boards, or by live, active, young farmers or otherwise, as the case might be.

Just what these attractions or "interesting and entertaining attractions" are to be or should be, is a question not so easily answered or discussed, but to my mind there should be more attention paid to instructing the audience or attendance, instead of—as is now done—exciting and cultivating some of the low, rowdy amusements and tastes. I think it is very bad taste on the part of any agricultural board to allow inside their gates the side shows, fakirs, games of chance, or anything that has a tendency to lower the taste or morals of a community or audience. These should not be allowed inside the gates of any exhibition grounds upon any conditions. Let all those who have a taste for these go outside.

Instead of these and many other objectionable attractions, I should endeavor to have a grand display on each day in some one of the departments. For instance, we might take the stock. Now, why could there not be a grand parade and march past of all the prize stock in their regular order, 1st, 2nd, 3rd and 4th prize animals in each class, and for this occasion give a special prize for the best herd, to be tastefully decorated and made attractive in some way, and let there be the penalty that all prize animals not in the procession shall forfeit their prize money. This could be preceded or followed by a procession of the horses in the same way. This would give the visitors an opportunity of seeing all the different breeds both of cattle and horses, and would be an occasion that I am sure many would take advantage of. In fact I believe that if well managed, we would find the ring and grand stand quite as full as it usually is on the occasion of a sword contest, for instance, and no doubt would be very much fuller. An earnest effort on the part of the stock committee, together with the hearty co-operation of the owners of the stock and horses, could accomplish this. In fact, I would look upon this as one of the best means of displaying and advertising their stock. Then there should be more thorough, competent judging of the stock, and this should be so arranged as to be got through with not later than Wednesday noon.

There is another feature or attraction that would be most interesting and instructive. There should be a plot, say $\frac{1}{2}$ to $\frac{3}{4}$ acre of ground, well and carefully laid out as a vegetable, small fruit and flower garden, with all the vegetables, fruits and flowers growing and named. This would be a most interesting feature, and would be visited by thousands.

I might say here, in passing, that these new

features should be very prominently brought out in the catalogues and also in the bills and posters.

There should also be a plot laid out with all the trees suitable to our climate, and these all carefully grouped and named.

Another very interesting and instructive feature of such an exhibition would be a collection of all the noxious weeds and grasses, either green or dry, all grouped and correctly named. How many farmers or farmers' sons can give you the name of the trees and shrubs or foul weeds that grow on their own farms?

Another very interesting and instructive feature that could be added to such an exhibition, would be a complete collection of all the vegetables, seeds, seed grains, etc., tastefully arranged and correctly named. For instance, say 12 or 15 kinds of cabbage (a head of each), 9 or 10 varieties of beets (one each), 8 or 10 heads of cauliflower, 10 or 12 roots of carrots (one each), same of celery, corn, onions, peas, etc., etc. Then add to this all the varieties of seed grains, corns, field roots, etc., and as many flowers as would be in season, and who would not pay 25c. to see such a collection? I know there are hundreds that would. Such a collection or exhibition might necessitate an extra building for that purpose, but I am confident it would pay and be well patronized.

Then, in the dairy department there should be some special effort and arrangement made for the display, in working order, of all the appliances. In fact, there should be a model cheese and butter factory at work on the grounds, with a competent man at the head to put in motion and explain the several apparatuses as they are being used. In this department a lecture, with experiments and illustrations of the treatment of milk, testing its quality as to fats and watering and skimming, etc., would be of great advantage to many a farmer and dairyman, to say nothing of the hundreds of cheese makers who are perfect novices in the handling, testing and treating of milk, to find out its real value either for butter or cheese.

I might go on and enlarge on these points almost indefinitely, but I think that these few crude ideas will give your readers some ideas to think and talk over among themselves. The matter lies with the farmers of the country as to whether such an exhibition can be made successful, and if they, as a class, set their faces against our agricultural exhibitions being turned into circuses, with the stock, horses, etc., as side shows, the managers of these exhibitions will soon drop out the circus part and take up the more important parts.

There is no getting round the fact that farmers do not take the interest in these exhibitions that they should. The majority of farmers who need the stimulating effect of these exhibitions do not take the interest in them that they should do. There are very few farmers who fail to see the great advantages and benefits which may be derived from agricultural exhibitions, if properly managed, and yet these very men will take no part in them because they are not conducted just as they think, and in accordance with their views, and will give as a reason for not taking part, "because there are so few members and the prizes are so small that they are not worth competing for." And, right here, I would like to say that a large class of exhibitors lay too much stress or value on the money prizes. I think this is a mistake. The honor should, to my mind, be of much more value to an exhibitor than the money. Another bad feature that is cropping out at many exhibitions is the practice

of a set of farmers who make a business of following up all the shows with a stock of sundry articles that have already figured at several exhibitions, and some of the articles have been purchased for the purpose at some of the large exhibitions and made to do duty at perhaps 5 or 6 county and township shows. This is not right and should be stopped.

The want of interest on the part of so many of our farmers is the greatest hinderance to the success of our exhibitions. Farmers should take more interest in all these exhibitions, and other matters as well. They should come to the front and make their voice heard. The great want among farmers is organization, as was pointed out in a previous essay of mine on "How can public expenditures for agricultural purposes be turned to the best interest of the farmers?" Farmers should organize, and only by so doing can they make their voice and wants heard. Let every farmer take an active interest in some exhibition, either a township, county or larger one, and he will be doing both himself and his fellow farmers good. Let each one put his shoulder to the wheel and help along this most important work. Fairs and exhibitions have been and are one of the best educators, and they should go on and continue to do so; there is plenty to do and plenty of room to still improve them and make them doubly attractive and instructive. They should be well and honestly supported by every farmer in the country of any intelligence and enterprise.

In breaking in colts, it is an excellent practice to hitch them in a wagon with fast walkers. Fast walking horses are profitable and are getting popular, and they can be taught more easily when trained young.

To find the contents of a barrel or cask, multiply the square of the mean diameter (in inches) by the number of inches in height, and divide the product by 29.5. The result is the number of wine gallons.

Hoard's Dairyman states that on account of the drought of the last season, twelve good cows, of which four were fresh fall milkers, were bought at the end of August by a farmer near Charles City, for \$100, being \$8.33 per head.

To find the contents of a wagon-box or a bin, multiply together the three dimensions in inches (length, height, and width), and divide the product by 2,150.42 (the number of cubic inches in a bushel), and the quotient will be the number of bushels.

FERTILIZERS REQUIRED FOR ORCHARDS.—The Rural World says that a hundred barrels of apples will take as much phosphoric acid out of the soil as will a hundred bushels of wheat, and as much potash as fifty bushels of wheat; and it is, therefore, obvious why an orchard becomes exhausted when no food is given, and that the failure to bear good crops is simply to be ascribed to starvation.

WATERING SHEEP.—An English paper says: The necessity, or the advisability, of giving sheep and lambs water every day will depend on what they have to eat, or where they spend their time. Wherever there is green provender, and the chance of catching the dew upon the blade, neither sheep nor lambs require water. But if the pasture is burned up a supply of water is absolutely necessary. Lambs do not require it more than sheep, except so far as, being weaker, they cannot bear privation so long. It may be said that it is better to err on the safe side, and, if there be a pond or brook accessible, the flock had better be taken to it at least once a day. They will soon show whether they be thirsty or not.

Stock.**The Range Cattle Situation.***[From our Chicago Correspondent.]*

It now turns out that last winter's losses on Montana and other western cattle ranges were, in many cases, as high as 80 percent. Think of it! what other business could stand such a collapse in value and still enable the principals to continue? True, there have been quite a good many failures among western ranchmen lately, and among the banks that were carrying them, but it is not so astonishing that some have failed as it is that every one sustaining the terrible losses of last winter, followed by the unprecedented low prices of the past season, did not go to the wall. The Texas Live stock Journal, of Fort Worth, makes a statement which shows, indirectly, how it was easy in the days of ranch booms for men to roll up fabulous fortunes very quickly. It says:

"Lest there be any doubt about it, the Journal will continue to assert that at present prices for beef, Texas cattlemen can raise cattle at a profit. * * * The cattle are no longer paying the banks 18 percent per annum and then leaving the ranch owner an additional 25 percent, but there is a living profit remaining in the business."

In connection with the above it may be interesting to give a few comparative figures of prices now current, which enable Texas ranchmen to get "a living profit," and those current three or four years ago, and the reader may draw his own conclusions of what the profits must have then been. Present prices for Texas cattle are as follows: Steers, 950 to 1,100 lbs., \$2.20@2.60; 700 to 850 lbs., \$1.75@2.30; cows, 650 to 850 lbs., \$1.25@2.15; yearling heifers and steers, 450 to 600 lbs., \$1.25@1.75; bulls, \$1.40@1.90; calves, \$2.50@3.00 per hundred pounds live weight. Now, compare these prices with 1882: Steers, 950 to 1,100 lbs., \$5.00@6.00; 700 to 850 lbs., \$3.75@4.75; a few barren and aged cows sold at \$3.15@4.50; bulls, \$3.15@4.00; breeding cows, none marketed for beef, but extremely hard to buy on the range at \$25@30 per head, such as are now selling for beef at about \$7@9 per head net; yearlings on the range at \$16@18 per head, and scarce at that, against \$4.50@7 per head net for beef now. Then it was hard to get enough steers to supply the beef market, while yearling and she stock could hardly be had, even at very high prices. Contrast the difference. The market this year has been flooded and swamped with steers in all conditions of flesh (except really fat); cows and heifers marketed by the hundreds of thousands. One man sent in 1,063 heifers in one consignment that sold for \$1.35@1.55 per hundred, averaging about 475 lbs., and another cattle company sent in about 1,000 head of yearling steers and heifers for which the check representing the net price for the lot at market was less than \$5,000. Just compare this with what they were worth four years ago, and remember that "there is a living profit remaining in the business" still.

Two or three years ago ranchmen commenced checking the production of range cattle by spaying large numbers of heifers and cows and letting the stock of bulls run down; but within the last year they have been taking more heroic measures; like the Yankee who cut his dog's tail off "just behind the ears," they have exchanged the spaying knife for the spear and cleaver, and if

the overproduction is not speedily checked in this way they will have to give it up for a bad job.

But one great reason why range cattle have been thus sacrificed is because money has been scarce; bankers have forced ranchmen in some cases to sell everything that would realize a dollar, and the capitalists who were rushing after cattle like madmen when they were worth three times as much as now, and fully twice as much as they ever ought to have been worth, are now standing back afraid to take hold.

Good corn-fed cattle are holding their own at \$4.75@5.40, and judicious feeding of beeves promises to pay.

Receipts of cattle at Chicago this year are already some 280,000 ahead of last year.

Ventilating the Stable.

There is no doubt that the construction of warm stables without efficient ventilation has had a great deal to do with the prevalence of disease amongst our stock. It has been the interest of the owners of fancy stock to advocate warm stables to conform with the artificial conditions under which such stock is reared.

The first principles of ventilation are quite simple, although they seem to be very imperfectly understood. They are simply this: The warmer the air the lighter it is, and when specifically lighter than colder currents in the surrounding space, it ascends, the space being occupied by the cooler volumes. Warmth is a constant emanation from the bodies of all the higher animals, and as the exhalations contain a noxious gas (carbonic acid), as well as warmth, it is very desirable that they should be permitted to ascend, the space being filled with pure, cool, bracing air. When heat is produced in this way, the more poisonous and unhealthy the stable becomes. With cattle which retain their natural hardness to any appreciable extent, the process of ventilation is very simple, but with fancy stock, it being desirable to remove the foul gases and retain the warmth, the question is a complicated one, and it is no wonder that the use of stoves in the stable is being agitated.

Inseparable from the question are the causes of the temperature of the natural air in the stable; that is, the condition of the air when no animals are in the stalls. In the chink stable, this temperature is about the same as that outside, and in all stables built above ground the natural tendency is towards outside temperatures, for cold and heat penetrate all kinds of walls, the benefits being mainly protection from sudden changes of temperature. With underground stables, however, the case is different; for the temperature there tends strongly to conform with that of the ground against which the walls are built. The temperature of the soil varies with the depth, and below the freezing line the temperature is pretty constant all the year round. The temperature of the stable is therefore largely governed by the character and location of the soil against which the walls are built. At three to four feet deep, the average yearly temperature of the soil in our climate is about 50° Fahr., the variations being between 45° and 60°. The natural temperature of a close stable would not therefore vary much from 50°—just the temperature at which the stable should be kept. However, as it may safely be reduced to 47° or 48°, this will make allowance for frozen ground around the upper crust of earth against

the walls, and on an exposed wall on the front of the stable. Practically, therefore, all the heat produced by emanations and exhalations from the animals may be removed from the stable, and the ventilators which will remove this heat will also remove the poisonous gases. More accurately, we should have said nearly all this heat should be removed in order to make allowance for occasionally opened doors, and other openings. But this calculation is based upon the supposition that the air admitted to replace the warm air is the same as the natural temperature of the stable, which is not the case in the ordinary systems of ventilation.

How can winter air at 50° be admitted into the stable? Simply by leading an underground pipe into the stable, which will heat the air in winter and cool it in summer. The admitted air will tend to conform to the temperature of the soil at the depth at which the pipes or tiles are laid. The limit of this article will not admit of our going into calculations as to the size and length of these pipes. However, if they are too short, the temperature of the soil will not act rapidly enough upon the air during its passage; and if too small, the velocity of the air through them would be so great that the same results would follow. This latter objection may be overcome by admitting several pipes into the stable; but it would be much cheaper to admit one only. When one is admitted, it should enter the stable near the centre, and the ventilators should be as far from it as possible. If a pipe is led say into each corner of the stable, there should be only one ventilator, which should go up through the centre of the building. A large cap should be placed over the end of the pipe which comes through the stable floor, so as to distribute the admitted air in all directions through the stable.

The General Purpose Cow.

There is a great deal of misunderstanding on this question, and it cannot be fairly discussed without definitions. By ordinary acceptation, however, the general purpose cow is supposed to be one which produces milk and beef with equal facility. But as milk is usually converted into butter or cheese, another problem is involved, viz., the relation between the beef, milk, butter and cheese. If this ended the complication, there might be faint hopes of a partial agreement amongst a few of our high authorities. In reality, beef itself comprehends as much as the group of milk, butter and cheese. A standard must be set for beef as well as for milk. The quantity and quality of the beef are affected by the breed, feed and management—just the same as milk. If the Xmas fat stock show steer or cow is to be taken as the standard for beef, the discussion on the general purpose cow has a different basis from the standard of beef based upon a rationally fed and managed animal. The intrinsic, nutritive value of beef is derived from the muscular development of the animal, and not from the fat, just the same as the genuine value of milk is based upon the solids it contains and not upon its water.

Now it is plain from this exposition of the question that the general purpose cow cannot be discussed without first considering the advanced or backward state of intelligence of the people amongst which the cow is situated; for in countries where the milk is tested and paid for according to quality, the milk, butter and cheese

characteristics of the cow are united into one, and may be termed milk, thus simplifying the question very materially. In the same manner, in countries where the hygienic intelligence of the people is developed, the standard for beef is the animal which produces the most muscular tissue of the best quality; thus the problem becomes double simplified. Formerly in our own country, and still in many other countries, the capacity of the animal for work was an important factor in the varied characteristics of the general purpose cow, and this quality cannot yet be ignored in discussing the question from a universal standpoint.

Now therefore the general purpose beast, in the widest sense of the term, must be profitable in all the following essentials: It must lay on a huge batch of tallow when fed for the Xmas fat stock show, and when fed for family consumption, it must lay on an abundance of muscular tissue, deliciously interspersed with fat cells. It must put on profitable layers of young beef during old age. It must give immense quantities of milk of poor quality, when the milk is delivered at cheese factories, or is consumed by the inhabitants of towns and cities, and when the milk inspector comes round, or when the milk is paid for according to quality, as in Europe, the milk must suddenly change into that of a first-class quality. When the milk is delivered at the cheese-factory, it must make large percentages of cheese, and when delivered at the creamery, it must make large percentages of golden butter; in other words, the cow must let down milk rich in casein for the cheese-factory, and milk rich in butter-fat for the creamery. She must convert all her food, and most of her flesh and bones, into milk during the milking season, and after a while, she must convert all her food and milk into tallow. If she is to be sold to the city dairyman, she is called upon to convert half of her food into milk and the other half into flesh or blubber, to be fit for the block when the snow begins to fall. When the plowing time arrives, the poor creature is asked to convert her food, milk, and tallow into plow-force. If the fertilizer man is the highest bidder, she is to convert her food into bone, horn, hoof, flesh, blood, hair, &c., for fertilizing material of the highest chemical analysis; and above all, if her natural destiny is in the hands of the theoretic soil restorer, she must convert her food, bone, muscle, milk, hide, &c., into a manure heap.

After all these recommendations and qualifications on behalf of our general purpose cow, some people still maintain that our farmers are poor. Seriously, it is time that some experimenting was done in this line of investigation. Authenticated proofs of material value there are few or none, but the general purpose theorists have the worst of the arguments. Given that milk and beef standards are once established, we have then only to deal with the beefing and milking qualities of the general purpose cow, and it is contended that such an animal may profitably exist. There are two phases to this question: (1) The animal or breed that produces milk and beef from the same food and at the same time; (2) the animal or breed that produces milk during the milking season, and can lay on beef readily and profitably after the milking season is over, possibly also at an old age. The Shorthorn is taken as an apt illustration of the principles upon which the general purpose cow may be defended; but the arguments are

fallacious. It may be quite true that a certain Shorthorn cow gives *as much* milk as that of any other breed, and may give a more profitable carcass afterwards, but this is not what the farmer wants to know. He asks, How much milk would the Shorthorn give if the breed were converted into milkers exclusively? Certainly *much more* milk than any other breed, and it is quite probable that this extra quantity may more than pay for the whole carcass. This question cannot be decided without considering the quantity and quality of the food consumed. It is unreasonable to compare a heavy Shorthorn with a light dairy breed, and it is well known that, as an approximate rule, animals consume in proportion to their weight.

With reference to the other phase of the question, viz., the profitable production of beef and milk at intervals, there is no scope for argument. A cow that is a special milker in summer and a special beef in winter is to be classed as two separate breeds, and may be treated as such in every respect. However, the existence of these two divergent qualities requires proof, and from a physiological standpoint is an impossibility. No animal can be changed from the vital to the nervous temperament, and so long as nature prohibits such a metamorphosis, the height of perfection cannot be attained in both the beefing and the milking qualities of the same animal.

Hairy Legged Horses.

Judging from the prevailing fashion amongst some of our cart horse breeders, it would almost seem as if hairy legs or feather were sought after as indicative of weight and strength of bone, says a correspondent of the Farmers' Gazette. This, it will presently be seen, does not necessarily follow. Size of bone is very desirable in a heavy draught horse, but the quality of the same is of far greater moment than the quantity. That thickness of bone does not denote strength can be proved by comparing the small bones of the thorough-bred with those of the ordinary cart horse. The amount of strain which the bone can stand depends far less on its size than on its texture. It is also well to remember that development of the tendons and ligaments of the leg is subject to the construction of the bone, and whether it be flat or round, of good or bad quality. A broad, flat cannon bone is usually associated with muscles freely co-operating with the other aids to locomotion and power, and is less liable to suffer from ligamentous and joint lesions than a round cannon bone, the latter also a prolific source of contracted and deformed limbs.

The object of nearly every breeder of Clydesdale and Shire horses seems to be to secure a superabundant growth of hair on the lower parts of the limbs; but for what purpose has not yet been explained. The tastes of the early breeders would appear to have tended in this direction, until, doubtless, plenty of rough hair came to be considered indispensable. It is well, however, to inquire into the uses of such an appendage. There are, perhaps, many people who regard feather on the legs as an essential of beauty as well as of constitution in the draught horse. And we cannot deny that the appearance of a heavy, strong-boned draught horse is considerably improved by a fringe of hair on the legs; but this may only be a fancy we have acquired from long looking at that type. Breeders of the clean-legged Suffolk cart horse would at any rate say so. It would be difficult to name a single ad-

vantage in favor of long hair on our horses' legs, whereas the disadvantages of it are manifest. We must take the horse as we find him, toiling on the road or in the field, it may be in mud or in wet, and then ask ourselves whether the clean legged or the hairy-legged horse has the advantage. There is no need to recount the inconvenience of feather on such occasions, besides its evil effects in harboring dirt and scurf, and predisposing to irritation and sloughs on the pasterns and coronets.

The external influences of a profuse growth of hair on the legs are all bad, but they do not compare with those almost invariably present in its production. We cannot explain this more tersely or on better authority than to quote Professor Walley on the point. He says:—"A profusion of hair pre-supposes a coarse skin, and a coarse skin means a corresponding decrease in vitality, and consequently a greater liability to diseases such as grease, thick legs, and cracked heels. It further means a more highly lymphatic constitution, and, as a consequence, a greater tendency to such affections as 'weed.'"

That these diseases and affections are, then, the result of hair nobody can deny, and such being the case, it does seem strange that the patrons of the Clydesdale and Shire horses should go in so much for "feather." It is only a mistaken fancy, the same as color craze or something of that sort, and it would be better if breeders would disregard it altogether. Of course, fashion spreads wide, and even to foreign lands, but although some American buyers may still ask and pay for good feather on the Clydesdale and Shire horses they buy, we know from experience that on the farm, as a rule, they clip off all superfluous hair on the legs of their horses. In the winter the hair sometimes "balls" so with snow that the horses are not able to put one foot past another, and they are equally handicapped in deep mud. Many of the Americans prefer the bare-legged Suffolk or Percheron to the Clyde or Shire for this reason, so that while the home trade may still demand rough legs, a good deal of the foreign is lost through this cause.

In some of our show-yards, even, the judges pay so much attention to feather on the legs that they at times forget the horse in looking after the hair. A nice fringe, they tell us, is very becoming on a Clydesdale; but then in the majority of the cases it is overdone, and undue importance is attached to a full feather or the want of it. Indeed, a Clydesdale or Shire horse, however good it may be otherwise, has little chance in a show-ring if he is bare of hair; but there is one advantage attending this feature of the show-yard—it prevents over-feeding, which is generally attended by a casting of feather and a dreaded baldness of the legs.

Regarding the utility of heavy feathered or hairy-legged horses, let us hear what the great contractors and railway companies, who each employ hundreds of the heaviest class of van horses, have to say on the subject. Mr. Oakley, the general manager of the Great Northern Railway Company, London, says:—"For railway work, horses with long hair on their legs are very unsuitable, and we avoid purchasing them as much as possible. We find the long hair very difficult to cleanse effectually; and if carelessly done, the hair mats at the roots, and, in the opinion of our 'master of the horse,' provokes grease and other inconveniences. We have in London about 1,100 horses." Mr. Newcombe, of the Midland Railway Company, expresses himself as follows:—

"We purchase as few hairy-legged horses as possible, and always prefer a clean-legged animal. We have a decided objection to the coarse, hairy-legged horse, and I entirely concur with our veterinary when he says that such horses are more predisposed to disease, such as itching of the legs, grease, &c." We know a few contractors, indeed, who aver that a good feather on the legs prevents the glutinous street mud from getting near the skin, and acts as a protection from scab. But by far the greater number of owners and managers of large studs of van and cart horses are of the same opinion as the managers of the two railway companies above quoted as to the utility or otherwise of hairy legs. The following are a few of the expressed opinions.

Horses with moderately hairy legs have the most enduring legs and feet.—[Great Western Railway Company, London.

We do not find that hairy-legged horses have better legs or feet than clean-legged horses.—[North Eastern Railway Company, York.

We do not find hairy-legged horses so good in legs or hoofs. The hair retains the wet and dirt, and so induces cracked heels, grease, &c.—[Glasgow and South-Western Railway Company, Glasgow.

We object to hairy legs if we can get weight without.—[Courage & Co., Brewers, London.

We find that clean-legged horses, as a rule, have the best legs for endurance.—[The Caledonian Railway Company, Glasgow.

An unsigned return from Dublin says:—"We find, as a rule, that hairy-legged horses have poor feet, the horn being brittle, and also that they are more subject to itch and grease, partly from the trouble of drying them." Many other opinions to the same effect might be quoted, but these should suffice to show that breeders may easily err in striving much after feather on the legs of their horses.

The remark is often made that unless a heavy draught horse has plenty of hair on his legs he will not "stand the stones." The statement is very generally accepted as true, but when we begin to make inquiries of horsemen it receives little confirmation. Hairy legs can only enable the horse to stand the stones better if accompanied by stronger bone, and it is not easy to see the relationship between feather and bone. Indeed the great majority of contractors, and other people concerned in this question, tell us that they would prefer clean-legged horses if they could be procured heavy enough; but the large contractors, railway companies, and brewers, &c., must have their horses of sufficient weight to draught four to six ton loads, and they cannot always get the stamp of horse required with clean legs. A great deal of the evidence to be gathered on this subject merely connects size with feather. Indeed, it is only in regard to size that hair and bone, feather and feet, seem to have any close relationship. If, then, "feather" is correlated with good, deep, open, tough feet, then by all means let us make it a point to breed for; but if it serves no useful purpose, and induces scurf and grease for the difficulty of keeping it clean, then by all means let us have clean-legged horses. If feet and feather do not go together some of our Clydesdale and Shire breeders must look well to the matter; for there is an unmistakable tendency on the part of the users of heavy draught horses to substitute lighter vehicles and lighter loads and a trotting pace for the heavier and slower traffic. There are now in most of our

large cities quite a number of smart, active, clean-legged horses of good substance which can trot away with a good load, a two-horse van; and it is not unlikely that in these fast moving times this type will prevail, and that the draught horse of the future will have to move more quickly and haul a lighter weight.

Management of Swine.

Breeding sows, during gestation, should have special care, says Mr. N. J. Shepherd, in Swine Breeder's Journal. When it can be done, they should be kept to themselves, if there are a great number kept on the farm. It is not necessary to put each sow in a pen to itself, but all in pig can be kept together for a considerable time, that is, if there are not too many. It is never good policy to allow too many sows to run together, nor hogs either. Sows with pig should not be kept too fat. When this is done, they do not take a sufficient amount of exercise to even keep healthy. When given all it will eat and drink, the ordinary hog cares but little for anything else, and in order to keep in good health some exercise is necessary. When the weather is cold or stormy, a small lot will be sufficient for all purposes. Sows kept too fat will generally bring much weaker pigs than one just thrifty. One of the worst things we can do for the brood sow is to feed exclusively on corn and keep closely confined. Corn is heating and constipating, and inclines the sow to be feverish, is certain to show upon the pigs. Breeding sows should not—when anything else can be secured—have more than one feed of corn a day, and that at night. Chopped barley or oats, or a mixture of both, makes a first-class food. I like to feed good wheat bran or shorts made into slop, especially about two weeks before farrowing, so that the bowels may be kept open. A few lumps of charcoal will aid in keeping the system healthy; or, sulphur and ashes given once a week will answer if the charcoal can not conveniently be procured. Good clean bedding should be supplied them, but not too much at a time. When the weather is cold, if given much bedding, they will bury themselves in it and are liable to become overheated, and then on coming out to eat get chilled, even in a reasonably warm pen. Bedding should be changed at least once a week, because it becomes foul, and if allowed to remain too long, the sows will become lousy. Kitchen slops are well enough as far as they go, but a good supply of clean water should be given regularly. All reasonable pains should be taken to keep up the general health, and at the same time have them in good condition. Upon the treatment given to the sows depends the quality of the pigs. No matter how careful we may be in the selection of breeding animals, if we neglect the sow during gestation, we are certain to lower the quality of the pigs, while, if we are careful in selecting the breeding stock, and couple at the proper season, and have both animals in good condition and then keep the sows thrifty and healthy, without feeding so much as to keep them fat, we have a right to expect strong, healthy pigs. Some sows require a less quantity of food to keep fat than others. When this is the case, it is not the best plan to feed together. At least two weeks before farrowing time the sow should be put in a pen by herself, so that she will become thoroughly accustomed to her home. Of course, you handle your pigs

so that they are sufficiently acquainted with you to allow you to handle them without fretting them. Hogs, as well as any other animal, like to be petted. If they once learn that you have no intention of hurting them, they are much easier handled, should it at any time become necessary, and it is often the case at farrowing time. While it is not best to bother her only when necessary, yet by being able to do so without fretting her, may often save the lives of at least part of the pigs.

COMMENCING TO FEED.

Considerable depends upon the way the pigs are growing and how much growth has already been secured, when we should commence to crowd the pigs. If they have been allowed the run of a good pasture, and have been fed a light feed of grain or some material, that combined with grass, has kept them in a really first-class condition, and we can keep them so, only a slight increase in the quality of feed need be given, depending, of course, upon the condition of the pastures. Sometimes we have considerable dry weather, so that the amount of really nutritious food is small. When this is the case we must, of course, commence to feed earlier. At other times the season is more favorable, and we do not need to commence feeding so early. In many localities the orchard will be of material aid in keeping the stock in good condition. And after we have kept them growing all spring and so far this summer, it will not pay to let them fail to gain steadily every day. After the extreme hot days are over is the best time for getting the hog to gain rapidly, and remember at the same time that a gain can be secured much easier with less feed and at less expense than with older hogs, even if they are considerably larger; that is, a faster and more economical gain can be made with pigs that were farrowed in the spring and have been fed so that they have gained steadily all summer, than if they had been wintered over, making a slower growth and being considerably larger, and yet are not nor never have been in a really good condition. There is no economy in long feeds. This fact ought never to be overlooked by the average farmer. The older the stock become and the larger they grow, the more it costs per pound to secure a gain. We have passed the time when we can afford to accept the small profits secured by letting stock of any kind take care of themselves until they are old enough to fatten, and then penning them up and feeding corn until they are fattened sufficiently to market. If you have kept them gaining all summer it will usually require but a very slight increase in the amount of feed given night and morning to commence fattening them. As the weather becomes cooler the quantity should be gradually increased, so that they will fatten up faster. So long as there is plenty of nutritious grass for them in the pastures, there is no particular gain to be had by penning them up. They will keep healthier and more vigorous if allowed to run out than if penned up, at least until we are nearer ready to market. They need not be fed entirely upon corn; in fact, a variety of feed will secure a more rapid gain at a much less expense. Bran, ship stuff, chopped oats, pumpkins, artichokes, and other materials can be furnished at a less price than corn. I would prefer to commence feeding reasonably early. A good gain can be secured at a less cost than if feeding is delayed. After real cold weather sets in it is somewhat

expensive to be able to secure anything like a good gain, unless we are extra well arranged so that the hogs will not feel the cold. Generally as good a time as we can select to commence feeding to fatten is when the corn is sufficiently ripe to be in good condition to feed without waste. If they have been fed upon some other materials in combination, gradually increase the amount as circumstances seem to demand, in order to keep them gaining.

Use Care in Drying off Cows.

There are many who manage their cows in such a way that the most of them go dry in the fall, instead of giving a good supply through the winter, when the returns would be the most profitable. As so many are careless in the way in which they dry off their cows, a word of caution at this time is opportune. It is believed that there are more teats and udders spoiled by bad management in drying cows off their milk than from all other causes put together. When one has got through with milking a cow for the season, he is very apt, unless he is a thoughtful man, to let her run with little care or attention.

He is inclined to anticipate that the pittance of milk which will come into her udder will be too small to be of any consequence, and so she is left to run without attention till it is discovered, perhaps when too late, that her bag is swollen and feverish, and upon examination is found to be filled with a yellowish watery liquid, a serum, and clotted milk, that stops the milk ducts, and has hence become difficult or impossible to remove, and the consequence is that one or more of the teats is spoiled beyond redemption.

In drying cows in the fall or early winter, when the milk is rich and thick, and the cows, perhaps, a little feverish from change of feed and exposure to changes of the weather, there is more need of watchfulness than at some other seasons of the year when milk is poorer and thinner, and more easily absorbed away. On no account should milk be left so long in the bag as to become thick. The best way to dry off cows is to milk daily or at regular periods, leaving back a part of the milk at each milking.

This is the most effective way to diminish secretion. By this means the oldest milk in the bag will be drawn out and the newer secretion left back as a check to the formation of more. This practice will dry a cow of her milk at any time, though the flow may be very large. Should the bag show any indications of fever by its increased warmth, the exhaustion of milk should be nearer complete, or perhaps all of it had better be milked out for a while, till the fever is abated and the bag becomes soft and limp.

Cows which are not in good health are more liable to give trouble in drying them than when they are well and vigorous. The weakly ones should therefore be carefully looked after. Some dairymen are in the habit of reducing the feed when they wish to stop the milk. If the animals were in high flesh and highly fed, this might do, but it is seldom advisable. Cows that have been milked for a whole season usually become thin, and need an increase instead of a decrease of feed in the fall. It is much better to let the milking run a little longer and feed liberally than to pinch a cow when she is already thin, for the sake of drying her off at any particular time.—[National Live-Stock Journal, Chicago.]

Make the best use of your straw during the coming winter, if your feed is scarce.

Garden and Orchard.

European Forestry.

Now that all matters pertaining to agriculture are reduced, or are being reduced, to a science, and as the older countries are the more advanced in this respect, we, on this continent, must for many years to come adopt European methods, or the methods practised by countries most advanced in the agricultural sciences. Reports on Forestry in Europe, compiled by the United States Government from their consuls, have just been issued, and they contain a mass of useful information on the subject, and we make gleanings therefrom of such facts and figures as we deem to be of importance to our readers, commencing with the most advanced country—Germany.

The expanse of forest land in Germany is computed to be about 34,500,000 acres, equal to 25.7 of the total area of the Empire. Of the acreage, 48.7 percent is devoted to agriculture, horticulture and vineyards; 10.9 percent to meadows, and 9.4 percent to pastures and sterile lands. The state owns 32.7 percent of the forest land; communities own 15.2 percent, and private parties 48 percent.

In the Kingdom of Prussia, the management of the forests is typical for the other German states. The Prussian Government not only exercises control over the forests owned by the state, but also over other forests, preventing them from devastation. About ten millions acres of the Prussian forests occupy level ground, half this area is planted on hilly ground; and nearly 5,000,000 acres are situated on the mountains.

The culture and species vary according to the climate and soil. The species principally cultivated are: First (*Abies excelsa*; *Abies pectinata*); Pines (*Pinus sylvestris*, *strobis*, *austriaca*, and *montana*); Oaks (*Quercus pedunculata* and *sessiliflora*); Beech (*Fagus sylvatica*); Birches (*Carpinus betulus*; *Betula verrucosa*); Alders (*Alnus incana* and *glutinosa*); Larch (*Laris Europea*).

Poor people living in the vicinity of the forests are permitted to gather dead branches of wood, either without charge or by paying a small sum, and the provincial authorities may sell limited quantities of inferior wood in winter to the poorer classes at about twenty-five percent below market prices. Cattle, and sometimes sheep, are permitted to graze, a small charge being made: but the forestal authorities do not grant such rights, when the growth of the trees are thereby endangered. Hogs are sometimes allowed to enter the forests, as they destroy insects. Tracts in the forests which can be used as meadows are rented under proper restrictions. In exceptional cases, leaves are permitted to be gathered. With a written permit, the gathering of berries, herbs, and mushrooms is practised.

The average salary paid to a chief master forester is about \$1,200 a year. The chief forester receives about \$750 per annum as salary, and fuel for his own use. He is appointed by the Minister of Agriculture, Forests, etc., and all applicants for such positions must pass a rigid examination in forestry matters. The appointment is permanent, and the appointee is entitled to a pension. The subordinates are called foresters, forest guards

and assistant foresters. All are compelled to wear uniforms.

The net revenue from the forests in Prussia for the fiscal year, according to the last budget, after deducting the extraordinary expenditures, is nearly \$6,000,000. The revenues are mainly derived from the following sources: Sales of wood, secondary products, game, peat, floated timber, meadow fees, stores of firewood, saw-mills, larger nurseries, etc., the total revenue being about \$14,500,000, and the expenditures about \$8,600,000.

When planting, deciduous and coniferous trees are mixed in order to prevent damage by caterpillars, and it is said that this practice is also conducive to the growth of the evergreens. Amongst these deciduous woods, the oak is specially used for planting amongst the conifers.

Candidates for positions in the forestry service have to undergo strict examinations in mathematics and the sciences, as well as in forest culture, surveying, &c., and must also have performed military service. There are two forest academies in Prussia, one at Eberswalde, and the other at Mueden. The lectures and practical demonstrations are accompanied by excursions into the forests three times weekly.

On the unprotected coasts of the Baltic, where the forests were extirpated in the 17th and 18th centuries, movable sands now cover vast fertile tracts, and villages which were once centres of prosperous agricultural communities, have disappeared, or fallen into ruins. In the central and eastern provinces, the light soil has been, to a greater or smaller extent, blown away, and swamps have appeared where forests once covered the sand and absorbed the stagnating moisture. In Northern Hanover there are now deserts and waste lands where formerly forests flourished, and the location is exposed to violent hurricanes. In the western mountainous provinces the once fertile soil, built by thousands of years of forest growth, has disappeared from the mountain tops, and the scorching sun, the winds and the storms have made the ground arid and unproductive. Even the valleys below, into which the rich mountain soils have been washed by the rains and melted snows, have not been improved, being filled with mud and rocky fragments. Not only have the mountain ranges become barren, but the fertile meadows in the valleys also disappeared.

The demand for lumber in Germany is greater than can be supplied, if the present forest areas are to be maintained. The quantity imported is five times greater than that exported, and the high duties on lumber is a great obstruction to increased importations.

The forest laws are very strict, and there are heavy penalties for setting woods on fire or neglecting to destroy the caterpillars. There is a clause forbidding the diminution of forestal land by digging or plowing.

In the Annaberg district, where the forest area reaches about 180,000 acres, the net profits to the state from the forests amount to nearly \$1,000,000 annually. Some figures are given as to the age of trees. Some pines in Bohemia and in Norway and Sweden have lived between 500 and 600 years. In the Bohemian forests,

the silver fir has stood and thrived for 429 years. In Bavaria the larch has lived 274 years. The oak has reached the age of 410 years. At Aschoffenburg the red beech has lived 245 years, and at Weisswasser, 226 years; the ash, 170 years; birch, 160 to 200 years; aspen, 219 years; mountain maple, 224 years; elm, 130 years; red alder, 145 years. In Silesia, where the forest area is about 9,000,000 acres, the annual revenue to the state is \$1,220,000 annually. In Saxony the forest area is about 1,025,000 acres; the revenue to the state reaches \$1,820,000 annually. The receipts from fruit trees planted along the road sides amounted last year to \$25,000. The trees so planted are the cherry, the plum, the apple, and the pear. There is an academy at Thrandt where the science of forestry is taught.

In the Kingdom of Prussia, about 20,000,000 acres are under forest, or 23½ percent of the total area of the Prussian monarchy. Of this, 29.4 percent belongs to the state, and 55.1 belongs to private individuals. The state grants bounties to communes which undertake to cultivate waste mountain land at their own expense, the maximum bounty being \$8.60 per hectare (1 hectare = 2.471 acres.)

Dr. Otto von Hagen, an eminent authority on forestry science, makes the following allusions to the subject:—

"That forest is a trust handed down to us from past ages, whose value consists not alone in the income derived from wood, but also in the importance which it exerts, through its influence on the climate and rain fall, on land culture. Its importance is not merely a question of the present day or of the present ownership, but is also a matter which concerns the future welfare of the people. This is a truism beyond contradiction, but nevertheless it is daily disregarded by those who are indolent and selfish.

"When such evils reach the stage of common danger, and this is in a great measure already the case, it then becomes a duty to interfere by legislation. Neither the decrease of the wood production nor the difficulty at times to meet the demand for wood, nor the rise in the price, can confer upon the state the right to interfere with the freedom of private ownership or of private administration of forests. But this right and duty would devolve upon the state in case that any injury is done to the welfare and existence of the inhabitants of a certain locality resulting from the destruction of the forest. How entire districts which flourished in the past have been reduced to poverty and want through forest destruction has been seen in Prussia, where large tracts of land have suffered under such calamities.

"By stripping the beaches of their forests in the seventeenth and eighteenth centuries, the sea-coasts have become exposed to all winds and storms. Fields, once fertile, have been transformed into waste sand dunes, and whole villages, where agricultural people formerly prospered, have ceased to exist.

"In the middle and eastern Provinces, light and undulating soil has been replaced by small or large sand hills, and places where forests once stood and served to carry off stagnant moisture have been turned into marshes. In the western mountainous provinces, the fertile forest soil, the waste-product of thousands of years of the trees, has disappeared. It has been dried up by

the sun and wind, and washed into the valleys by rain and snow-water, and left the mountains bare and unfertile, whose soil is scarcely capable of supporting any vegetation save heath and broom-grass.

"The rich meadows in the valleys have vanished, they have been again and again, after every rain storm, washed and torn by the water rushing from the mountain tops. The high moors which have been formed by the destruction of the forest, emit at all times of the year vapors and fogs which kill vegetation far into the land. Thus the soil becomes directly impoverished, and the climatic conditions change and become worse. Instances of the injurious effect upon the culture of the soil caused by the destruction of the forests can be seen to a smaller or larger extent throughout Prussia."

Poultry.

Standard and Pit Games.

The question has been many times asked, what is the difference between a standard and a pit game? It is simply this: The standard birds are bred to a standard color, form, size, etc., etc., while the pit bird is bred for fighting qualities only, and a breeder of pit games would give more for staying qualities than anything else, while to the breeder of standard games, they are worth nothing. The American standard of excellence, however, is based on the various good points of a fighter, as for instance hardness of feathers, which means feathers that would be more impervious to the spur of an antagonist. Also the form of leg, that would enable him to move dexterously; foot that will enable him to stand firmly on the ground, and a long, strong beak capable of doing destructive work to his antagonist.

The Directors of the Ontario Poultry Association have, we think, acted unwisely in taking off the third prize on all varieties, and entering on the prize list several new breeds not recognized by the standard, and yet the rules will doubtless say, "all birds to be judged by the American standard of excellence."

Names on Coops.

Mr. D. Garvey, of Ingersoll, in a letter to the ADVOCATE, says: "Why not adopt a system that would possess all the advantages of both, without any of their disadvantages." He then goes on to suggest that the names be placed on the coops after the judging is done. This, it may be remarked, is precisely the system that now exists, except that it is not now compulsory, or, in other words, the exhibitor is at liberty to place his name there if he sees fit. But with regard to the judging it has the same objections urged against in our article which led to Mr. G's remarks, viz., if the judge wishes to favor certain exhibitors he can do so, and say at the same time he did not know whose birds he was judging; while it would be impossible for him to hide behind this flimsy excuse if the names were on the coops. Besides this, the placing of the names on the coops (as suggested by Mr. Garvey) after the judging, could not well be made a part of the duties of the officials without the employment of numerous extra officials. We are still of the opinion that each entry ticket should bear the name of the exhibitor.

Mr. Lewis, Owen Sound, Ont., has recently received from England a pen of black Minorcas, consisting of ten hens and one cockerel.

The Poultry Outlook.

If the unusually large exhibit at the fairs this fall is any criterion to go by, the poultry interests are safe and the egg business in the ascendancy. The unusually good prices paid for eggs this season is also a matter of considerable worth to poultrymen and farmers. We have not met with half a dozen farmers this season who will not admit that their poultry is the best paying stock on their farm. Now, if this be the case with fowls of inferior breeding, what can not be accomplished with even a careful selection of the most prolific hens from the flock as breeders, much more if a good selection of breeds is made?

It may also be argued, with considerable force, that a flock of say forty hens about a farm will pay for their keeping with their droppings and the insects they consume, so that the eggs would be clear profit. Of course, this depends largely on the breed kept, as the P. Rocks, Games or Hamburgs will destroy many more worms and insects than the Brahma or Cochin, and some soils are more productive of worms and insects than others, or, more properly speaking, many more of them live in some soils than others.

Poultry Literature.

While practice and experience are almost a positive requirement in poultry breeding, valuable information can be derived from poultry books and papers, and as in agriculture and all other pursuits, the more we know of any subject, the more we can learn by reading, and the more we read the more we can learn from our own experience. The best book we know on poultry subjects is Wright's Practical Poultry Keeper, which not only gives information as to mating, breeding and feeding, but has colored plates of all the leading varieties, thus giving the amateur a knowledge of the accurate markings not to be gained in any other way in the same time or indeed many times the time. The price of the book is \$2.00, and can be obtained from this office. It is also given as a premium for six subscribers to this paper, and any one interested in poultry can not really afford to do without it. There are also cheaper works, such as Johnston's Poultry for Pleasure and Poultry for Profit—also twelve articles on poultry raising by "Fanny Field," at fifty cents each or premium for two subscribers. Now any boy or girl can get these works by a little effort and good results will be seen to follow. It was reading the first mentioned work that made the writer a poultry man.

ORCHARDS IN VALLEYS AND ON HILLS.—A western orchardist gave, at a horticultural meeting, the reason that in some localities orchards succeeded so much better than on hills. He described a fifty-acre apple orchard planted nearly forty years before, partly on the flat top of a hill, partly on a sloping side, and the rest on level land at the foot. The rains and melting snows washed the rich layers of the upper soil on the ridge down to the level at the base, and while one portion was gradually made poorer, the level land became richer by the washings. The consequence was that in twenty or twenty-five years the trees on the hillside gradually died, and those on the ridge soon followed. Those on the lower ground stood for years after all the others were gone.—Country Gentleman.

During the coming winter, food for stock being scarce owing to the recent drought, farmers should learn how to vary their system of feeding as much as possible.

The Apiary.

Fall Notes.

Bees should now be packed away for the winter. Too much care cannot be given them to keep them dry and sheltered from changes in temperature. If you winter them in a cellar, it should be perfectly dry and dark, and with an average temperature of 45° F. The glass should never register lower than 40° F. nor higher than 50° F. Have the hives dry when put into the cellar or other repository. Hives should be opened as little as possible during this month, and then only on warm days when bees would not get chilled flying. In handling bees, never blow your warm breath on them, as it angers them.

If you have honey to sell, get it ready for market now; put it in neat packages with your label on each package, for if the quality is good first class customers will know where to get more of it. As there is more time to read now, during these long nights, obtain some standard work on bee-culture and read up; also read the apiary department of this journal, which will contain good, practical information in bee-culture.

Paraphernalia of the Bee.

The feet of the common working bee exhibit at one and the same time a basket, a brush and a pair of pincers. One of these articles, indeed, is a brush of extreme fineness, the hairs of which, arranged in symmetrical rows, are only to be seen with the microscope. With this brush of fairy delicacy, the bee continually brushes its velvet robe, to remove the pollen dust with which it becomes loaded while rifling the flowers and sucking up their nectar. Another article, which is hollowed like a spoon, receives all the gleanings which the insect carries to the hive. It is a panier for provisions. Finally by opening them one upon another, by means of a hinge, those two pieces become a pair of pincers, which render important service in construction of the combs, and it is with them that the bee lays hold of semi-circles of wax below its abdomen, and carries them to its mouth.

Origin of Noise During Swarming.

Much has been said and written about the object of making a great noise, by the ringing of bells, beating of tin pans, etc., when a swarm issues from the hive, and is in the air.

"Habit is second nature," says the proverb, and the habit in question holds sway over the rural bee-keeping world, for long centuries after the cause for and establishment of that habit has been forgotten. By an old law, of the time of Alfred the Great, a bee-keeper is permitted to follow and to secure his swarm if on another's property; but he must keep the swarm in sight, and that his neighbors may know he is following it he must ring a bell as he pursues it.

The bell-ringing is now oftener replaced by yelling and the beating of a kettle or rattling of fire-irons, and the bee-keeper is not so much intent on calling his neighbors' attention to the fact that he is following his bees, as on charming the swarm and causing it to alight, seduced or terror stricken by his rough music.

The law of Alfred evidently explains the origin of the custom, although, as we said above, the habit prevailed centuries before that law was made. Virgil refers to the tin-can music in his fourth Georgic. Plato, Pliny, Varro, and Columella

all speak of it and attribute the settling of the bees either to fear or joy; while Aristotle is not certain what the effect is which the beating of brazen vessels has on the bees.

A violent concussion of the air oftens affects a swarm; hence some fire a gun near the hovering swarm to cause it to settle; others throw gravel or dirt among them. Many bee-keepers use a fountain pump to bring the bees down; this disorganizes them, causes general confusion, and they usually settle at once. The wetting of their wings also makes them in a hurry to obtain shelter, the same as they would in a shower of rain.

These are modern practical ways of doing what has been, by the superstitious in ages past, sought to be accomplished by charms, such as bell-ringing, pan-beating, and such like noisy demonstrations.—American Bee Journal.

HONEY FOR SORE EYES.—Mr. S. C. Perry, Portland, Mich., says: "A neighbor of mine had inflammation in his eyes. He tried many things and many physicians; was nothing better, but rather grew worse, until he was almost blind. His family was sick, and I presented him with a pail of honey. What they did not eat he put in his eyes, a drop or two in each eye two or three times a day. In three months time he was able to read coarse print, and now after four months' use, his eyes are almost as good as ever. I have also found honey good for common cold-sore eyes."

Veterinary.

Tympanitis, Bloating or Hoven.

This disease is one of common occurrence in cattle, sheep and goats. It is a distended condition of the stomach, caused by the development of gas therein.

Its causes are: A sudden change of food; feeding on green food (especially clover) wet with heavy dew or rain or covered with hoar frost; eating acid plants, frosted or diseased potatoes or turnips; unripe or partially cured grain; heated grass or clover. Overloading the stomach with any kind of food, but especially with those that they are not accustomed to; fermented food; dirty, soured mangers; foreign bodies in the stomach, such as hairs, nails, stones, &c.; a diseased condition of the stomach or gullet; fever and choking are also causes of this disease.

One of the most prominent symptoms is a tense, elastic, drum-like swelling on the left side of the abdomen (belly), especially prominent between the hook-bone and last rib, where it frequently rises above the hook-bone and spine, and immediately springs back when pressed in. There is also difficulty in breathing, becoming more so as the disease advances, moaning, belching, driveling of saliva from the mouth, and frequent passage of excrements.

If the attack is very slight it may pass off without treatment. But if a severe attack is not attended to the animal will die, either from suffocation or from rupture of the stomach or diaphragm. If treatment is very urgent, puncture the stomach and allow the gas to escape. This is most easily and safely done with a trocar and cannula, at least six inches long, by pushing this instrument to its full length, in an inward and downward direction, into the left side of the body, at a point equally distant from the hook-bone, the lateral processes of the back-bone and the last rib. Then withdraw the

trocar, leaving the cannula, through which the gases will escape. If this instrument is not to hand, a pocket-knife and large goose-quill will answer the purpose. Puncture the stomach with the knife in the same way as described for the trocar, then insert the goose-quill, after which withdraw the knife. If securely tied, either cannula or goose-quill may be left in the patient for hours, and even days if necessary. Take, however, good care that the goose-quill, if such is used, does not pass into the stomach, for this would aggravate the case. In milder cases, and after the above operation has been performed in the severe ones, give two ounces of turpentine, mixed with one quart of raw linseed oil; or mix with the linseed oil one of the following: $\frac{1}{2}$ oz. of liquid ammonia, 2 ozs. aromatic ammonia, or 4 drams of carbonate of ammonia. The linseed oil alone, and even melted lard, have given beneficial results. The above doses are for the ox, of which one-quarter will be the dose for sheep or goats. Soap suds and lime water are also sometimes beneficial. Gaggling, as described for choking, is also claimed to give good results. If the disease is caused from foreign bodies in the stomach, it will be chronic, that is, the diseases although existing, will not always be so acute as the form described, but may become such from the most trivial causes. In such cases the offending foreign body must be removed by performing rumenotomy. This consists in opening the stomach and extracting the offending matter with the hand. This operation must, however, be performed by a veterinary surgeon, as much depends upon the way in which the cut is stitched up again.

Affections of the Udder.

GARGET.

In the majority of cases this disease is caused by exposing a fresh milking cow to drafts, colds, or cold, wet stable floors. Causes of less frequency are kicks and blows on the udder. The affected part is too swollen, hard, painful, hot, and occasionally red. In severer cases, the secretion of the milk is not stopped in the affected parts, and impaired in the sound ones. The teats on the affected side contain a yellow, watery liquid, with portions of coagulated casein suspended in it. The appetite is depressed; the patient is feverish, sometimes shivering, and lame on one side. As soon as the disease is noticed, foment the affected part with a solution of 2 drachms of potash in a quart of water. Heat the lotion up to 100° F., and apply it continuously for 24 hours. The following day, or two days after, apply the same lotion several times a day for a few hours at a time. During the time in which the udder is not fomented, protect it from cold by covering it with a thick coat of warm paste, which is again covered by a coat of cotton batting. Blanket the patient, and carefully guard her against exposure to cold or draft. Milk her every hour for the first two days, after which a less frequent but thorough milking will be sufficient. Keep the patient well supplied with dry litter, and if feverish and costive administer three times daily, for 1 or 2 days, 5 to 6 ounces of glauber salts, and 1 ounce of saltpetre, dissolved in lukewarm water. If hard lumps remain after the inflammation has subsided, rub them thoroughly with a mixture of equal parts of soft soap and rape-seed oil, not rancid.

BRUISES AND WOUNDS ON THE UDDER.

A simple bruise may cause an extensive, extremely sensitive, hot and red swelling, which

suppurates easily. The puss burrows either towards the out or the inside, in the former case finding its exit through the skin, and in the latter into one of the lacteal channels, from which it is extracted, together with the milk, during milking. If the puss passes out through the skin, a milk-fistula is very liable to remain after the subsidence of the inflammation. Cuts, especially if they are deeper than the thickness of the skin, penetrating the deeper glandular structure, cause extensive inflammation and frequently suppuration. They are, like sores penetrating the walls of the teats, fruitful causes of milk-fistulae. If the inflammation arises from bruises, foment the part for a day, or several, if necessary, with a luke-warm solution of potash—2 drachms to 1 quart of water—and rub it with rape-seed oil in the evening, before leaving the patient for the night. Allow all puss that may form to find its own exit. Wounds should be properly stitched as soon as possible, and bathed with cold water. If the cooling seems to cause the patient extreme pain, apply, instead of the cold water, a decoction made from henbane and mallow leaves. If suppuration occurs, cleanse the wound twice daily with luke-warm water. Milk-fistulae may be removed by the use of some corrosive, like lunar caustic, or corrosive sublimate; these cause a healthy growth of the tissue and an eventual closing of the fistula. Fistulae in the udder are best treated when the patient is dry, while those in the teats may be treated at any time; but if they are to be removed during the milking period, it will be necessary to draw off the milk with a syphon, and cover the teat with a thin rubber tube, having a diameter nearly as large as that of the teat.

WARTS ON THE UDDER.

These growths are principally found on the teats, and should be removed only if they cause pain. This may be best accomplished by cutting them closely with a sharp knife, then cauterizing (burning) the surface to prevent bleeding. After the scurf falls off, treat the wound with nitric acid.

CLOSING OF THE TEATS.

The openings in the teats may be closed, due to hereditary defects, pocks, or sores caused by carelessness in introducing sharp or pointed objects into the orifice of the teat. The orifice is generally closed by a thin skin, rarely by the cohesion of the walls of the canal for a greater or less distance. If the closing is caused by a thin membrane covering the orifice, press the milk down upon it, as when milking, then incise the membrane with a pointed knife. But if the walls have grown together, separate them by carefully inserting a trocar and cannula, until after the removal of the trocar, the milk flows out through the retained cannula. In order to prevent the re-closing of the canal, insert a thin, round gutta-percha rod provided with a plate at the lower end. This is retained for several days, and is only removed during milking.

MILK DROPPING FROM THE TEATS.

This malady is either inherited or afterwards acquired by the subject. In the former case, it is due to an insufficient development of the muscular fibres surrounding the orifice of the teat. In the latter case, it is either due to general weakness caused by disease, or by warts at the opening of the canal. A cure in the latter case is easily effected by removal of the warts. When caused by constitutional weakness, a cure is effected by toning up the system. When inherited, a remedy is not easily effected, but the milk is prevented from escape by drawing a rubber thimble over the teat.

Commercial.

(FARMER'S ADVOCATE OFFICE, London, Ont., Nov., 1887.)

The month of October, now gone, has been one of moderately fine weather, with some sharp frosts, but very little rain in most sections. Wells in many places are still dry; and were it not that stock can now do with very much less water than in the summer, farmers would still have to draw water for their stock. A large number of wells in some towns are still dry, and it will take several days of steady rain to fill the wells, swamps and streams. Fall wheat has as yet none too much top, and many fields are thin and spindly from the dry weather.

WHEAT.

The trading in wheat is very quiet and little or no disposition to speculate, on the part of either the regular traders or the outside public. Commission houses in Chicago say that trade has not been so dull in many years. The cause of this is not far to seek. Traders on that market have become disgusted with the state of affairs on that Board for this reason: The markets are not allowed to follow their natural course, but are manipulated by scalpers, big and little. The market has been one of disappointment to very many; for while everything pointed towards a higher line of prices, the reverse has been the case, and even now at this date there is not much prospect of any material advance. However, there is one consolation for farmers, and that is, they need not have much fear or anxiety about any further decline.

The quantities of wheat, and flour reckoned as wheat—at the rate of 45 lbs. of flour to 60 lbs. of wheat—imported into the United Kingdom during the cereal year 1886-7, compared with two previous years, showing the sources of supply, are submitted by the London Mark Lane Express as follows, represented in quarters of 480 pounds:

	1886-7.	1885-6.	1884-5.
U. S. Atlantic ports..	5,116,560	2,505,637	3,076,163
Pacific Ports.....	2,283,022	2,375,688	3,050,661
Total United States.	7,404,572	4,881,325	6,126,824
India.....	2,495,939	2,847,609	2,585,847
British N. America..	962,818	1,628,920	2,328,538
Russia.....	712,578	56,909	1,309,502
Chil.....	501,352	547,708	433,368
Australasia.....	329,106	429,087	396,075
Other Countries.....	242,094	421,497	290,389
Germany.....	236,412	333,875	272,985
Roumania.....	64,679	121,826	93,214
Egypt.....	30,998	120,924	39,186
Turkey.....	4,405	77,885	9,364
France.....	184	792	1,837
Total wheat.....	12,885,085	11,976,062	13,877,488

FLOUR, AS WHEAT.

United States.....	4,349,806	3,217,731	3,884,441
Austrian Territories..	414,962	466,711	2,051,103
British N. America...	310,501	340,944	455,336
Germany.....	96,538	149,808	145,861
Other Countries.....	41,078	99,489	133,369
France.....	23,240	49,817	52,954
Total flour.....	5,236,145	4,314,028	6,702,814
Total.....	18,121,210	16,290,090	20,580,307

The Mark Lane Express comments as follows; "With regard to the figures, as they stand, we wish to direct attention to the position occupied by the United States as the chief source of supply. California in 1885-6 sent us more wheat than all the exports—in wheat—from the Atlantic seaboard, yet the exporting power of the vast continent east of the Rocky Mountains may at any time develop itself to an extent of which the Pacific slope can not possibly be capable, although the resources of California and Oregon alone are by many considered to be equal to the supply of nearly one-half of our needs. In the all-im-

portant item of flour it will be seen that America is sending us more and more, and it is believed by many in the trade that the grades we receive are much of the nature of a by-product which the great milling establishments of the Northwest can sell us, at a profit, at a lower price than they have as yet received for it, their main profit being made by the sales of the higher grades which are consumed there. If this is so—and we have reason to think that it is—the outlook for the British farmer is sad indeed. With regard to India, it will be seen that the quantities we have received during the three years cannot have the depressing influence assigned to them, whether the exchange value of the rupee has acted as a 'bounty' to Indian growers or not. Russia is now selling, freely, a large crop of excellent wheat at prices which are considerably below the parity of other wheats, those of our own native crop excepted, and therefore the rupee question may be put aside for the present, at least, although India may eventually be able to send us all the wheat we need, so far as quantity is concerned."

LIVE STOCK—THE WORST CONDITION OF TRADE EVER KNOWN—MARKETS UTTERLY DEMORALIZED—BEST CANADIAN CATTLE ONE CENT PER POUND LOWER—MARKETS COMPLETELY GLUTTED—SHEEP DEPRESSED AND LOWER.

Our cables to-day were most discouraging, and reported the British cattle trade in an utterly demoralized condition, in fact the state of trade at present is the worst ever known. All the markets have been completely glutted with stock and the extra large supplies offered coming on an already demoralized market, have accelerated the decline until phenomenally low prices were touched to-day, when the best Canadian steers realized only nine cents—a price that is ruinously low and entirely without parallel. The lower grades were in proportion, indeed inferior stock has to be literally given away. The decline on best grades since Monday last is one cent per pound. Sheep also have weakened and our cables to-day quote 11c. for best sheep. The meat markets are calmed easy. Refrigerator beef in Liverpool is at 5½d for hindquarters and 3½d for forequarters per lb. In London hindquarters are quoted at 3s 2d and forequarters at 2s per 8 lbs. by the carcass. The following were the quotations in Liverpool for three years:

	1884.	1885.	1886.	1887.
	per lb.,	per lb.,	per lb.,	per lb.,
	cents.	cents.	cents.	cents.
Oct. 24.....	13½	10	10	9
Oct. 17.....	13½	11	10½	9
Oct. 10.....	14½	11	11	10
Oct. 3.....	15	11½	11	10½
Sept. 26.....	15	12½	11	11
Sept. 19.....	15	12	11½	11½
Sept. 12.....	15	13	11½	11
Sept. 5.....	15½	14	11½	11
Aug. 29.....	15½	14	11½	11
Aug. 22.....	15½	13½	12½	11
Aug. 15.....	15½	13	12	11
Aug. 8.....	15½	13½	12	11½
Aug. 1.....	15½	13	12½	11½
July 25.....	15½	12½	12	11½
July 18.....	15½	14	12½	11½
July 11.....	15½	14	12	10½
July 4.....	15½	14½	13	10½
May 2.....	15½	13	13	11

—[Montreal Gazette.

APPLES.

Canadian apples are in good demand this year, and farmers who did not sell too early will realize good paying prices. English markets are firm and the demand is good. We shall not be surprised to see a first-rate demand from England this fall for our best winter apples. Late cables from London quote Greening at 13/6 @ 15/; Baldwins 14/ @ 16/; King 16/ @ 20/; best mixed

16/ @ 24/. Shipments have been so large to the Western States and Manitoba, that England will not get her usual quota of apples from Canada and the New England States.

THE EXPORT APPLE TRADE.

Apples have been in good demand, and considerable quantities have recently changed hands in Ontario for export, where Chicago buyers have been competing keenly with Montreal dealers, the latter having lost quite a number of lots through the higher bids of Americans. One lot of 600 bbls. was purchased at Paris, Ont., by a Chicago house at \$1.75 per bbl. on track, to the great disappointment of a Montreal buyer, who after waiting a few days wired the acceptance of an offer, but only to find that the lot was on the road to Chicago. Several other lots in the same district were also secured for shipment to the Western States at \$1.75 to \$1.85 on cars. Up to last week the shipments of choice winter fruit from this port to Great Britain seems to have given good satisfaction, most of which was forwarded on consignment. In this market sales have been made at \$2 to \$2.25 and up to \$2.35 to \$2.50 for choice selections. Of course it is risky to predict far ahead, but at the moment the outlook of the apple trade is encouraging, extensive shipments being made from Canada to the United States and England, with fairly remunerative results, and if holders do not demand too high figures, it is probable that the product of Canadian orchards will meet with a good and profitable outlet. Kings, Baldwins, Spitz and Russets are favorite varieties in Liverpool, and when landed there in good condition invariably bring satisfactory returns. As soon as navigation closes at this port the Maine Baldwins will commence to move, the great bulk of which is handled by Montreal firms, who buy a'ong the line of the Grand Trunk, and ship from Port'and. The movement of the Nova Scotian apple crop also commences about the same time, and lasts nearly all winter, the London market taking most of the Halifax and Annapo is shipments.—[Montreal Trade Bulletin.]

BUTTER.

The Montreal Gazette reports the butter market as follows: Creamery, which some time ago was he'd firmly at 25c, has been offered at 23c, but buyers refuse to pay that figure for the quality, and nothing short of really choice could command over 22c. @ 22½c. Dairy goods were quiet, with a fair jobbing movement. Exports for the week were 3,309 pkgs.; total to date, 57,875 pkgs.

Creamery	21	@23
Townships	17½	@21
Morrisburg	17	@20½
Brookville	16½	@20
Western	15	@18

CHEESE.

The cheese market is jogging along in the same rut, and not much prospect of any improvement, at least not till there is some concession on the part of either the sellers or buyers; which party will do the conceding is hard to say. At the moment it looks as though the factory men will have to relinquish the hope of making 12 @ 12½, more especially those who refused these figures. If they are not sorry for being so foolish, we are much mistaken, and yet they should have known better than to refuse such prices. Any factory man or salesman who refuses 12 @ 12½c. for his August cheese deserves to have to take 9 or 10c. Any salesman who will think for one moment, should know that these figures are a long way

above the average price made for August cheese, and when there is one season that he makes these prices, there are four or five that he takes a good deal less money. A large amount of Aug. cheese is still unsold and very little of the Sept. and Oct. have as yet changed hands. The great mistake made by the trade was in forcing the prices of July and August cheese so high. This has checked the consumption, so much so that it has fallen off nearly one-half compared with what it would have been had prices been about the same as last year.

Exports from Montreal to date were 953,448 boxes, against 803,909 in 1886, 948,621 in 1885, and 1,012,135 in 1884. During the last three weeks of the season we shipped 88,000 boxes in 1886, 127,900 in 1885, and '96,300 in 1884.

Farm Produce.

PRICES AT FARMERS' WAGONS.

Toronto, Nov. 2, 1887.	
Wheat, fall, per bushel	\$0 78 0 80
Wheat, red winter, per bushel	0 78 0 79
Wheat, spring, do.	0 78 0 79
Wheat, roose, do.	0 68 0 69
Barley, do.	0 60 0 78½
Oats, do.	0 38 0 39
Peas, do.	0 60 0 62
Dressed hogs, per 100 lbs.	5 75 6 00
Chickens, per pair	0 40 0 55
Butter, pound rolls	0 22 0 5
Eggs, fresh, per dozen	0 20 0 21
Potatoes, per bag	0 90 1 00
Apples, per barrel	1 25 1 75
Onions, per doz.	0 15 0 20
Do. per bag	0 00 2 00
Carrots, per doz.	0 00 0 20
Turnips, white, per bag	0 40 0 50
Rhubarb	0 00 0 30
Cabbage, per doz	0 50 1 00
Celery	0 50 1 00
Beets, per doz	0 00 1 00
Radish, per doz	0 00 0 20
Cauliflowers, good	1 00 1 50
Peas, per bag	0 00 1 25
Beans, per bush	0 00 1 50
Tomatoes, per bush	0 75 1 00
Hay, per ton	12 00 17 00
Straw	8 00 15 00

THE HORSE MARKET.

The Mail makes the following reference to the Toronto horse market: Business is more lively this week. There is a good demand for work horses of all classes; there are a few buyers on the books of Messrs. Grand for useful horses for the lumber woods; good fat horses a little aged answer the purpose of practically sound ones; they must weigh from 1,300 to 1,500 lbs. at from \$80 to \$150 each. There is also a demand for general purpose horses (from 1,050 to 1,200 lbs.) at prices ranging from \$75 to \$120 each. Mr. W. D. Grand sold by auction at the Repository on Tuesday, about thirty horses of all classes, including some drivers, weighing in the neighborhood of 1,000 lbs., which brought an average of \$110 each, while the remainder brought fair prices for this time of the year.

LIVE STOCK MARKETS.

Buffalo, Oct. 31, 1887.

CATTLE.—Receipts, 11,373 against 13,101 the previous week. The market opened up on Monday with 300 car loads on sale. The demand was slow and prices declined 10@25 cents from those of the previous Monday. Included in the offerings were 11 loads of extra Ohio steers, averaging 1,605 lbs., which were bought for export at \$5, otherwise good 1,400 to 1,500 lb. steers brought \$4.40@4.65; good 1,300 to 1,400 lb. do., \$4@4.40; good 1,200 to 1,300 lb. do \$3.70@4; good 1,100 to 1,200 lb. do., \$3.25@3.75, and fair to good 1,000 to 1,100 lb. do., \$3 @3.40; inferior to fair mixed butchers' and cows and heifers, \$2.75@3.15; fat bulls, \$2.25@2.75; stock do., \$2@2.50; stockers and feeders were dull and weak within a range of \$1.70@3.10. The offerings on Tuesday were all common and the market was weak. On Wednesday there were 8 loads on sale, mainly medium weights and a little coarse. They were sold at prices which were considered lower than those of Monday. On Saturday the market ruled dull and prices were a shade lower, closing at the following:

QUOTATIONS:

Extra Beeves—Graded steers weighing 1,300 to 1,450 lbs.	\$4 75 @5 00
Choice Beeves—Fine, fat, well-formed steers, weighing 1,300 to 1,400 lbs.	4 00 @4 35
Good Beeves—Well-fattened steers weighing 1,200 to 1,350 lbs.	3 70 @4 00
Medium Grades—Steers in fine flesh, weighing 1,100 to 1,200 lbs.	3 25 @3 75
Light Butchers'—Steers averaging 1,000 to 1,100 lbs, of fair to good quality	3 00 @3 40
Butchers' Stock—Inferior to common steers and heifers, for city slaughter, weighing 900 to 1,400 lbs.	2 50 @3 25
Michigan stock cattle, common to choice	2 50 @3 00
Michigan feeders, fair to choice	3 00 @3 25
Fat bulls, fair to extra	2 25 @3 00

SHEEP.—Receipts 35,000, against 43,800 the previous week. The offerings of sheep on Monday consisted of 71 car loads, about 14,000 head. The market ruled dull and slow, but the best sold at about the closing prices of Saturday. Fairly good to choice sheep brought \$3.75@4.55; inferior and common not wanted; western lambs dull at \$4.50@5.40; quite a number of all kinds were left over. The market showed no improvement on Tuesday and Wednesday, the trading being confined almost entirely to the sheep left over from Monday's market. On Saturday there were 6,400 sheep on sale. The demand was light and prices lower. Common sheep were unsaleable. Good to choice sheep were quoted at \$3.75@4.25, and fair to choice lambs at \$4.50@5.25.

HOGS.—Receipts 82,719, against 95,372 the previous week. There were 82 car loads of hogs on sale Monday. The demand was active and prices higher than on Saturday. Good to choice Yorkers sold at \$4.65@4.70; fair do., \$4.50@4.60; selected medium weights, \$4.75@4.80, and pigs at \$4.30@4.50. There were 27 loads on sale Tuesday. The market ruled slow but prices were unchanged. On Wednesday there were 30 loads on sale. The demand was active at full former rates until near the close, when the market weakened. The receipts were small on Thursday and Friday and the market about steady. On Saturday the receipts of hogs numbered 14,750. The demand was active at former prices. Good to choice Yorkers sold at \$4.75@4.85; fair do., \$4.50@4.65; selected medium weights, \$4.80@4.85.

CANADIAN BRED CATTLE TAKE THE LEAD AT THE AMERICAN FAIRS.—The Breeders' Gazette, of Chicago, in the September No., page 427, gives a description of the Iowa State Fair. In referring to the two year old bulls, it says:—'The two year old bulls were a good lot: from the Dominion of Canada came 'Oscar' and 'Baron Warlaby,' both selected by Mr. Hope of Bow Park for exhibit. In the grand showstake herds, beef breed, five groups of Shorthorns, two of Herefords and one of Aberdeen Angus, competed for a \$500 prize. The judges awarded it to the Bow Park herd headed by Baron Warlaby.

At the Minnesota 29th annual State Fair held last week, in the two year old bull class four animals came forward, but the race was between the entries of Messrs. Hope and Clark with Baron Warlaby and Oscar, the winners in the same ring at Des Moines, Iowa. The first prize was awarded to Baron Warlaby and second to Oscar, reversing the Iowa decision. They are so evenly matched however that the average onlooker would have been satisfied had either received the first prize. The \$500 prize for the best herd of beef cattle was carried off by Mr. Hope of Bow Park, the herd being headed by Baron Warlaby.

The above mentioned bulls, Baron Warlaby and Oscar, purchased by N. P. Clarke, St. Cloud, Minnesota, were owned and purchased from Mr. Henry Groff, Elmira, Waterloo Co., Ont.

The Baron Warlaby was shown at the Industrial at Toronto, Provincial at Guelph, and Great Central at Hamilton in 1886, carrying off first place in competition with those in his class. Baron's dam has a beautiful roan bull calf this year. Oscar's dam, grand dam and great grand dam were bred and owned by Mr. Henry Groff, and traced back to Lady Day, imported.

The Lady Day family have proven themselves good animals, being winners under keen competition, and as in the cases cited above, have brought the name of our Dominion, as a stock producing

country, prominently before the world. We understand Mr. Groff's herd was founded on the Lady Day family and has still quite a number of them.

Correspondence.

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

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

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

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

Raising Winter Lambs.—There are a number of enterprising men in centre New York who find raising winter lambs to be a very profitable part of their farm work. One of these persons, and he is the largest grower, has 160 ewes. Two bucks were placed with them in June, and will be taken away so that no lambs will be dropped later than February. The ewes are all grades and will weigh about 125 pounds each when in good condition. On the approach of cold weather, they are put in the basement of his barn, which is fully walled on one side, partly so on two sides, and the other side and portions above the walls are boarded, battened and to be lined with sheeting-paper costing \$3 per 1,000 superficial feet. Heretofore the exposed portions were boarded and filled in with straw, but the rats made such havoc with the straw that changing to paper was considered desirable. The space is divided into compartments 12 x 16, with a passage through the centre of the space, each pen accommodating twenty ewes. They have their separate hay racks and feeding troughs. There is a tank of water in one corner of the basement, and each pen of sheep is supplied with water from this tank. The food consists of clover hay and corn fodder, together with a grain ration of corn, oil-meal and wheat bran, mixed equally by weight, and of this they get all they will eat clean, being about 2 quarts a day for each sheep. Besides this, they are fed yellow globe beets in sufficient quantities, and about 2 bushels a day of these are consumed. The gates leading from the pens into the passage are sufficiently high to allow the lambs to escape into the passage where feed troughs are placed for their use, filled with the same rations as their mothers have. At Christmas the ewes are sheared, the shrinkage in the wool from that to the usual shearing time being about 25 percent. In January and on to March the lambs are sold, weighing then from 30 to 45 pounds each when dressed. The first lot sold will bring about \$12 each, and gradually lessen until April, when less than \$7 will be realized. They are all "hog-dressed" and wrapped in clean, white muslin and then burlaps, when they are shipped by express to New York city, to feed her merchant princes. The dressings are all returned and are ready then for the next lot. The ewes are fat and ready for the butcher as soon as the lambs are sold, so, if desired, they can all be disposed of and at good figures. Any person can readily judge of the profit, and the idea is infectious, and some others are following in the same path, and by this means will make greater profits than by the raising of so much wheat.—W. R., Ithaca, N. Y.

Hen Manure.—I have a quantity of hen manure; what quantity may I apply to the acre for garden stuff, onions, beets, cabbages, etc.? Is it best to apply it after it is heated or in a crude state? The manure has been kept dry.—W. A., Melanthon.

[Hen manure contains five times as much nitrogen, twice as much potash, and ten times as much phosphoric acid as fairly good barnyard manure, so you see it is very concentrated, and about one-sixth or one-seventh of the quantity of barnyard manure ordinarily applied will produce the same results. Chemical analysis has shown hen manure to be worth over \$15 per ton. Owing to its concentrated form, it should be thoroughly mixed with about an

equal weight of earth before being spread on the land, and it should also be thoroughly mixed with the soil. The quantity applied depends upon the kind of soil. Gardeners usually apply 50 to 75 tons per acre of farmyard manure, which would be equivalent to 10 to 15 tons of hen manure, but, of course, your garden will be very thankful for one-fourth of this amount. Hen manure is applied fresh, as it does not heat.]

Keeping Dahlias through the Winter—Propagating Clematis.—1. Please give a good method of keeping dahlias in winter; I know about putting in sand, etc., but always fail to bring them through safely. 2. How is the clematis propagated; is it by layers, or how is it done? Please reply in the ADVOCATE.—W. B., Chesterfield.

[1.—Packing the roots in sand is the method generally giving the most satisfaction. The sand and roots must, however, be perfectly dry. If this does not give satisfaction, hang them up in a dry, frost-proof, cool cellar. 2.—The clematis is propagated by grafting, cuttings and layers. The grafting is the most common method. It is done by inserting a small scion into a split made into a piece of a healthy root. Tie the cleft with matting, pot the new plant, and set it in a propagating house. Cuttings are propagated the same as other cuttings in the propagating house. Layering is done by slightly scraping the bark on one of the branches and covering with earth. If well matured, they form roots at the covered joints in about a year. Cut off and transplant the rooted branches in spring.]

Nasal Gleet.—As an old subscriber to your valuable paper, I venture to ask your advice. I have a valuable mare colt, rising three, which took distemper in August, 1866; we paid little attention to her, as all the colts in the settlement were affected; they all got over it, but she has still a thickness in her wind and generally swollen on her nostrils, affecting the eyes at times, and a discharge from one nostril; the side that discharges don't swell so much as the other.—OLD SUBSCRIBER, Gladstone, Manitoba.

[Paint the throat with tincture of iodine every fourth day, and give a powder consisting of gentian and sulphate of iron, each one drachm; also a powder consisting of iodide of potassium and ginger, each one drachm. Each of these powders should be given alternately every night and morning. Continue this treatment until relief is obtained.]

A Marl-bed Discovered—How to Use Marl as a Fertilizer.—Could you inform me, through the columns of your valuable paper, the best method of applying marl to land; on what crops it produces the best results; in what quantities per acre; what preparation it has to undergo, if any, and, in fact, a general description of the marl itself? As there has been discovered what is supposed to be marl in considerable quantities in this vicinity, you would confer a great favor and oblige a reader of the ADVOCATE by answering the above questions.—J. H. L., Dorchester, Ont.

[If the substance looks something like clay, get a small bottle of hydro-chloric acid from a druggist, pour some on the material, and if an effervescence takes place, you have had the good fortune of discovering a marl bed which may be of immense value to you. Marl is a carbonate of lime, and has been minutely described in our issue of last March, page 78. By reading this article, headed "Lime as a Fertilizer," you will get all the information you require.]

Cure for Bee Stings.—Although I am not a farmer I cannot get along without the ADVOCATE. I am a blacksmith. I started this summer to keep bees on a small scale. I will go in more extensively next year. What will cure bee stings; I get lots of them?—S. J. W., Peck.

[One of the best cures for bee stings is ammonia.]

Protecting Fruit Trees from Frost.—In the interest of myself, as well as some of my neighbors, please answer a few questions. As we are living pretty far up north, about 30 miles up the Du Lievre river, we are likely to have difficulty in wintering over our young fruit trees which we planted last spring, and which, in some places, look quite thrifty this fall. The varieties most of us grow are crab apple, Fameuse, Champansky, Tetofsky and the Canadian red egg plum. For the first question: 1. Is there any way of wrapping trees up with straw to keep the limbs that are not covered by snow from getting frost killed? 2. Could anything be done to keep the sap from starting too early in the spring, which often results in freezing the whole tree in some cold night following?—H. H., Val des Bois.

[1. The plan might work to some extent, but it certainly would not pay to protect trees in this manner. Either get harder trees or purchase fruit from growers in more favored sections. 2. The only practical and profitable way to prevent trees from budding too early is to mulch the ground around the roots, thus keeping the frost in the ground later in the season. The most effectual method is to tramp the snow under the trees, and then spread on some straw or coarse manure, which will prevent the snow from melting early, and thus keep the roots cool.]

The Household.

How to Keep Apples in Winter.

The great secret of keeping apples through the winter is to store them in a well ventilated room or cellar that is kept as near the freezing point as possible without actually freezing the apples. Apples and potatoes should never be kept in the same cellar, or if this is unavoidable, the potatoes should be kept in the warmest part of the cellar, and the barrels of apples, well headed up, near the windows, where, on days when the air outside is only a few degrees above freezing, they can be treated to a cold breeze from the open windows, while, at the same time, the atmosphere in the part of the cellar where the potatoes are kept does not fall below forty degrees. With a thermometer in the cellar it is quite possible to cool off the apple without injuring the potatoes.

Do not unhead the barrels until the apples are wanted. It is rarely a good plan to sort over the apples to pick out the rotten ones. Let them remain undisturbed. Apples in ripening give off carbonic acid, which cannot be allowed to accumulate in the house cellar, but must be removed by ventilation. This deleterious gas, carbonic acid, aids in preserving the fruit, and it is one of the advantages of an outside cellar that this can be allowed to remain.—[American Agriculturist.]

How to Cleanse Woolens.

Experiments made in Germany on the best method of cleaning woolens have led to the following conclusions: First, the liquid used for washing must be as hot as possible; second, for the removal of greasy dirt, sweat, etc., borax is of so little value that its application would be mere waste, and, though soap lye is better, the preference must be given to soap lye along with ammonia, a mixture which works wonders, by quickly dissolving dirt in particular parts which are hard to cleanse, raising and reviving even bright colors; third, that on the other hand, for cleaning white woolen goods there is nothing which even approaches borax—soap lye and borax applied boiling hot, give to white woolens a looseness and a dazzling whiteness which they often do not possess when they are new; fourth, if shrinking is to be entirely avoided, the drying must be accelerated by repeatedly pressing the woolens between soft cloths. In no case should the woolens be dried in the sun, as they become dry and hard, they being best dried in a moderate current of air, and in cold weather in a warm place, but not too near the source of heat. In the above experiments all the various degrees of heat were tried, from the hottest to the coolest temperature; all the favorite cleaning materials were also employed—soap, borax, ammonia, benzine, and mixtures of these.

Household Hints.

A whisk or small dusting brush is the best for sweeping stair carpets.

Whiting or ammonia in the water is preferable to soap for cleaning windows or paint.

Moisture is a great enemy of the piano, and it cannot be too carefully guarded against.

To remove mildew, rub common yellow soap on the damaged article, cover with starch and then salt the starch on that. Rub well and put out in the sunshine.

All cooking utensils, including iron pots, should be rinsed after washing, and carefully wiped on the outside with a clean, dry cloth. A soapy or greasy dish cloth should never be used for that purpose.

Family Circle.

AGNES.

(Written for the Farmer's Advocate, by Snowdrop.)

CHAPTER I.

"Yack, now you have finished your breakfast, I want to have a talk with you; I suppose you can spare me a few minutes."

These words were spoken by Farmer Bently; as, after having finished his breakfast, he leaned back in his chair and looked earnestly at his son.

I wish you could have seen Farmer Bently; so tall, straight, broad and strong he was, in spite of his sixty years, and with such a cheerful, hearty voice, it was no wonder everyone loved him.

He always made me think of the fine old oak tree that grew beside his dairy. The oak tree that he loved and was so proud of. In the autumn, when the tremendous wind storms came, and the gales seemed as if they would blow the very house down, tearing the birch trees to pieces, and whirling the young fir trees into the air and down again with terrific violence, that giant king of the forest stood firm and stately in all its majestic dignity.

But, though the farmer was hale and hearty for his years, his hair was snowy white; that was caused by sorrow. He had been the proud father of six fine children; his home had seemed all happiness and sunshine; then a terrible time came, when diphtheria raged through Hilton; five of his loved children died, and only baby Yack was left.

Yack, when our story commences, was twenty-five, and a fine or more manly young fellow you could not find in all the country round. His parents lavished upon him all their hearts' affection, and he returned their love with true filial devotion.

But Mr. Bently is speaking to his son, and Yack, pushing his chair back from the table, gives his father his fixed attention. There is a look of earnest interest in those fine dark eyes of his, which, as his father proceeds, changes to one of extreme amusement.

"You know, Yack, I have given you half the farm and half the stock."

"Yes, father, and I felt very grateful to you; not many fathers give their sons so much."

"Let that be as it may, my boy. What I want to say to you now is this, I cannot give you half the mother."

"Half the mother! What do you mean? I do not want half the mother. Mother, what does father mean?"

But Mrs. Bently only smiled; and the farmer's eyes were twinkling at his son's amazement. "What I mean," resumed Mr. Bently, "is, that now I have increased our stock, the mother will have enough to do on my farm, and you must get a wife; it is quite time, you are old enough, and, I think, would have a chance with almost any girl in Hilton, which can boast some fine girls, too."

"Thank you, father."

"You seem to take things very coolly," said the farmer, laughing, "but, Yack, I am in earnest; you never pay attention to any girl, except Miss Scott; I think it is high time you began to be serious, don't you, mother?"

"I would like him to have a good wife," replied Mrs. Bently.

Yack looked half amused, half bashful. "Supposing I am serious, father," he said.

"Serious! When? How? I have seen nothing serious."

"You say I pay attention to Miss Scott; why may I not be serious?"

"Miss Scott!" exclaimed the farmer and his wife in a breath. "You would not think of asking Miss Scott to be your wife!"

"Why not," asked Yack, his color rising.

"Yack," said his mother, gently, "you know she is born and bred quite a lady; think of her education; she would consider it as thrown away if she married a farmer."

"If Agnes Scott thinks she would be throwing herself away by marrying me, I hope she will tell me so," said the young man indignantly, as he rose from his chair, and began pacing up and down the room. It was the consciousness that his mother might be right which made him feel so angry.

"And not only that," said his father, "but Miss Scott would never be able to work; I fancy I see her hands in the dough; no, no, Yack, you would be on the high road to ruin, if you married her. As a young lady, there never was a sweeter or better one; but as a farmer's wife, never, never. So, Yack, put the thought far from you. Why, my dear boy, I could pick you out a more suitable wife than that."

So saying, the farmer left the room and went out to his farm work, looking more solemn than he had for many a day.

Poor Yack; his pride had received a sharp wound. Farmer Bently certainly put Miss Scott in rather an unfavorable light; but his father's poor estimation of Miss Scott's powers as a farmer's wife, did not restore Yack's confidence in his own.

"Mother," he said, stopping suddenly in front of her, "do you think Miss Scott looks down on us? I thought her too good for that."

"I do not know, my dear boy, you must ask her."

"Then you do not think it great presumption on my part?"

"My boy," said the mother, tenderly, "I would think you worthy of the best girl in the world; but then I am your mother."

With a light laugh, Yack stooped down and kissed her; then he left the house. His mother had comforted him.

Mrs. Bently gazed earnestly after her son until he was out of sight; then turning from the window, she went about her work, saying, with a sigh: "Poor Yack, I wonder what Miss Scott will say to him." She had not much time to think about it now, for her work, which was behindhand through this unusual interruption, engaged all her attention.

Farmer Bently, though so good and fine a man, had his faults. Show me the man, farmer or otherwise, who has not. He, without knowing it, possibly, was selfish; or perhaps it was thoughtlessness; whatever it was, it caused his wife to suffer. He had an idea, which many farmers have, namely, that to spend money on many comforts was to waste it; so he seldom hired help for himself, and never for his wife, who was a gentle, yielding woman, almost too gentle; that is, in her extreme gentleness she became quite timid in advancing her own opinion; in fact, she seemed hardly to have an opinion of her own at all, until her life seemed to have the appearance of slavery. The farmer himself worked almost like a slave from morning till night; told his son to do the same, and imagined that his wife could follow their example. And she did until sometimes body and mind were nearly worn out. It was more than sorrow, made those silver threads through her hair and those lines upon her face. Farmer Bently was wealthy, quite wealthy enough to keep a servant—two, had he wished it, for his life, but he never dreamed of such a thing. What ages it seemed to Mrs. Bently since she, a young girl, strong and happy, was courted by Fred. Bently, the handsomest, richest, and nicest farmer in all Hilton.

Who was this Agnes Scott? Four years ago, when Agnes was eighteen, Mrs. Scott, a widow lady, had come from the city to live in Hilton. Agnes, whose father had been a clergyman, had received a liberal education. When the father died, all that he had to leave his wife was an annuity of about five hundred dollars, and a cottage home in Hilton. At this cottage Mrs. Scott determined to live; her income would go twice as far there as in the city. It was a great sacrifice to mother and daughter to leave all their friends, and the home where Mrs. Scott had spent all her happy married life; but they made it, and knew they had done what was right. It was a great change to Agnes, after the advantages and stir of city life, to live in quiet Hilton. She soon learned to love the country more than she ever had the town; her life was no busy, she never felt lonesome nor dull. Agnes considered her education as her fortune, and resolved to live independently of her widowed mother. She passed the necessary examinations successfully, and became the head teacher (the school had two), of Hilton public school. Thus the mother and daughter were enabled to live in their pretty cottage home in refinement and comfort.

Every one in the village loved gentle Agnes Scott; she was always ready to comfort anyone in trouble, and was always so bright and cheerful. But none other loved her as Yack Bently did, none other dared. Poor Yack had lost his whole heart; he felt that life would be the sweetest bliss with Agnes by his side; without her, all would be dark and desolate; yet, was it not likely, nay, more likely than not, that Agnes would reject him. He wondered if she knew he loved her; he thought not; true, he walked home with her every week from choir practice, and every Sunday from church; but as his home lay on the same road past hers, it was only the right and proper thing to do. He must ask her soon, and end this suspense. Besides, he told himself, "Faint heart never won a lady fair." He would let her think he considered himself worthy of her. And worthy he was.

CHAPTER II.

A month had passed away, and Yack had asked Agnes to become his wife. And what of Agnes? She, sweet, gentle Agnes Scott, the dearest girl in all Canada, had given Yack her love—the love of her whole heart. Oh, what happiness for Yack; how glad his mother was for him. But his father said, "I am afraid, my son, you will repent it; nevertheless, I give you my best wishes; you shall have the other half of the house; it must be newly furnished, but mother will help you with that. We shall receive your wife right really."

What did Mrs. Scott say to all this? After Yack had left her, Agnes went to her mother, and sitting by her on the sofa, holding her mother's hand in hers, she told her all. How Yack loved her, and how good he was; and mother, she said softly, "I love him, too, and have promised to become his wife."

"You, Agnes, you a farmer's wife; you might have made a better choice than that."

"None better than Yack, mother."

"I mean, Agnes, a better position; a farmer does not need an educated wife."

"Why not, mother? I think a farmer, such as Yack, ought to have as good a wife as any one; besides, Yack is not ignorant, though his education is not classical; it is sound, good, and sensible. His mother is a lady in thought and feelings, though she has to work so hard."

"That is just it, Agnes; if you became his wife, you would at last become a slave, or something very nearly that; a farmer's wife, if educated, never has time for reading and the studies she delights in; if not educated, she does not want the time; work keeps her out of mischief. So, Agnes, the conclusion that I come to is this: Let farmers marry uneducated women, who will have no thoughts, no wishes for higher things than the ordinary round of drudgery."

"My dearest mother," said Agnes, with a smile, "the conclusion you arrive at is quite, quite wrong; what is right is this: Farmers should marry educated women, and not allow them to work so hard;

if the mothers were educated the sons would be better educated, and then the farmers, that grand and noble people, the pride of Canada, would become more worthy of their country."

"I am afraid, Agnes," said Mrs. Scott, who did not seem very much moved by Agnes's enthusiasm, "that Yack will not keep a servant for you; you will degrade into a household drudge; I could not bear to see you so, my darling daughter."

"Never fear for me, mother; Yack loves me too well for that."

"His father loved his wife, too, Agnes, and think of her position now. I cannot help but feel afraid."

But Agnes trusted firmly in Yack's love.

Two months later Yack and Agnes were married. The people of Hilton had never seen a sweeter bride nor a prouder, happier bridegroom. Yack took Agnes on a visit to the Niagara Falls, where they spent a fortnight. He could not spare a longer time from his farm, and Agnes did not wish him to. They came home to live a life—was it to be, as Mrs. Scott predicted, a life of drudgery for Agnes, or, as farmer Bently prophesied, a life of idleness? It was neither.

The day after they arrived home, Yack and his wife were standing by the dining-room window, after breakfast, looking out upon the garden.

"Yack," said Agnes, presently, "I want to have a talk with you."

"Say on, my pet," he replied, putting his arm lovingly around his young wife and drawing her to himself.

"You know, Yack, I have never done farm work in my life, never having had occasion to. I can keep a house tidy; I think I can cook a good dinner; in fact, I am almost sure I can do that, and, as for sewing, I have been taught that it is an accomplishment indispensable in a lady's education."

"Why you can do a lot, Agnes, and I am certain you would soon learn the other things, you are so clever."

"I shall certainly try to learn all I can; but are you poor, or rich, or well-to-do, as people call it; which are you, Yack?"

"With you as my dear wife," replied Yack, with a fond caress, "I am the richest man in all the world."

"Oh, Yack, I did not mean that; I mean as regards money matters."

"Well, Agnes, I suppose I am between well-to-do and rich. I am more than well-to-do, yet hardly what you would call rich."

"Would we be poor, Yack, if I had a servant to do the roughest work?"

"A servant, Agnes; is it necessary? My mother never kept a servant."

"Yack," said Agnes very gently, and looking up at him with a rather mischievous smile, "you have not answered my question."

"No, Agnes, it would not make us poor, though in the bad seasons we might only just manage to pay expenses; in the good season we would still have something to put by."

"Would it make any great difference to you?"

asked Agnes; "is it absolutely necessary to save?"

"Not absolutely, Agnes; but I think it is the best way for one to save all one can."

There was silence for some time, each busily thinking; then Agnes asked so suddenly as almost to startle her husband: "Yack, what made you love me? I am not pretty, everyone knows that."

"Love you! Agnes, darling, how could I help it? You made my life so different; I always felt so happy in your company; you are so cheerful, so bright, so different from any other woman I ever met. All the other young ladies seemed to have nothing sensible to talk about, and some of them, very silly ones I think, seemed to have a propensity for giggling in my company. Do you know, Agnes, when you used to tell me about your work, and about the interesting books you read, or when we used to discuss the books you were so good as to lend me, I thought that the man who won you for his wife, would have nothing more to wish for in this world; I hardly dared hope that I would be that man; you never gave me much encouragement, did you, Agnes?"

"I never knew you loved me, Yack."

"And now, darling, your question is answered; you know why I love you so. I love my mother very much, but she could never rest me after a hard day's work as you could; she always had her own troubles to think about, or was too tired to sympathize with me. With you to cheer and strengthen me, I felt no work would be too hard."

"And you thought, dear Yack, that through all our married life I would be the same cheering, sympathizing helper?"

"Will you not, my darling?"

"Yack, I must be practical and plain; you know what the work is; you have twelve cows, that will make a lot of work; you say you will often have a man working here, sometimes two; how busy that will keep me; besides all the other work that is in every farm house. How could I, having all that to do, remain bright and cheerful? No, Yack, like our mother, I would have my own troubles to think of and be too tired to sympathize with you. It is hard work that has made your mother so dispirited and made her look so worn. If I have a strong servant to do the harder work—you say it would not ruin you quite, you know—then I should have time for reading and other things that keep people's lives bright. I do not say I must have a servant; I do not want to be self-willed; but, Yack, my dearest husband, I want you to love me more and more; I want to be your truest helpmate all through our life, and I cannot be that if I am worn out nearly with hard work. Do you understand me, Yack, or have I offended you?"

"No, no, my own sensible Agnes, you have not offended me; far from it. You have made me see how selfish we men are, to imagine you can work so hard and yet be always bright and pleasant for us."

Agnes, I would rather lose all my wealth than your bright smile. You shall have a servant as soon as we can get one, the strongest we can procure, and I must see that mother has one, too. Can you forgive me, Agnes, for my selfishness?"

"Yack, there is nothing to forgive, but I feared you would be displeased with me for speaking as I have."

"No, Agnes, you have done quite right. But hark! the clock is striking nine, we have been talking here an hour; this will never do my farming; we must reserve our talks till evening." Then, with a loving kiss, he left his wife and went out to his work.

And Agnes went to hers. She found it very hard, but Yack's mother came to her assistance, and Agnes was quick to learn. In a few days her servant came; a tower of strength she was, who soon learned to love her gentle mistress. And Farmer Bently obtained help for his wife, too, for Yack brought Agnes' eloquence to bear upon his father, and Mrs. Bently learned to bless the day when Yack took unto himself a wife, and that wife—Agnes Scott.

And Agnes had her time fully occupied; a farm always furnishes abundant work. But she always had a bright smile for her husband, and whenever he was in difficulty or trouble, she was by his side to help or comfort him. While with his strong arm to lean upon, and with his love and sympathy, she was strengthened for her work. Often in the evenings they would read and talk together, or she would play and sing for him; then they thought none could be happier than they.

CONCLUSION.

And so the years rolled on, and Agnes lived an earnest working life. Their children grew up around them, filling their hearts and home with every sunshine; and also filling Agnes' hands with work. She seemed never idle. Her influence was unbounded; it extended far beyond her home; every one who came to that house felt it, and went away better for having known her. All were earnest workers at Yack's home; each had his appointed tasks to do, and Agnes was the ruling queen of all.

Though Agnes ruled her house so well, she never by word nor deed attempted to control her husband's actions. She believed firmly as her Bible taught her, that the husband is the head of the wife. They sometimes differed in opinion; they could not always think alike; then Agnes would tell her husband what she thought right, and her reasons for thinking so; if he, on considering it, thought her plan better than his, he would tell her so, and then carry out her ideas. If, on the other hand, he considered his the better one, he gently and firmly told her that he must have his way. And she, like a good wife, trustingly and lovingly yielded to his will.

Did Agnes never feel inclined to neglect some duty? to leave some task undone? Yes, many times she did; how tempted she would be to leave that pile of mending, to neglect to see her orders carried out, or inclined to break a promise she had made to her children, if she felt too tired to see it was fulfilled; how she longed to leave these things sometimes, and to sit down doing nothing. But Agnes remembered, that once neglected, she might never get them restered to order again; that if once she let the reins of authority slip from her firm grasp, she might never recover the control and influence of her house which she now had.

But did Yack and Agnes work so earnestly, so unselfishly by their own strength? No, the God above was their God; their ruler and their guide; they looked to Him for strength; no wonder, then, that in that home dwelt peace and happiness.

Was Agnes repaid for her unselfish labor? for putting aside all thought of her own cares, that she might cheer and comfort her husband by her gentle sympathy? Her interest herself in all her children did? She thought so when she felt Yack's loving arms around her, and heard him say so tenderly; "My own, my darling wife." It strengthened her for days to come.

And then she has that sweet, that blessed comfort that fills her heart with joy and peace unspeakable: *Her children arise up and call her blessed.*

The Princess of Wales is always to be found on the side of common sense, and in having her daughters taught the complete art of dress-making, says London Queen, has set an example which ought to be widely followed by women to whom it must be of much greater consequence. The Princess herself is known to be completely up both in theory and practice, and this is the great reason why she is always so perfectly dressed, and why her dress-makers find her so difficult to satisfy with anything short of the best cut and workmanship.

A little boy who was to pass the afternoon with the doctor's little daughter was given two pieces of candy. When he returned his mother inquired if he gave the largest piece to the little girl. "No, mother, I didn't, you told me to give the largest piece to the company, and I was the company over there."

Minnie May's Dep't.

MY DEAR NIECES,—Early in August I joined an excursion party formed in London to do the sights of Paris and its environs. This month I am going to give you a slight sketch of Versailles. The town itself has little to attract attention beyond the Palace, and it is a marvellous edifice. Were Paris blotted from the face of the earth, leaving nothing behind it but the Palace of Versailles, the journey to this fairy-like structure would alone repay you. It was originally a mere hunting seat, of red brick, erected by Louis XIII. in the midst of a forest. It was his prodigal successor who, tired of his other residences, converted that small castle into the most magnificent palace in the world. It took 21 years to finish the work, though sometimes as many as 30,000 soldiers were simultaneously at work upon it. When the labors were completed, the cost was found to amount to such an enormous sum that even the profuse Louis Le Magnifique thought it advisable to burn the accounts, in order to destroy all records of it. In 1681, Louis XIV. for the first time occupied his new residence. Then commenced that succession of splendid fetes which have spread the name of Versailles throughout the civilized world as synonymous with magnificence and extravagance. Versailles afterwards formed the great centre of operations of the most remarkable war ever witnessed in the world's history; and later, when Paris was seized by the Communists, it became the seat of the French legal government. Since the period of Louis XVI. it has remained uninhabited, and is now open to the public. It is the grandest gallery of pictures illustrative of the History of France in existence. There are over 5,000 pictures exhibited; the largest ceiling paintings in the world, and the most gorgeous ornamentation. The decorations of some of the King's apartments are more interesting than the pictures, and it is impossible for me in this brief sketch to particularize of the splendid pictures or ornaments; the many courts and galleries, state apartments, apartments of Marie Antoinette, Salon des Glaces, or grand ball-room, one of the finest in the world, the ceiling being gorgeously decorated to the glory of Louis XIV.; the walls covered with mirrors from end to end; the windows, of which there are seventeen, overlooking the splendid gardens. The last royal ball given here was in honor of Queen Victoria, 1855, when she opened the ball with the Emperor Napoleon III. as her partner. Leaving the castle we enter the Gardens of Versailles. At first sight a magnificent panorama is opened to view, the superposed terraces, the numberless flower-beds, the groups most elaborately sculptured, the vast number of statues and vases, the superb trees, several centuries old, the flowers resplendent that border the marble stairs, the avenues of arched foliage, the grottoes and rotundas and the numerous large, magnificent fountains, form a series of fine prospects to which it would be impossible to do justice in a short description. The fascinated eye dwells upon colonnades, pilasters, and pavilions ornamented with exquisite sculptures. The fountains play in the gardens once a month in summer; the exhibition of these *grandes eaux* costs the town of Versailles 10,000 fr. on each occasion, and the sight is almost worth the trouble of crossing the Atlantic to witness. Descending a magnificent flight

of marble steps at the end of the terrace, we walked a short distance to the Grand Trianon, a handsome villa of one story, erected by Louis XIV. for Madame de Maintenon. It contains several richly-furnished apartments; private rooms of Napoleon 1st; suite of rooms prepared for the reception of Queen Victoria in 1846, of which the bed-hangings are the richest Lyons silk. Before leaving Versailles, I must just mention the state carriages, the grandest and costliest ever built, especially the coronation carriage of Charles X., which weighs 14,000 lbs., and cost in all £40,000. Next month I hope to give you a description of Paris.

MY DEAR NIECES,—Would that I could impress upon my young nieces, the farmers' daughters, the necessity of more thoroughness in their house-keeping. Always bear in mind that whatever is worth doing at all is worth doing well. And first, will simply draw their attention to the amount of sour, unpalatable bread made in country homes. My sympathies go out to the farmer who comes home to his dinner, often too tired to eat, and sour bread and fried pork constitute that meal. The specimens of bread exhibited at county fairs are far below what they should be. True, there are some good specimens, but the majority are bad. From the severe physical exertion a farmer always has to use, his food should be the best and wholesomest, and most easily digested, for the digestion is impaired by fatigue; hence so many cases of dyspepsia amongst farmers, and their wives and daughters are to blame. The Arabs grant divorce for bad bread, and I do not wonder. Do not think any time wasted that you bestow on making bread sweet, and let no sign of scorch appear on the crust; that shows neglect and carelessness. Your pride should be your bread and butter. A farmer's wife is not trammelled by any social duties, and it should be her study how to make her food most wholesome. The pork on almost every farmer's table tastes rancid, because carelessly cured. I know in farmer's households the wife and daughters often have a rush of work, especially in the summer months, when extra help is hired to assist in saving the crop; but the time pork usually is cured is in autumn and winter, and instead of being rubbed with coarse salt and packed in barrels for summer use, if a proper pickle were made and the pork laid in it, there would be no rancid tasting spots as one so often finds when eating it. Sugar and saltpetre added to the pickle improve it in flavor and prevent the salt from hardening. Twenty pounds of salt, three-quarters of a pound of saltpetre, and two pounds of coarse brown sugar, will make a delicious pickle, dissolved with boiling water enough to float an egg. A farmer's home commands every luxury, and of the freshest and best; and why does their daily meal not look more inviting than it does? Simply because there is no spirit of emulation among the women of their household to have things look nice; they think it not worth while to put on any style, as they call it. Now, there is no labor lost that is bestowed upon one's home table; or no time wasted spent in making our home bright and attractive; and where can our best exertions be better bestowed than upon the food and table that is our common meeting ground three times per day? If our dinner is only pork, potatoes, and bread, it can all be good—the bread should be no other than first-class; the pork need not

always be fried; boil until tender; take off the skin; score the fat into small dice; cover thickly with bread-crumbs, and bake for one hour in the oven. Add, if possible, a dish of baked apples, and your dinner will not be such a bad one for a hungry man. There is nothing the matter with the materials, it is all in the matter of cooking. And again, I say, there is no labor lost; no time wasted in preparing and cooking food for your household.

MINNIE MAY.

Work Basket.

BABY'S JACKET.

This is an under jacket suitable for a baby to wear under its long cloak. It should be made of Shetland wool, either white or mixed with some delicate color. An ounce of wool and a bone crochet hook are required.

Make a chain of 89 stitches.

1st row: Miss 1 loop, (*) 1 treble in next loop; 1, 1 ch, miss 1 loop, repeat from (*) to end of chain; (44 holes); turn.

2nd row: 2 ch, 1 treble under the first loop of one chain: (a) 1 ch, 2 trebles under the next loop; 2 trebles under the next loop; repeat from (a); turn.

3rd row: 2 ch, 2 trebles, 1 ch, 2 trebles; all under the same loop. These form a shell and the remainder of the jacket is made in this way. In this row there should be 22 shells.

4th row: 2 ch, 1 shell under the one chain that divides the previous shell; 1 shell in each of the next four shells; increase by making 1 ch and 2 trebles in the same shell that the last shell was in; 1 shell; increase as before; 6 shells; increase; 1 shell; increase; 5 shells; turn.

5th row: Without increasing.

6th row: 5 shells; increase; 2 shells; increase; 7 shells; increase to form the shoulder; 2 shells; increase; 5 shells.

Continue in this way, increasing in the same shells and working the alternate rows without increasing until there are twelve rows.

13th row: 5 shells; now begin the sleeve, which is formed without leaving off, thus: 12 shells; unite them in a round; work five rounds; then decrease under the arm by missing one shell; make three more rounds and decrease half way round in each round until there are only eight shells. If you use colored wool (pale blue) join it on and work two blue rounds; then make a round, thus: 1 DC in shell, 2 ch, 4 trebles separated by 3 ch, all in the same shell that the DC is in.

Make the other sleeve in the same manner; then work in rows across the whole width of the jacket (there should be thirty shells); increase under the arms in every other row. Now work all around the jacket with the blue wool the same pattern that you worked around the sleeves. Insert a ribbon to correspond with the blue wool through the chain loops around the neck, and sew pearl buttons down the front or ribbon for tying. This completes the jacket.

Remedy for Deafness.

(Published again by request.)

I was very hard of hearing for a long time. I tried nearly everything. At last I heard of this: Take two thirds British oil and one third laudanum; put together and shake before using; put two drops twice a day in the ear; if it makes you dizzy use two drops only once a day. I can now hear almost as well as ever.

Recipes.

BREADED SAUSAGES.—Wipe the sausages dry, and dip them in beaten eggs and bread-crumbs. Put them into a frying basket, and plunge into boiling fat. Cook ten minutes, and serve with a garnish of toasted bread and parsley. The pretty appearance of the dish will add to the zest of enjoying what would otherwise cooked be a very common dish.

MOTHER'S APPLE PUDDING.—One pint rolled bread crumbs, two pints tart apples chopped, one cupful seedless raisins, half a cupful sugar. Place in layers in an earthen pudding dish, add one cupful of water, bake slowly two hours. Requires no sauce. Peaches, cherries, plums, etc., can be used instead of apples, and these may also be dried fruites. This is an excellent dish for children.

BEST JOHNNY CAKE.—One cup sour milk, one cup sweet, one good egg well beaten, three cups Indian, one cup wheat, half cup molasses add thereto, half cup sugar with one spoon of butter new, salt and soda each a spoon, mix up quickly and bake soon.

BROWN STEW OF MUTTON.—Three pounds of lean mutton, two chopped onions. Cut mutton in sizable pieces to serve, and carefully trim fat from each. Place in frying-pan the fat cut from mutton; when very hot add pieces of meat well floured, chopped onions and one-half teaspoon pepper. Fry until brown, stirring frequently, then add to meat hot water enough to cover well. Into an earthen bake jar slice one turnip and one carrot, pour meat over this, cover closely and place in hot oven. Bake one hour, then add to meat one heaping teaspoon of salt. Cover and bake one hour longer, then serve. Mutton cooked in this way will be found delicious.

POTATO SCALLOPS.—Boil and mash the potatoes soft with a little milk, add salt and pepper, and a dessert spoonful of butter to every half-pint of potatoes, then beat light. Fill some patty-pans or buttered scallop shells with the mixture and brown in a hot oven. Glaze while hot with butter, and serve in the shells. Strew some grated cheese over the top.

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

CATSUP.—To a half bushel of small tomatoes add one quart of vinegar, 1 lb. of salt, ½ lb. black pepper, whole, ¼ lb. of whole allspice, 13 cloves, ½ lb. mustard seed, 20 cloves of garlic, 6 onions, 2 lbs. brown sugar, 1 handful of peach leaves; boil the whole together for three hours, constantly stirring.

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

FRIED PARSNIPS.—Scrape and leave in cold water for an hour, then cook half an hour in hot salt water; wipe, slice lengthwise, dip in melted butter, then in flour seasoned with salt and pepper, and fry in boiling dripping. Drain free of fat, and dish.

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

The Old Fashioned Girl.

She flourished thirty or forty years ago. She was a little girl until she was fifteen. She used to help her mother wash the dishes and keep the kitchen tidy, and she had an ambition to make pie so nicely that papa could not tell the difference between them and mamma's; and she could fry griddle cake at ten years of age, and darn her own stockings before she was twelve, to say nothing of knitting them herself.

She never said "I can't," and "I don't want to," to her mother, when asked to leave her play, and run up stairs or down on an errand, because she had not been brought up in that way. Obedience was a cardinal virtue in the old fashioned little girl.

She rose in the morning when she was called, and went out into the garden and saw the dew on the grass, and if she lived in the country, she fed chickens and hunted up the eggs for breakfast.

We do not suppose she had her hair in curl paper, or crimping pins, or had it "banged" over her forehead, and flounces were no trouble to her.

She had learned to sew by making patchwork, and we dare say she could do an "over and over" seam as well as nine-tenths of the grown up women do now-a-days.

The old fashioned little girl did not grow into a young lady and talk about her beaux before she was in her teens and she did not read dime novels, and was not fancying a hero in every plow boy she met.

She learned the solid accomplishments as she grew up. She was taught the arts of cooking and housekeeping. When she got a husband she knew how to cook him a dinner.

She did not think she knew as much as her mother, and that her judgment was as good as her grandmother's.

And if there be an old-fashioned little girl in the world to-day, may heaven bless her and keep her, and raise up others like her.

HYDROPHOBIA FROM MILK.—It has not hitherto been known that hydrophobia may be communicated through the medium of milk; but from the following note from the Anti-Adulteration Journal, it appears that the disease may be communicated in this way: A dog belonging to A. J. Hall went mad last week, and among the animals which it wounded in its wanderings about the farm was a milch cow. The cow showed no signs of being affected by the wound. Later, however, the animal began showing symptoms of hydrophobia, and at the same time the farmer's two little children, who had been nourished with the cow's milk, exhibited similar symptoms, and are in a most critical condition, suffering the most terrible agonies. The other members of the family are also ill, but these symptoms are not so alarming, and hope is expressed that they may recover.

Mrs. A.—"Great heavens, Cranston! Don't deny it; I saw you kiss her!" Mr. H. (stiffly)—"You are mistaken. She kissed me." Mrs. H.—"But why did you let her?" Mr. H.—"I could not be rude to a lady." Mrs. H.—"But why did she want to kiss you?" Mr. H.—"I can't imagine. You ought to know.—[Life.]

To save stair carpets nail several thicknesses of old carpet or canvas over the edge of each stair. It is a good plan to buy more carpeting than is needed to cover the stairs, and move it each season, so that the whole will wear evenly. If stair carpets cannot be changed in this way they will not wear nearly so long.

The Household Pet.

Fido is dressed in grandpapa's hat,
With his cloak and staff for a gun.
Come, Fido, be quiet, I'm tying this tight,
Now we are ready for fun.
Quick march; don't run; that is not fair;
We can't go so fast as that.
Shut your mouth tight, keep in your tongue.
There, off goes grandpapa's hat.
Come back here, Fido, you naughty old dog;
I'll give you a drink by-and-by;
Just now you're on duty, and must do without.
Do try, good old doggie, just try.
There, he's off with the cloak trailing down in the
mud.
And has dropped his gun in the grass.
How thirsty he was; what a lot he has lapped.
Now, Fido, go foot of the class.
Steady, old doggie, give us your paw;
As a recruit, I can't recommend;
For you will not obey the word of command;
ut you'll still be our Fido, our friend.

The dog, next to the human being, ranks highest in the scale of intelligence, and was evidently designed to be the companion and friend of man. We exact the services of other animals, and the task being performed, we dismiss them to their accustomed food and rest; but several of the varieties of the dog follow us to our home. They are connected with many of our pleasures and wants, and guard us in our sleeping hours. The dog is the only animal that is capable of disinterested affection; he is the only one that regards the human being as his companion, and follows him as his friend; the only one that seems to possess a natural desire to be useful to him, and from a spontaneous impulse attaches himself to man. Many an expressive action tells us how much he is pleased and thankful; he shares in our abundance, and he is content with the scantiest and most humble. He loves us while living, and has been known to pine away on the grave of his master.



Samantha's Medical Adviser.

The idee would keep a sayin' to me, "Saratoga is one of the most beautiful places in our native land. The waters will help you, the inspirin' music, and elegance and gay enjoyment you will find there, will sort a uplift you. You had better go there on a tower;" and agin it sez: "Mebby it will help Josiah's corns."

And old Dr. Gale a happenin' in at about that time, I asked him about it (he doctored me when I wuz a baby, and I have helped 'im for years. Good old creature, he don't get along as well as he ort to. Loonton is a healthy place). I told him about my strong desire to go to Saratoga, and I asked him plain if he thought the water would help my partner's corn. And he looked

dretful wise and he riz up and walked across the floor 2 and fro several times, probably 8 times to, and the same number of times fro, with his arms crossed back under the skirt of his coat and his eyebrows knit in deep thought, before he answered me. Finely he said, that modern science had not fully demonstrated yet the direct bearing of water on corn. In some cases it might and probably did stimulate 'em to greater luxuriance, and then greater flow of water might retard their growth.

Sez I, anxiously, "Then you'd advise me to go there with him?"

"Yes," sez he, "on the hull, I advise you to go."

And a man wuz up behind a soundin' out on a trumpet, a dretful sort of a high, sweet note, not dwindlin' down to the end as some music duz, but kinder crinklin' round and endin' up in the air every time.

Josiah wuz dretful took with it and he told me in confidence that he laid out when he got home to buy a trumpet and blow out jest them strains everytime he went into Jonesville or out of it. He said it would sound so sort of warlike and im pressive.

I expostulated against the idee. But sez he, "You'll enjoy it when you get used to it."

"Never!" sez I.

"Yes you will," sez he, "and while I live, I lay out that you shall have advantages, and shall enjoy things new and unEEK."

"Yes," sez I feelin'ly, "I expect to, Josiah Allen, as long as I live with you." And I sithed. But I had little time to enjoy even sithin', for oh! the crowd that wuz a pressin' onto us, and surroundin' us on every side, some on 'em curius and strange lookin', some on 'em beautiful and grand. Pretty young girls lookin' sweet enough to kiss, and right behind 'em a Chinese man with a long dress, and wooden shoes, and his hair in a long braid behind, and his eyes sot in sideways. And then would come on a hull lot of wimmen in dresses ev'ry color of the rainbow, and some men. Then a few children, lookin' sweet as roses, with their mothers a pushin' in little carts ahead on 'em. And if you'll believe it, I don't s'pose you will, but it is true, that lots of black ma's had children jest as white as snow, and pretty as rosebuds (took after their fathers I s'pose), but I don't believe in a mixin' of the races.— [From "Samantha at

Saratoga," by Josiah Allen's Wife.

Them words I reported to Josiah, and sez I in anxious axents, "Dr. Gale advises us to go."

And Josiah sez, "I guess I sha'n't mind what that old fool sez."

Street Scene in Saratoga.

In the middle of the broad street wuz a bigger mass of chariots and horsemen, and carts and carriages, and great buggies and little ones, and big loads of barrels, and big loads of ladies, and then a load of wood, and then a load of hay, and then a pair of young folks pretty as a picture. And then came some high big coaches as big as our spare bed room, and as high as the roof on our horse barn, with six horses hitched to 'em, all runnin' over on top with men, and wimmen, and children, and parasols, and giggles, and ha ha's.

DANGER FROM HOUSE PLANTS.—Dr. Saalsbury found malarial fever to be propagated among persons sleeping in a room in the window of which had been placed a box of earth from malarious soil. House plants cultivated in pots filled with malarious earth are a constant danger. The germs grow luxuriantly in the moisture and warm air of close rooms. Dr. Eichwald, Professor of Clinical Medicine in the University of St. Petersburg, has given to the public facts concerning a patient of his—a land with malarial fever—who was easily cured by treatment when confined to her chamber, but who quickly relapsed on remaining during the day in her parlor. The easy cure and constant relapse went on for a long time. At last the doctor, having become suspicious of the flower-pots, removed them from the house, and there was no further disease.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES,—This month—the dreary harbinger of winter—has its pleasures as well as all the others if we will but seek aright. What though “chill November's surly blast” moans and sighs without, and the leaden sky is a fitting canopy for nature's doleful mood, let us draw the curtains closer, add more fuel to the fire to make better cheer, and in our cosy sitting-room sit down to enjoy a chat together. Let us sit for a while in the weird play of the firelight shadows. I never see them but a softened feeling steals over me, and I want to muse a while on the olden days—the days of the long ago—while the quaint refrain of an old song comes to me:

“When I was playing wid my brudder,
Happy was I;
Oh take me to my kind old mudder,
Dere let me lib and die.”

I love to watch the lights and shadows playing on your faces, and I wonder what tale the years will tell. Thoughtful eldest sister, why do those kind eyes shine so tenderly at times, while you seem unconscious of our presence?—Sturdy son of the farm—your father's right hand—what lessons do you read in the flickering firelight? Growing maiden, with face and figure promising a radiant womanhood, are you too “dipping into the future, far as human eye can see?” But it is time to light the lamp; father is getting impatient for his evening paper; mother thinks it is a shame for so many to sit with idle hands, and that rosy-faced young rogue, with “school-boy” written in every movement, is getting into mischief—he needs to start his lessons. Why, how is this, Harry? Are you going to sit down beside us in this cosy room with your jacket indicating the color of the horses in your father's stable, and your boots too strongly suggestive of the barn yard? And those hands! an application of soap and water would be a decided improvement. I am glad to have an opportunity to speak to you of these matters. I have long been wishing to do so, and the opportunity has now come. I have at times referred to the lack of intellectual culture amongst our sons and daughters of the farm, and let me assure you this lack of social culture is in some measure keeping our farmers from taking the place they might occupy, and deserve to have. Do you think, now, there really is any virtue in being boorish—pardon me, if I speak frankly. To people of refined tastes the things I have referred to are offensive, and there is no good reason why you should sit a whole evening in the clothing which is right and proper you should wear for work. It takes but a few minutes to wash your face, comb your hair, change your clothing, and put on your slippers, or a pair of half-worn shoes will answer the purpose equally well if you have not slippers. Now, Harry, boy, don't you think if you did this you would be a more fitting companion for those lady-like girls across the table, with their dainty white collars and cuffs. Remember, sir, there are some fellows, to use your own phraseology,

who have not such sisters, and who would be “mighty” glad to steal yours from you, so appreciate them while you have them. And one thing more I would add. When you have occasion to take your sisters any place do try so to look and act that they may be proud of you. I have known brothers, and good brothers they were too, who were so very careless of their personal appearance that a sister could hardly be blamed if she felt a secret longing to get away from the farm. Faces with the unshaven growth of several days, minus collar and tie, a coat which had long since seen its best days, with hat to match, and a certain amount of boots quite conspicuous, make a picture which I am sure you must recognize. I am not speaking slightly or contemptuously when I talk like this, nor do I mean that all, or even the majority of our boys, are guilty in this respect, but I know there are young men with noble traits of character who act just in this way from lack of thought. There are times when work demands coarse clothing, but I have reference to those times when brothers might be as neatly and tastefully dressed as their sisters.

Well, as usual, I have talked a long time, longer than I intended, but ere we say good-night I have a favor to ask. For some days the gem of the “ploughman poet”—the immortal



1—ILLUSTRATED REBUS.

Burns—has been haunting me, and I can suggest no better way of finishing our evening than for that restless young rogue, who is tired of listening to me, and who wants to talk himself, to read aloud to us “The Cotter's Saturday Night.” With such a programme who shall say November evenings are dreary?

UNCLE TOM.

Puzzles.

2—PENTAGON.

Diagram.

- o 1—A consonant.
- o o 2—To drive with violence.
- o o o o 3—A small Indian cane.
- o o o o o 4—Vernacular.
- o o o o o 5—A fish.
- o o o o o 6—The American ostrich.
- o o o o 7—To celebrate.

FAIR BROTHER.

3—CHARADE.

A word to you, my puzzle-friends,
Ere we hear November's knell;
A secret I've discovered,
It is really worth to tell.

Let *first* be your best treasure.
Guard it with jealous eye;
While *second* let naught defile it,
You may do so if you try.

And the guerdon for your trouble
Will pay you I am sure,
For a *total* man is respected
By everyone, rich and poor.

4—WHEEL PUZZLE.

Diagram.

- | | | | |
|-----------|---------|---------|--|
| 2 o | o | o 8 | From 1 to 5 means ductile. |
| o | o | o | From 2 to 6 means cruel. |
| o | o | o | From 3 to 7 means an officer. |
| 3 o o o o | o o o o | o o o 7 | From 4 to 8 means pertaining to the essential parts. |
| o | o | o | |
| o | o | o | |
| 4 o | o | o 6 | |
| | 4 | | |

ADA ARMAND.

5—DROP VOWEL.

Th- pl--s-r-s-nd d-l-ghts, wh-ch m-rk
-n tr--ch-r-us sm-l-s l-f-'s s-r--us
t-sk,

Wh-t-r-r-th-y-ll,
B-t th-fl--t c--rs-rs-f th-ch-s-,
-nd d--th-n-mb-sh-n th-r-c-,
Wh-r--n w-f-ll?—[L-ngf-ll-w.
HENRY REEVE.

6—HIDDEN COUNTRIES.

- (a) I take the Young Ladies' Magazine, which I like very much.
- (b) Talking in whispers I always condemn.
- (c) In his recital you may easily detect many discrepancies.
- (d) I am sorry we shall have to quit our old home.
- (e) The one which I name here is a very easy puzzle to solve.
- (f) The horse is blind, I am afraid.

LOUISA F. REDMOND.

7—A JUG RIDDLE.

Suppose a friend and I purchased eight gallons of liquor and want to divide the liquor equally between us, and only having five, three and eight gallon measures. Louisa F. Redmond wishes to know which of her cousins could divide the liquor.

8—QUOTATION PUZZLE.

“Music is a thing of the soul; a rose-lipped shell that murmurs of the eternal sea; a strange bird singing the songs of another clime.” The name of the author may be found by taking a letter from each of the following musical instruments:—Harp, organ, violin, flute, guitar, piano, melodeon.

ADA ARMAND.

9—LADDER.

Diagram.

- | | | |
|-----------|---|--------------------------|
| o | o | |
| o o o o o | o | Initials, heedful. |
| o o o o o | o | Finals, to start. |
| o o o o o | o | 1st rung, a mistake. |
| o o o o o | o | 2nd rung, forward. |
| o o o o o | o | 3rd rung, to overflow. |
| o o o o o | o | 4th rung, to disqualify. |
| o | o | |

ARTHUR T. REEVE.

10—FRUITS ENIGMATICALLY EXPRESSED.

- (a) A consonant, to tap, and a vowel.
- (b) A consonant, and everyone.
- (c) A kind of grain, and a letter.
- (d) A letter, and devoured.
- (e) A dog, a consonant, and an insect.

HENRY REEVE.

11—ANAGRAM.

The editor took the stand, and delivered a fine discourse
On the merits of his paper, and was cheered till
the people were hoarse;
“So, farming friends,” he finished, “You are
sure to satisfied be
If you just step out some evening and but
plague C.”

ADA ARMAND.

Answers to October Puzzles.

- 1—For of all sad words of tongue or pen,
The saddest are these, "It might have been."
- 2—Saws.
- 3—Finger ring.

4—
 A
 A G E
 A G R E E
 A N C I E N T
 A D D I C T I O N
 A G R I C U L T U R E
 A F F I L I A T E
 A C E T I F Y
 A M U S E
 A R M
 E

- 5—This world is but the rugged road
Which leads us to the bright abode
Of peace above;
So let us choose that narrow way
Which leads no traveler's foot astray
From realms above.
- 6—Opposition is the life of trade.
- 7—Procrastination.

8—
 P
 P A R
 C A R A T
 H A N I P E R
 R I G E D
 C O D
 N

9— R E C T A N G L E
 E O
 M V
 A E
 R R E M A I N D E R
 K E
 A L
 B I
 L G
 E I
 A O
 V U
 E S A L V A T I O N

A Philosophical Answer.

The value of services rendered by skilled workmen should not be calculated by the time it takes to perform the task. Allowance should be made for the weeks and months spent by thorough workmen in learning how to do their work well. This knowledge has its money value.

While Judge Tracy was on the circuit, going from court his trace broke. The judge spent a half hour trying to mend it, but to no purpose. His patience was exhausted, and he expressed his vexation in words. A negro came along, and the judge told him of his trouble.

The negro let out the trace, and cut a hole in it, and the job was done.

"Why," said the judge, "could I not have thought of that?"

"Well, marster," said the negro, "don't you know some folks is naturally smarter than others?"

"That's so," said the judge. "What shall I pay you for fixing my trace?"

"Well, marster, fifty cents will do," said the negro.

"Fifty cents!" said the judge. "You were not five minutes at it."

"I do not charge you fifty cents for doing it," said the negro. "I charge you twenty-five cents for doing it and twenty-five cents for knowing how to do it."

The little folks have a wonderful gift of expression, even if their vocabulary is somewhat limited. Little "Ricy," an up-town toddler, wasn't feeling very well, and his mother solicitously inquired what was the matter. "I feel as if some of me was dead," was the expressive reply.

A Curiosum.

BY DR. B. L. CITTINSKI.

The following is a translation of the petition of the "left hand," addressed to parents and pedagogues, from the pen of a no less distinguished personage than Benjamin Franklin. It was published in a little French almanac, entitled "Etrenne a' l' Humanite," in the year 1787, just a century ago:

"I take the liberty of addressing myself to all the friends of youth, and to beseech them to have compassion upon my misfortune, and help me to conquer the prejudice of which I am the innocent victim.

I am one of two twin sisters of our family. The two eyes in the head do not resemble each other more completely than I and my own sister do.

My sister and I could perfectly agree together if it was not for the partiality of our parents, who favor her to my great humiliation.

From my infancy I was taught to look upon my sister as if she was of a higher rank than I. My parents allowed me to grow up without any instruction, while they did not spare any cost on the education of my sister. She had professors of writing, drawing, music and other useful and ornamental performances, but if I happened to touch a pencil, a pen or a needle, I was severely reprimanded, and more than once I was beaten for being clumsy.

It is true that my sister likes my company and does not despise my co-operation occasionally, but always claims superiority, and only calls upon me when she needs my assistance.

Now, ladies and gentlemen, I do not believe that my complaints are dictated by vanity; oh, no! they have a more serious basis.

My sister and I are charged by our parents with the work of procuring the necessities of life. Now, if some sickness should befall my sister, and make her unable to work (and I tell you in confidence, my sister is subject to cramps, rheumatism, gout and many other ailments), what will become of our family? Alas! we shall perish in misery, for I will not be able even to draw up a supplication for obtaining charity. Even for this present petition I have been obliged to use a stranger's hand.

Oh! how my parents will yet regret having established such an unjust distinction between two sisters who resemble each other so nearly.

Will you be so kind, ladies and gentlemen, as to make my parents realize how unjust it is to be so partial in their treatment of their children, and how necessary it is for them to bestow their care and affection upon their offspring in equal measure.

I am, ladies and gentlemen, with the greatest respect, your most humble servant. "THE LEFT HAND."

"Yes, my hands are soft," said a dudish and conceited young fellow the other night in a small company, as he admiringly looked at those useless appendages that had never done a day's work. "Do you know how I do it?" he exclaimed, proudly. "I wear gloves on my hands every night to sleep in." "Do you sleep with your hat on, also?" asked a pert young woman. And the young fellow replied in the negative, and looked wonderingly because the company smiled.

"There is more pleasure in giving than in receiving," was the proverb a mother was trying to instill into a youthful mind. "That's true about easter oil, mother," was the answer she got.

Mutual Confidence between Mother and Child.

There is a way in which parents, mothers especially, may do harm to their children from want of forethought; that is, by not patiently listening to their confidences, sharing their little joys and sorrows, and making them feel that there is no one in the wide world like mother for playmate and companion. One deeply impressed in reference to this says: "It is really pitiful to see a good, conscientious mother resolutely shutting herself away from so much that is really best and sweetest in children's lives for the sake of tucking their dresses and ruffling their skirts. How surprised and grieved she will be to find her boys and girls at sixteen regard 'mother' chiefly as a most excellent person to keep skirts in order and make new dresses, and not as one to whom they care to go for social companionship!"

Yet before they are snubbed out of it by any repeated rebuffs, such as, "Run away; I'm too busy to listen to your nonsense;" "Do amuse yourselves with your doll and baby rags," etc., the children naturally go to their mother with all their little sorrows and pleasures; and if the mother can only enter into their plans how pleased and happy they are! Such a shout of delight I heard last summer from a lady's croquet-ground where her little children were playing: "O goody, goody! mamma is coming to play with us."

Pleasure in Simple Things.

There is hardly a more fortunate endowment than the power of finding pleasure in simple things. The heart which is the easiest satisfied is the happiest heart. When the finding of a flower in the field where one looked only for grass and rushes brings light to the eyes and a smile to the lips, when a chance meeting with a friend, a ramble in a country lane, a walk by the shore, or the coming of a letter which was not expected, makes the morning delightful, the possessor of the capacity for such enjoyments is to be congratulated.

We talk of the art of pleasing; the art of being pleased is equally as desirable, and almost equally as attractive. The pity of many a young life is that, before the gloom of early youth has faded, the liking for simple pleasures has been lost; and neither lad nor maiden is so much to blame for this as are they who are responsible for the upbringing which should have preserved simple tastes, and which missed its aim and defrauded its charges of a fortunate endowment. —Selected.

He Never Did.

A young lady of my acquaintance was once present at a musical party where the lion of the evening was a celebrated flute player. After he had performed, this young lady was presented to him, and there was a general silence in the room, which added to her natural embarrassment. She felt that she must say something pleasant, so, with a happy smile, she exclaimed: "Oh, how delightfully you play! Do you ever accompany yourself on the piano?" The artist looked at his flute, then at his fingers, shrugged his shoulders, bowed low and said: "Never!" After a moment she saw why everybody laughed—[Harper's Weekly.

Sympathetic clergyman to widowed parisher— "Was poor Brother Saltonstall prepared to go?" Consoled widow—Yes, indeed. He was insured in a half dozen companies."

PRIZE LISTS.

List of Prizes Obtained by Prominent Stock Breeders at the Leading Canadian and American Exhibitions.

Breeders who have not yet sent in a report can have their lists of prizes inserted in the December issue at the following rates:
From one to three prizes, 50 cts.; four prizes and upwards, one dollar. The above rate will be charged for each exhibition.

HORSES.

Beaconsfield Stable, Sherbrook, P. Q., Thoroughbreds.

The Eastern Townships Exhibition, Sherbrook, P. Q.—Diploma for stallion; 1st for gelding 4 years old; 1st for brood mare and foal; 1st for foal 1887; diploma for female any age; 1st for filly 2 years old.

Kenny & Broad, Lindsay, Ont., Thoroughbred.—The Dominion and Industrial Exhibition, Toronto—1st for stallion 4 years old and upwards; silver medal for stallion any age.

R. H. Pope, Cookshire, P. Q., General Purpose.—The Eastern Townships Exhibition, Sherbrook, P. Q.—1st, gelding or filly, 3 years; 1st, matched pair heavy draft; 1st, saddle horse; 1st, pony in harness.

John N. Jenks, Barnston, P. Q., Gen'l Purpose.—Stanstead Live Stock Association, Stanstead Plain, P. Q.—1st, stallion, 3 years old; 2nd, brood mare, with foal by her side; 2nd, foal of 1887.

The Independent Agricultural Association of Stanstead and Compton Counties, at Coaticook—1st, brood mare and foal; 2nd, single driving horse.

Eastern Townships Agricultural Ass'n, Sherbrook, P. Q.—1st, roadster, mare or gelding, 154 hands or under; 2nd, general purpose stallion, 3 years old.

Stanstead Co. Agricultural Fair, at Ayers' Flat—1st, lady driver; 1st, gelding or filly, 3 years old; 2nd, brood mare and foal under 1,100 lbs.

J. H. Ives, Stanstead, P. Q., General Purpose.—Eastern Townships Exhibition, Sherbrook, P. Q.—1st, general purpose stallion, also diploma in same class, and sweepstakes prize of silver medal, in classes one, two and three.

H. Fortner, Farnhill, Ont., Carriage.—Western Fair, London—3rd for carriage stallion 3 years old.

Southern Counties Fair, St. Thomas—3rd for carriage stallion 3 years old.

Mr. Read, Sherbrook, P. Q., Heavy Drafts.—The Eastern Townships Exhibition, Sherbrook, P. Q.—1st for filly or gelding 3 years old.

Robt. Ness, Howick, P. Q., Heavy Drafts.—The Eastern Townships Exhibition, Sherbrook, P. Q.—1st and 2nd for stallion 4 years old; 2nd for stallion 2 years old.

Robt. Ness, Jr., Howick, P. Q., Heavy Drafts.—The Eastern Townships Exhibition, Sherbrook, P. Q.—1st for stallion 3 years old; 1st for stallion 2 yrs. old; 1st for stallion 1 year old; 1st for filly 2 years old; silver medal classes 5 and 6.

James I. Davidson, Balsam, Ont., Clydes.—The Dominion and Industrial Exhibition, Toronto—Special prize of \$60 for best Canadian-bred stallion and 5 of his progeny; also medal given by the American Clydesdale Association for best Canadian bred horse.

Ontario Central Association, Port Perry, Ontario—2nd for heavy draft imported Clydesdale; 2nd for 2-year-old; 1st for yearling filly.

Graham Bros., Claremont, Ont., Clydes.—The Dominion and Industrial Exhibition, Toronto—1st for heavy draft stallion 4 years old; 1st for stallion 3 years old; 1st for entire yearling colt; 1st for filly 2 years old.

E. A. Brickman, Rednersville, Percherons.—The Dominion and Industrial Exhibition, Toronto—1st for draft mare 3 years old and upwards; 2nd for foal of 1887; silver medal for best mare any age.

Wm. Sadler, Galt, Ont., Suffolk Punch.—The Dominion and Industrial Exhibition, Toronto—1st and silver medal. "Rosehill," 3-year-old stallion, was ruled out for over-weight; 1st prize car and \$10 was awarded to him as a special on the recommendation of the judges.

Joseph Beck, Thorndale, Suffolk Punch.—The Dominion and Industrial Exhibition, Toronto—3rd for draft stallion 3 years old; 1st for draft mare 3 years old; silver medal for best mare any age.

CATTLE.

Bow Park Herd of Shorthorns, Brantford.

Iowa State Fair—2nd for bull, two years old; 1st and sweepstakes, best female any age; grand sweepstakes, beef breeds.

Minnesota State Fair—1st for bull, two years old; 1st and 2nd for cows; 1st for 2-year-old heifer; grand sweepstakes, beef breeds, same herd as at Iowa.

Dakota State Fair—Grand sweepstakes, beef breeds, same herd as at Iowa.

John Dryden, Brooklin, Durhams.

Provincial Exhibition, Ottawa—2nd for bull, 3 years old; 2nd for bull, 1 year old; 1st for bull calf; 1st, 2nd and 3rd for cows; 2nd for cow, 3 years old; 1st and 2nd for heifer, 2 years old; 1st for heifer, 1 year old; 1st and 3rd for heifer calf; 1st for best female, any age; 1st for best imported herd.

The Dominion and Industrial Exhibition, Toronto—2nd for bull, 1 year old; 2nd for bull calf; 3rd for heifer, 2 years old; 2nd for heifer, 1 year old; 3rd for best 4 calves under one year, bred and owned by exhibitor.

J. S. Williams, Knowl'on, P. Q., Durhams.

The Eastern Townships Exhibition, Sherbrook, P. Q.—1st for bull 3 years old; diploma for calf any age; 3rd for cow, 1883; 2nd, 188 : 1st for heifer, 1886; diploma for best female.

J. F. Learned, Cookshire, P. Q., Durhams and Aberdeen-Angus.

The Eastern Townships Exhibition, Sherbrook, P. Q.—3rd for bull 1 year old; 3rd for bull calf; 1st for cow, 1883; 2nd for Aberdeen-Angus bull.

Hugh Thomson, St. Mary's, Ont., Durhams.—Western Fair, London—1st for yearling bull.

R. H. Pope, Cookshire, P. Q., Herefords and Aberdeen-Angus.

The Eastern Townships Exhibition, Sherbrook, P. Q.—2nd, bull, 1884; 2nd, bull, 1886; 1st, bull, 1887; 3rd, cow, 1883; 3rd, cow, 1884; 2nd, cow, 1885; 3rd, cow, 1886; 1st, Aberdeen-Angus bull, 1884; 2nd bull, 1886; 1st, cow, 1883; 2nd, cow, 1884; 2nd, cow, 1885; 2nd, heifer.

M. H. Cochrane, Hillhurst, P. Q., Herefords and Aberdeen-Angus and Jerseys.

The Eastern Townships Exhibition, Sherbrook, P. Q.—3rd, Hereford bull, '86; 3rd, bull, '87; 1st, cow, '83; 2nd, cow, '84; 3rd, cow, '85; 1st, cow, '86; 1st, Aberdeen-Angus bull, '86; diploma, bull any age; 2nd, cow, '83; 1st, cow, '85; 1st, heifer, '88; 2nd, heifer, '87; diploma, best female; diploma, herd; 1st, Jersey bull, '84; 1st, bull, '86; diploma, bull any age; 1st, cow, '84; 1st, heifer, '85; 1st, heifer, '86; diploma, best female; diploma, herd.

Wm. Kough, Owen Sound, Ont., Galloways.

Dominion and Industrial Exhibition, Toronto—Special herd prize, silver medal, for one bull and 4 females of any age; 1st for bull, 3 years old; 2nd for bull 2 years old; 3rd for bull calf; 3rd for cow 4 yrs. old; 1st for heifer 2 years old; 2nd for yearling heifer; 1st for heifer calf; bronze medal for herd of 1 bull and 4 females over 1 year.

Provincial Exhibition, Ottawa—1st for bull, 3 yrs. old; 2nd for bull 2 years old; 2nd for bull calf; 2nd for cow; 1st for heifer 2 years old; 1st and 2nd for heifer 1 year old; 1st for heifer calf under 1 year; also for best female of any age.

A. C. Hallman & Co., New Dundee, Ont., Holsteins.

Western Fair, London—1st and diploma for bull 2 years old; 1st for bull 1 year old; 1st for bull calf; 1st and 2nd for cow 3 years old; 1st and 2d for heifer 1 year old; 1st and 2nd for heifer calf; diploma for herd, 4 females and 1 male.

Francis Silverthorn, Summerville, Ont., Holsteins.

Dominion and Industrial Exhibition, Toronto—Three prizes.

George A. Pierce, Stanstead, P. Q., Holsteins.

The Eastern Townships Exhibition, Sherbrook, P. Q.—1st, bull, '84; 1st, bull, '86; 1st, bull, '87; diploma, any age; 1st, cow, '83; 1st, cow, '84; 1st, heifer, '85; 1st, heifer, '86; diploma, female herd; diploma, herd.

T. Guy, Oshawa, Ont., Ayrshires.

Toronto Industrial Exhibition—1st for bull, two years old, and silver medal for best bull of any age; 2nd for cow; 3rd for cow, three years old; 3rd for cow, two years old; 1st for heifer calf; 1st for best herd.

Provincial Exhibition, Ottawa—1st for bull, two years old; 1st and 2nd for yearling bulls; 1st for cow, three years old; 2nd for heifer, two years old; 1st for yearling heifer; 1st for heifer calf; 1st herd prize.

Ontario Central—Six first and six second; also the herd prize and silver medal.

Michael Ballantyne, St. Mary's, Ayrshires.

Western Fair, London—1st for bull 2 years old; diploma for best bull of any age.

Wm. Rodden, Plantagenet Springs, Ont., Ayrshires.

Provincial Exhibition, Ottawa—Four prizes on young bulls and heifers.

Co. Prescott Exhibition—1st for pure bred milk cow; 1st for bull.

Geo Hill, Delaware, Ont., Ayrshires.

Dominion and Industrial Exhibition, Toronto—2nd for bull 1 year old; 2nd for bull calf; 1st for heifer 1 year old.

T. G. Nankin, Ottawa, Ayrshires.

Provincial Exhibition, Ottawa—2nd for bull 2 yrs. old; 3rd for cow 3 years old and upwards; 3rd for heifer 2 years old.

James Drummond, Petite Cote, Montreal, Ayrshires.

Quebec Exhibition—1st for bull over 3 years; 3rd for bull 2 years old; 1st for bull 1 year old; 1st for cow over 4 years; 3rd for cow 3 years old; 1st for heifer 2 years old; 2nd for heifer 1 year old; 1st for herd, bull and 4 females; 3rd for milk-giving cow, 4 milkings, average 44 lbs. per day.

Provincial Exhibition, Ottawa—2nd for milk cow; 3rd for cow 3 years old; 1st for cow 2 years old; 3rd for cow under 1 year; 2nd for milk cow by test.

Thomas Irving, Montreal, Ayrshires.

The Eastern Townships Exhibition, Sherbrook, P. Q.—1st, bull, '84; 1st, bull, '85; 2nd, bull, '86; diploma, bull, any age; 1st, cow, '83; 1st, cow, '84; 1st, heifer, '85; 1st, heifer, '86; 1st, heifer, '87; diploma, best female; diploma, herd.

W. A. Hale, Sherbrook, P. Q., Ayrshires.

Eastern Townships Agricultural Ass'n, Sherbrook—2nd for cow of 1883 or previous.

Oaklands Herd of Jersey Cattle, of Hamilton, Ont.

Dominion and Industrial Exhibition, Toronto—1st for herd of Jersey cattle; 1st (special) for herd of Jersey cattle; 1st for cow, 4 years and upwards; 1st for heifer calf, under 1 year; 1st for yearling bull; 2nd for milk-giving cow; 2nd for bull, 2 years; 2nd for cow, 3 years; 3rd for bull under 1 year; 3rd for cow, 3 years; 3rd for milk-giving cow.

Provincial Exhibition, Ottawa—Silver medal for bull of any age; 1st for herd; 1st for cow 3 years old; 1st for heifer calf, under 1 year; 1st for bull, 3 years old or upwards; 1st for bull, 2 years; 1st for bull, 1 year old; 2nd for cow; 2nd for bull calf, under 1 yr.; 3rd for cow, 3 years old; 3rd for heifer calf, under 1 year.

Great Central Fair, Hamilton—Diploma for bull, with three of his get; diploma for bull, any age; 1st for bull, 3 years and over; 1st for cow; 1st for bull calf; 1st for bull, 1 year; 1st for bull, 2 years; 1st for heifer, 1 year; 2nd for bull, 3 years and upwards; 2nd for bull calf, 1 year; 2nd for bull calf; 2nd for cow, 3 years; 2nd for heifer, 2 years; 2nd for cow; 2nd for heifer calf; 2nd for herd.

Samuel Smoke, Canning, Ont., Jerseys.

Western Fair, London—1st for bull 3 years old and upward; 1st for bull, 2 years old; 1st and 2nd for bull calf; diploma for bull of any age; 1st and 2nd for cow 4 years old and upward; 1st for cow 3 years old; 1st and 2nd for heifer 2 years old; 1st and 2nd for heifer 1 year old; 1st and 2nd for heifer calf; diploma for best herd of bull and 4 females.

W. J. Rudd, Arkell, Ont., Devons.

Dominion and Industrial Exhibition, Toronto—Gold medal for herd; 2nd for bull, 3 years; 1st for bull, 2 years; 2nd for bull calf; 1st and 2nd for cow, 3 years; 1st for cow, 3 years; 3rd for heifer, 2 years; 1st and 3rd for heifer, 1 year; 2nd for heifer calf; silver medal for herd.

Provincial Exhibition, Ottawa—2nd for bull, 3 years; 1st for bull, 2 years; 1st for bull calf; 1st for cow, 4 years; 1st for cow, 3 years; 1st and 2nd for heifer, 1 year; 2nd for heifer calf; diploma, female of any age.

SHEEP.

John Dryden, Brooklin, Shropshire Downes.

The Dominion and Industrial Exhibition, Toronto—1st for ram, 2 shears and over; 1st and 2nd for shearing ram; 1st and 3rd for ram lamb; 1st for two ewes, 2 shears and over; 1st and 3rd for two shearing ewes; 3rd for two ewe lambs; 1st for pen (1 ram, 2 ewes) 2 shears and over, 2 shearing ewes, 2 ewe lambs.

Provincial Exhibition, Ottawa—2nd for ram, 2 shears and over; 1st, 2nd and 3rd for shearing ram; 1st, 2nd and 3rd for ram lamb; 1st and 3rd for ewes, 2 shears and over; 1st and 2nd for shearing ewes; 1st and 3rd for ewe lambs; Prince of Wales prize pen for 1 ram any age, 2 ewes, 2 shears and over, 2 shearing ewes and 2 ewe lambs.

John Jackson, Abingdon, Southdowns.

The Dominion and Industrial Exhibition, Toronto—1st, aged ram; 2nd, shearing ram; 1st and 2nd, ram lambs; 2nd, aged ewe; 2nd, shearing ewe; 1st on flock.

Provincial Exhibition, Ottawa—1st and 2nd, aged rams; 2nd and 3rd, shearing rams; 1st and 2nd, ram lambs; 1st, 2nd and 3rd, aged ewes; 1st, shearing ewe; 1st and 3rd, ewe lambs; 1st for imported flock, silver medal; silver medal for flock, Canadian bred.

Great Central Exhibition, Hamilton—1st, aged ram; 1st, shearing ram; 1st and 2nd, ram lambs; 2nd, aged ewe; 1st and 2nd, shearing ewes; 1st, ewe lambs; 1st, flock.

Collingwood Exhibition—1st, aged ram; 1st, shearing ram; 1st and 2nd, ram lambs; 1st and 2nd, aged ewes; 1st and 2nd, shearing ewes; 1st and 2nd, ewe lambs; 1st and 2nd, flock.

St. Catharines Exhibition—1st, aged ram; 1st, shearing ram; 1st and 3rd, ram lambs; 1st, aged ewe; 1st and 2nd, shearing ewes; 1st, ewe lamb; 1st, flock.

Smithville Exhibition—1st, aged ram; 1st, shearing ram; 1st and 2nd, ram lambs; 1st, aged ewe; 1st and 2nd, shearing ewes; 1st, flock, open to all breeds.

Wellandport Exhibition—1st, aged ram; 1st, shearing ram; 1st, 2nd and 3rd, ram lambs; 2nd and 3rd, aged ewes; 1st, 2nd and 3rd, shearing ewes; 1st, 2nd and 3rd, ewe lambs; 1st, fat sheep; 1st, flock.

Abingdon Exhibition—1st, aged ram; 1st, shearing

ram; 1st, 2nd and 3rd, ram lamb; 1st, 2nd and 3rd, aged ewes; 1st, 2nd and 3rd, shearing ewes; 1st, 2nd and 3rd, ewe lambs; 1st, fat sheep.
All the above shows were open to the world for competition.

Robt Marsh, Richmond Hill, Ont., South-downs.
Industrial, Toronto, six prizes; *Western Fair, London*, eight prizes; *Great Central, Hamilton*, five prizes; *Lansing Fair*, eight prizes; *Newmarket Co. Fair*, ten prizes; *Markham Co. Fair*, four prizes; *Woodbridge Co. Fair*, fourteen prizes; *Bradford, S. Simcoe*, eight prizes. In all, 74 prizes, 44 of which were firsts. They also took six pen prizes in their own class, and five sweepstake prizes where all breeds of sheep competed.

Smith Evans, Gourock, Oxford Downs.
Dominion and Industrial Exhibition, Toronto—2nd for ram, 2 shears and over; 2nd for ram lam b 3rd for 2 ewes, 2 shears and over; 3rd for 2 shearing ewes; 2nd for 2 ewe lambs; 3rd for pen.
Western Fair, London—1st, 2nd and 3rd for ram, 2 shears and over; 1st and 2nd for shearing ram; 1st, 2nd and 3rd for ram lamb; 1st and 2nd for 2 ewes, 2 shears and over; 1st and 2nd for 2 shearing ewes; 1st and 2nd for 2 ewe lambs; diploma for pen.
Central Fair, Hamilton—2nd for ram, 2 shears and over; 2nd for ram lamb; 2nd for 2 ewes, 2 shears and over; 2nd for 2 ewe lambs.

FIGS.

J. G. Snell & Bro., Edmonton, Ont., Berkshire.

The Dominion and Industrial Exhibition, Toronto—1st for boar over 2 years; 2nd for boar over 1 and under 2 years; 1st for boar over 6 months and under 12 months; 2nd for boar under 6 months; 1st and 3rd for sow over 2 years; 1st and 3rd for sow over 1 year and under 2 years; 1st and 3rd for sow 6 months and under 12 months; 2nd for sow under 6 months; 1st for herd, boar and 2 sows; 1st (special) for best boar and 2 sows of any breed.
Provincial Exhibition, Ottawa—1st and 3rd for boar over 2 years; 3rd for boar over 1 and under 2 years; 1st and 2nd for boar 6 and under 12 months; 1st and 2nd for sow over 2 years; 1st and 3rd for sow over 1 year and under 2 years; 1st and 3rd for sow 6 and under 12 months; 1st for sow under 6 months; 1st for boar and 2 sows (Canada breed); 1st for boar and 2 sows (imported); diploma and silver medal for boar any age; diploma and silver medal for sow any age.
Central Exhibition, Hamilton—We won every 1st prize offered for Berkshires.

J. S. Williams, Knowlton, P. Q., Berkshires.

The Eastern Townships Exhibition, Sherbrooke, P. Q.—2nd for sow 1 year and under; 2nd, sow over 6 mos.; 2nd, sow over 6 mos.
T. G. Nankin, Ottawa, Yorkshire.
Provincial Exhibition, Ottawa—Yorkshire or other large breeds: 2nd for boar over 2 years; 1st for boar over 1 and under 2 years; 1st for boar under 6 mos.; 2nd for boar under 6 mos.

Joseph Featherston, Credit, Ont., Yorkshire and Essex.

The Dominion and Industrial Exhibition, Toronto—2nd, Yorkshire boar, over two years; 1st, boar over one and under two years; 1st, boar under twelve months; 2nd, boar under six months; 2nd, sow under two years; 1st and 2nd, sow under twelve months; 3rd, sow under six months; 1st, boar and two sows any age. 1st and 2nd, Essex boar over two years; 1st and 2nd, boar over one and under two years; 1st and 2nd, boar under twelve months; 1st and 2nd, boar under six months; 1st and 2nd, sow over two years; 1st and 2nd, sow over one and under two years; 1st and 2nd, sow under twelve months; 1st and 2nd, sow under six months; 1st and 2nd, best boar and two sows any age.
The Provincial Exhibition, Ottawa—1st, Yorkshire boar over two years; 3rd, boar over one year and under two years; 1st and 3rd, boar under twelve months; diploma for best boar any age; 2nd, sow under twelve months. 1st and 2nd, Essex boar over two years; 1st and 2nd, boar over one and under two years; 1st and 2nd, boar over twelve months; 1st and 2nd, boar under six months; 1st and 2nd, sow over two years; 1st and 2nd, sow over one and under two years; 1st and 2nd, sow under twelve months; 1st and 2nd, sow under six months; diploma for best boar; diploma for best sow; silver medal for best boar and three sows.
Central Fair, Hamilton—1st and 2nd, for Yorkshire boar over one year; 1st and 2nd, for boar under one year; 2nd, boar under six months; 1st and 2nd, for sow under twelve months. 1st and 2nd, Essex boar over one year; 1st and 2nd, boar under twelve months; 1st and 2nd, boar under six months; 1st and 2nd, sow over one year; 1st and 2nd, sow under twelve months; 1st and 2nd, sow under six months.
Northern Exhibition, Walkerton—15 first and 10 second prizes.

John Fishleigh, Ingersoll.

Western Fair, London—2nd, aged boar; 2nd and 3rd, aged sows; 3rd, young sow, under six months.
Southern Counties Fair, St. Thomas—1st, aged boar; 2nd and 3rd, young boar, under one year; 1st, 2nd and 3rd, aged sows; 1st and 2nd, sows under one year.
Ingersoll Exhibition—1st and 3rd, aged boar; 1st, boar under seven months; 1st and 3rd, aged sows.
Kintore Exhibition—1st, aged boar; 1st, young boar under one year; 1st and 2nd, aged sows; 1st, sow under one year.

POULTRY.

H. E. Wallace, Woodstock, Ont.
Western Fair, London—1st for Pekin Ducks.
Wm. McNeil, London, Ont.

The Dominion and Industrial Exhibition, Toronto—1st for Dark Brahma hen; 2nd for White Cochin cock and 2nd for hen; 1st for Black Cochin cock and 1st for hen; 3rd for Lanashan hen; 2nd for golden-pencilled Hamburg cock and 3rd for hen; 1st for silver-spangled cock and 2nd for hen; 2nd for golden-spangled cock; 2nd for silver-spangled cock and 1 t for hen; 3rd for Black Spanish hen; 2nd for white-crested black Poland cock and 2nd for hen; 1st for silver Poland cock and 1st for hen; 1st for golden Poland cock and 2nd for hen; 1st for Poland, any other variety, cock, and 2nd for hen; 1st for black rose-comb Bantam cock and 2nd for hen; 2nd for golden Sebright cock and 1st for hen; 1st for silver Sebright cock. 2nd for hen; 2nd for Japanese cock. 1st for hen; silver medal for best collection; 1st for Buff Cochin cockerel, 1st for pullet; 1st for White Cochin cockerel, 1st for pullet; 1st for Black Cochin cockerel, 1st for pullet; 1st for golden-pencilled Hamburg cockerel, 2nd for pullet; 1st for silver-spangled cockerel, 1st for pullet; 1st for golden-spangled cockerel; 1st for white-spangled cockerel, 1st for pullet; 1st for silver Poland cockerel, 1st for pullet; 1st for golden cockerel, 1st for pullet; 1st for any other variety Polands, cockerel, 1st for pullet; 1st for golden Sebright Bantam cockerel, 1st for pullet; 1st for silver Sebright cockerel; 1st for Japanese cockerel, 2nd for pullet; 2nd for Pekin cockerel, 2nd for pullet.

F. Wixson, Ingersoll, Ont.

The Dominion and Industrial Exhibition, Toronto—1st, Black Minorca cock; 1st, pullet; 1st, white Leghorn hen, and very highly commended; very highly commended on cock; 1st, brown Leghorn hen; 1st, black Leghorn cock; 1st, hen; 1st, cock; 1st, pullet, and every diploma offered for breeding pens in the Leghorn classes.
Western Fair, London—1st, black Minorca, old; 1st for black Minorca, young; 2nd and 3rd, white Leghorns, old; 2nd, brown Leghorns; 1st, black Leghorns, old; 1st, black Leghorns, young, and every diploma for pens in the Leghorn classes.
Central Exhibition, Hamilton—1st, white Leghorn, old; 1st, brown Leghorn, old; 1st and 2nd, black Leghorns, old; 1st and 2nd, black Leghorns, young.

J. W. Bartlett, Lambeth, Ont.

Western Fair, London—1st on dark Brahmas; 1st and 2nd on dark Brahma chicks.

NOTICES.

A ROMANCE OF RURAL LIFE.—“Widower Jones,” the new story by Edmund E. Sheppard, editor and publisher of the Toronto News and author of the “Farmer’s Editor’s Sketches” and “Dolly—The Young Widder up to Felder’s,” which were popular features of the Toronto Weekly News, will be begun on the 21st of November in the Canadian Fireside Weekly. The Fireside Weekly is a first-class story paper, which is rapidly achieving a large circulation in Canada. For sale by all newsdealers, price 5 cts. a copy. Sample copies can be had free by addressing the Fireside Weekly, No. 9, Adelaide street west, Toronto.

MINNIE HAUKE, THE CELEBRATED PRIMA DONNA, ORDERS A KNABE PIANO.—Messrs. Wm. Knabe & Co.—Gentlemen: The Grand Piano you furnished me for my concert tour just ended has still further convinced me of the superiority of your Pianos. They are indeed unequalled, and have determined, therefore, to purchase the above Grand for my London residence, and have directed my agent to make the necessary pecuniary arrangements with you. Please make shipment by early steamer to my address, London, England, care of Messrs. Metzler & Co., and believe, your sincere friend, MINNIE HAUKE.

From a personal knowledge of the character of the work done in the Forest City Business College by its proprietors, Messrs. Westervelt & York, we have no hesitation in saying that young men seeking a College in which to receive a thorough drilling for business, cannot do better than place themselves under their instruction. The facilities of the institution are complete.

NORTHERN EXHIBITION.—Mr. Wm. Rivers, of Walkerton, favors us with the following: The eleventh annual exhibition, of which a brief description is given, was held at Walkerton, from the 4th to the 7th of Oct. It was one of the most successful ever held here in regard to exhibits, but owing to the wet weather, which was badly needed for everything, except to the small finances of the exhibition; but, notwithstanding, there were about 8,000 people present on Thursday afternoon, and all seemed satisfied with the management, etc. The horse stalls were all

filled so that some had to be kept in private stables. All classes were well represented, except that of agricultural teams, of which there was rather a small turnout.

A copy of the New York “Illustrated London News” has come to hand, which we are informed is a *fac simile* of the world-renowned Illustrated London News, of England, the same plates being used for both. This is indeed a valuable acquisition to the reading public of America, who certainly will not fail to appreciate the exquisite cuts contained within its pages. Such skill and enterprise deserve encouragement, and the exceedingly reasonable price (only four dollars per annum in advance), places it within the reach of every household. It is a weekly issue.

Stock Notes.

We advise any of our readers intending to start or increase their herds, to attend the dispersion sale of Mr. Ballachey’s Shorthorns, near Brantford, Ont. Mr. B. is retiring from farm life, and every animal offered will be sold to the highest bidder. Mr. B. says he does not expect to get nearly what he paid in cash for the cows, but fetch what they will, they must be sold.

Wm. Rennie, Toronto, reports the following sales of recently imported Clydesdale horses:—To James Cottingham, Ormstown, P. Q., yearling colt, “Gallant Scott,” vol. X; sire, “Gallant Lad” (2781), sire of dam, “Lorne” (499.) To James Brown, Toronto, yearling colt “Brisbane,” vol. X, sire, “Gallant Lad” (2781), sire of dam, “Never Mind Him” (557.) To Wilfred Hansel, Thorold, Ont., yearling colt, “Springhill Chief,” vol. IX, sire, “Springhill Darnly” (2429), sire of dam, “Conqueror” (196.) Also, the yearling filly “Hebe,” vol. IX, sire, “Merry Times” (3841), sire of dam, “Darnly” (222.) And the yearling filly “Flora Bell,” vol. X, sire, “Richard III” (1802), sire of dam, “Prince Alfred” (618.) To J. McLellan, Morden, Manitoba, the two-year old stallion “British Pride” (4883), sire, “Harold” (2854), sire of dam, “Blane” (76.) The balance of his Clydesdales are doing well.

If you want to be able to catch a horse at any time when loose outside, it is necessary to treat them gently, and never to chase or frighten them. If you give them some tit-bit, or pet them whenever you go into the pastures they will soon learn to come towards you. Kind treatment is vastly superior to punishing animals.

Two men have lost their lives, one in Massachusetts, the other in Connecticut, during the present year, from that loathsome disease known as glanders, says the New England Farmer. In both cases the disease was contracted while the men were attempting to cure the horses by treatment. The sooner horse men learn that this disease is incurable, and that a glandered horse is an unsafe animal to have around, the sooner the newspapers will cease to record cases of loss of human life from treating or handling such horses.

Prof. Law, of Cornell University, caused some cows to drink for several days from a stagnant pool of water that existed in a swale, and then examined the milk and found it full of living organisms. Then the water from the pool was examined, and the same living germs were found. Then the cows were examined, and they were found to be in a feverish condition, the result of their blood being charged with this living animalcule. Then some pure milk was taken and these same germs multiplied within a few hours so as to take full possession of the milk. After this test no one can dispute that living organisms may be introduced into milk by the using of improper food and drinks. It also shows that there is a close relation between good, pure water and fine and good-keeping dairy products. From a sanitary standpoint, the lives and health of the consumers are to a certain extent dependent upon the character of butter and milk.

Arthur Johnston, of Greenwood, Ont., sends us the following notes of his herd of Scotch Shorthorns:—At the late Toronto Industrial Exhibition the following prizes were won by animals sold from my herd, viz:—In aged bulls the second and third prize bulls were imported by me. In two-year old bulls the first, second, and third prize bulls went from the Greenwood Herd. In yearling bulls the first prize bull was bred by me. That is—of the nine bulls over one year old that won prizes, six were sold from the Greenwood Herd. Of the first prize herd, the bull and three of the females went from my herd. At the Provincial Show, held at Ottawa, three bulls, imported or bred by me, were shown, winning first prize in aged bulls; first prize in two-year old bulls; third prize in yearling bulls, and the sweepstakes for best bull of any age; thus 3 bulls from Greenwood Herd won three first prizes and one third prize. Mr. Johnston also informs us that Aberdeenshire is now free from pleuro-pneumonia, and a consignment of 8 young bulls, and about the same number of heifers, are daily expected by him from the well-known Kinellar Herd of Mr. Sylvester Campbell. Mr. Johnston also says he has on hand 11 exceedingly good young bulls of his own breeding, all by imported bulls, and mostly from imported cows—the great bulk of them fit for immediate service.

NEW ADVERTISEMENTS.

ADVERTISING RATES.

The regular rate for ordinary advertisements is 25c. per line, nonpariel, or \$3 per inch. No advertisement inserted for less than \$1. Special contracts for definite time and space made on application. Advertisements unaccompanied by specific instructions inserted until ordered out, and charged at regular rates.

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

SPECIAL NOTICE.

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

Fifth Annual Provincial Fat Stock Show

to be held in the city of TORONTO, at Grand's Repository, on Adelaide street, on **December 13th, 14th and 15th, 1887** under the auspices of the Agriculture and Arts Association of Ontario, and a Committee from Toronto.

Cattle to be in the building on the afternoon of Tuesday, December 13th.

Prize List will be issued immediately. Special arrangements will be made with the Railroad Companies to carry passengers and stock at reduced rates. Each prize List will contain a Railroad certificate for this purpose.

J. C. SNELL, President.
HENRY WADE, Secretary, Toronto.
Oct. 18th, 1887. 263-a

UNRESERVED AUCTION SALE

OF—
22 PURE-BRED SHORTHORNS, 10 GRADES, 12 HORSES, 40 SHEEP, 10 PURE BERKS, &C
Having decided to retire from farming, I will sell by auction on

Wednesday, December 21st, 1887, the whole of my **Stock, Implements, Wheat, Roots, Hay, Etc.** Cows were purchased by me since formation of Dominion Herd Book for the foundation of a herd, and have never been fed for show purposes, and are in a good, healthy, breeding condition. This is an opportunity that will not likely occur again for anyone to start or increase their herds. For catalogues apply to
263-b **JOHN BALLACHEY, Brantford, Ont.**

UNRESERVED AUCTION SALE
—OF—
PURE-BRED SOUTHDOWN SHEEP

A. D. PERLEY,
Proprietor of Evergreen Stock Farm, will sell by Public Auction, at his residence, 3¼ miles southwest of Paris, Brant Co., Ont., on
Wednesday, November 16th, 1887,

—ALL HIS—
IMPLEMENTS and STOCK,
—CONSISTING OF—

8 HORSES, 25 CATTLE and 25 PIGS; also 75 SHEEP composed of 40 Breeding Ewes, 22 Ewe Lambs, 3 Aged Rams and 10 Ram Lambs.

Anyone wishing pure-bred Southdowns should not miss this chance, as the above flock are of the same strain of blood as my father's (the late Daniel Perley), whose flock was so successful in the show ring for a number of years.

Twelve months credit on approved notes. 263-a

TO BREEDERS OF DRAUGHT HORSES

Notice is hereby given that at the annual meeting of the Dominion Draught Horse Breeders' Society, to be held in Clinton on the second Wednesday in December next, a recommendation will be presented by the Directors to change the present standard of registration to read as follows:

"All Imported Stallions of the Clydesdale and of the Shire Breeds which travelled in the Dominion prior to 1886, having pedigrees satisfactory to the Council, may be registered free of charge, and the progeny of such stallions shall be eligible for registry. With this exception, every application by entry must be accompanied by proof that the animal sought to be registered is the produce of a sire registered in either of the Clydesdale or Shire Stud Books of Great Britain, Canada or the United States, or of an imported horse registered in the Stud Book of this Society, and a dam with at least one cross of either of the breeds named."

Applications under the present standard of two crosses (either or both of which may be unregistered), will be accepted up till December 1st.

Blanks and further information may be had by addressing the Secretary.

By order of the Directors.

JOHN McMILLAN, President,
Constance P. O.
JAMES MITCHELL, Secretary,
Goderich, Ont.
263-a

The Baltic Double Heater

is the only stove that will burn hard or soft coal or wood with equal facility; heats room above, or an adjoining room; placed in hall it makes the whole house comfortable. The largest size is an unrivalled heater for schools, halls or churches.



The Family Key-stone

is the cheapest first class stove in the market; has three shelves, double cut centres, and all useful improvements.

The Art Argand

is the highest type of art stove made.

The Argand Ranges and Cooks

are revolutionizing cooking with coal; the patent fire pot is easier to manage, outlasts, and retains a fire day and night better than any range before made. It was a great success last year, and the new improvements are making it this.

If your dealer has not these stoves address us

The Oshawa Stove Company

MANUFACTURERS,
262-a **Oshawa, Ontario.**

THE E. B. EDDY MANUFACTURING CO. Ltd.

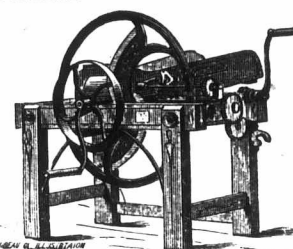
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262-f

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STRAW CUTTERS
Large or Small, for Power or Hand.

Large one three lengths or cut.
Small one two or one length of cut.

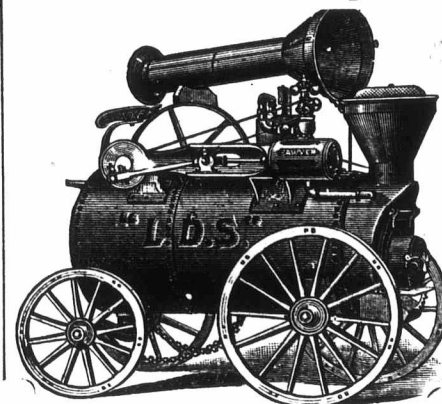
Prices to Suit the Times.

Root Pulper or Slicer.

Capacity by hand one bushel per minute.
Pulps or Slices Fine or Coarse to Suit.
Address **B. BELL & SON, St. George, Ont.**
261-f

"L.D.S." ENGINES

WOOD, COAL AND STRAW BURNERS,
PLAIN AND TRACTION.



"Grain Saver" and "Peerless" SEPARATORS.

"Pitts" Sweep-Powers, for 2, 4, 6, 8, 10 and 12 Horses.
Tread Powers, for 1, 2 and 3 Horses.

"ECLIPSE" LIGHT SEPARATORS.

Send for Illustrated Catalogue and Price List for 1887.
L. D. SAWYER & CO.,
HAMILTON, ONT.
257-j

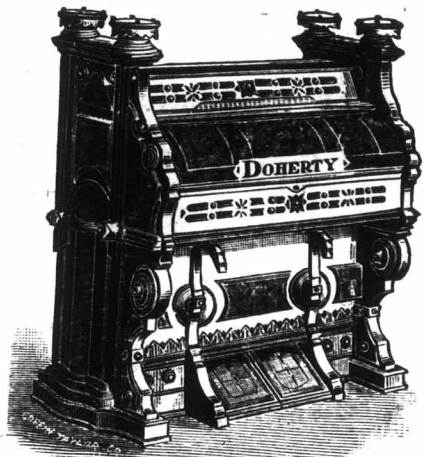
THE RACER.
THIN BACK, LANCE TOOTH, CROSS-CUT SAW.



It stands without a rival and is the fastest cutting Saw in the world. It has beaten the best Canadian and American made Saws 33 1/2 percent in every contest. Its superiority consists in its excellent temper. It is tempered under the Secret Chemical process, which toughens and refines the steel. It gives a finer and keener cutting edge, and will hold it twice as long as by any other process. We have the sole right for this process for the Dominion of Canada. None genuine that are not like the above cut, with registered Trade Mark, with the words "The Racer," and the Maple Leaf with our name. Price \$1.00 per foot.

CAUTION.—Beware of Counterfeits. There are inferior Counterfeits on the Markets. They are intended to be sold at a high price upon the reputation of his Saw. We will send to any address a Saw exactly like any Counterfeit, warranted equal in quality, or no sale, at 60c. per foot. Therefore do not be humbugged into paying a first-class price for a second-class saw. A fact to bear in mind that if the material and temper are not of the very best quality the shape of the teeth amounts to nothing. A saw, like a knife, will not cut fast without it will hold a keen cutting edge. We have cut off a 14-inch sound basswood log in eight seconds with this saw. Manufactured only by

SHURLY & DIETRICH.
Saw Manufacturers, GALT, ONT.
Mention this paper. 261-c



The "DOHERTY ORGAN"
maintains its supremacy over all others.
BUY THE BEST. 261-y

HARKNESS' BRONCHIAL SYRUP

For the cure of Colds, Coughs, Bronchitis, Croup, Whooping Cough, Hoarseness, Spitting of Blood, Pain or Oppression of the Chest, and all affections of the Lungs, Throat, Chest and Pulmonary Diseases. Where there is a tendency to consume upon the timely use of this preparation will affect a speedy cure. Price 25 and 50 Cents per Bottle.

MANUFACTURED ONLY BY
HARKNESS & CO.,
268 DUNDAS-ST., LONDON, ONT.

2nd-HAND MACHINERY.—Descriptive Catalogue sent free on application.
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AT THE
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were patronized by the following distinguished persons:

- The Marquis of Lorne and H.R.H. Princess Louise,**
 - Rt. Hon. Sir Robt. Bourke, Governor of Madras.**
 - Lady Douglas, of Victoria, B. C.,**
 - Sir Robert Affleck, and**
 - The British Government**
- a fine Organ for the use of the forces at Aldershot.

These Sales were made after a thorough test of all the Organs in the Canadian Court

W. BELL & CO., Guelph, Can.
CATALOGUE FREE. 263-y



PILES! PILES!

READ THIS STATEMENT.
PORT CREDIT, Ont., Feb. 9, 1884.

MR. LUMBERS:
Dear Sir,—I take pleasure in recommending your SURE CURE FOR PILES. When my ~~brother~~ came home with the remedy I was suffering greatly. I used it according to the directions, and I am now cured. I used only one package.
Yours truly,
MRS. W. M. NAISH.

LUMBERS' SURE CURE FOR PILES.

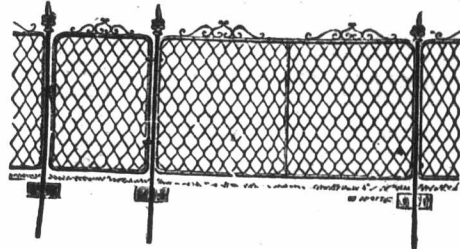
Ask your Druggist for it. Price \$1.
This medicine will be sent free to any address on receipt of price, by the proprietors.

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261-f 288 Carlton St., Toronto, Ont.
Send for our little book containing symptoms cause and cure of this disease.

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THE SWISS IMPORTING CO., 241 Broadway, N. Y.
263-a



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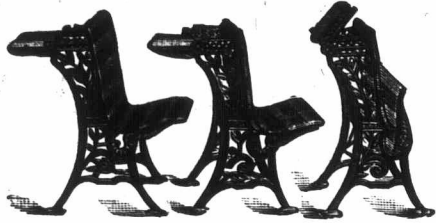
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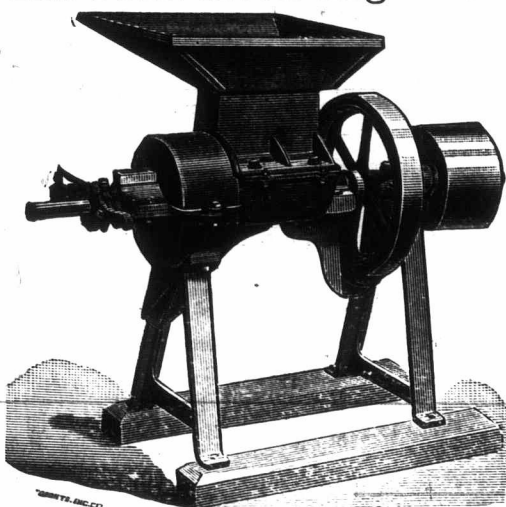
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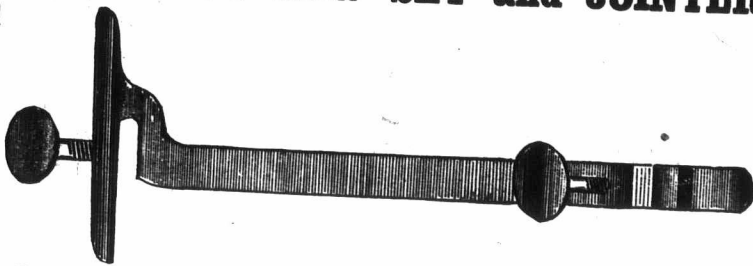
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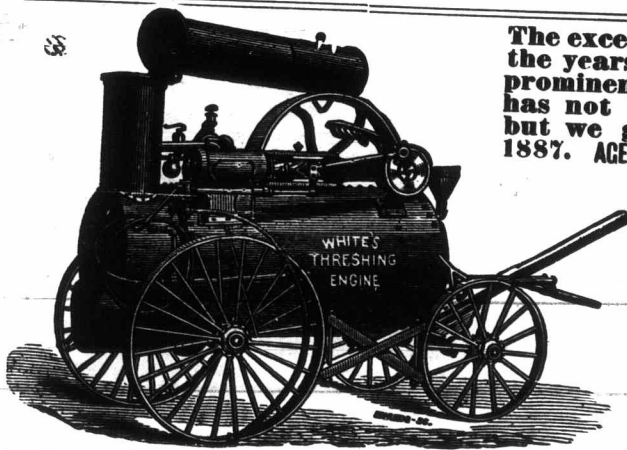
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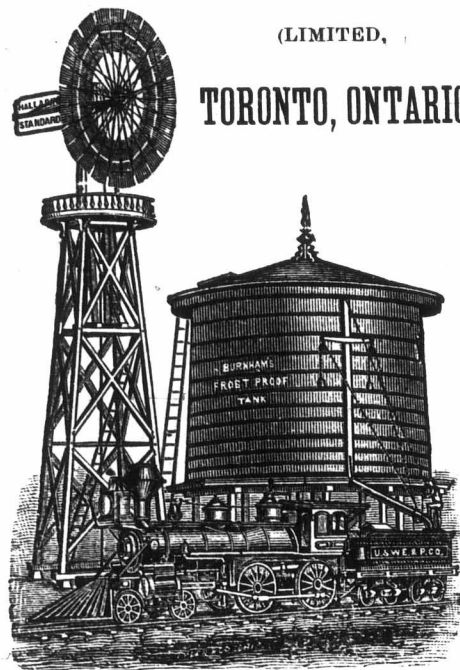
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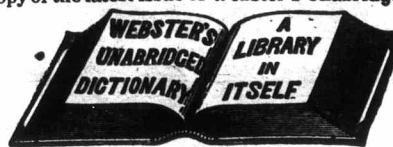


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